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IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON
FOR THE COUNTY OF KING

CITY OF SEATAC, a Washington Municipal Corporation,)	No. 16-2-22326-5SEA
)	
Plaintiff,)	APPLICATION AND PETITION FOR WRIT
vs.)	OF REVIEW PURSUANT TO RCW 7.16 et.
)	seq.
)	
THE PORT OF SEATTLE, a Washington Port District,)	
)	
Defendant.)	

I. INTRODUCTION

On August 26, 2016, Defendant Port of Seattle (Port) issued a SEPA Final Mitigated Determination of Non Significance (MDNS) of a proposed action for the Port’s Flight Corridor Safety Program near the Seattle-Tacoma International Airport (Airport) (Exhibit 13). The purpose of the State Environmental Policy Act (SEPA) is to ensure that governmental agencies consider the probable environmental impacts of a proposal prior to committing to a particular course of action. (WAC 197-11-055(2)(c)). Two policies and goals set forth in WAC 197-11-030 are that agencies shall, to the fullest extent possible:

- 1 • “Prepare environmental documents that are supported by evidence and that the
2 necessary environmental analysis has been made.” (WAC 197-11-030(2)(c));
- 3 • “Interpret and administer the policies, regulations, and laws of the state of
4 Washington in accordance with the policies set forth in SEPA and these
5 rules.” (WAC 197-11-030(2)(a));

6
7 In this instance, the Port’s decision to conduct piecemeal and segmented environmental
8 review of the Flight Corridor Safety Program is flawed. Furthermore, the Port’s failure to
9 analyze the cumulative impacts of the Program when it conducted its environmental review was
10 contrary to law. As a result, the MDNS issued by the Port was in error. Therefore, Plaintiff City
11 of SeaTac (City) seeks judicial review.

12
13 **II. STATUTORY BASIS FOR APPEAL UNDER SEPA**

14 SEPA appeals are made pursuant to RCW 43.21C.075 and WAC 197-11-680.

15
16 **III. COMPLIANCE WITH RCW 7.16.040**

17 RCW 7.16.040 provides that a Writ of Certiorari (Review) shall be issued when, an
18 inferior tribunal, board or officer, exercising judicial function, has “exceeded the jurisdiction of
19 such tribunal, board or officer, or one acting illegally, or to correct any erroneous or void
20 proceeding, or a proceeding not according to the course of the common law, and there is no
21 appeal, nor in the judgment of the court, any plain, speedy and adequate remedy at law.”

22
23 The City contends that the Port, by and through its officers, and more specifically the
24 Port’s SEPA Responsible Official, issued a MDNS in error and contrary to law.

1 There is no appeal or other plain, speedy and adequate remedy at law, and there is no
2 underlying action to consolidate with this appeal. The action is a “procedural determination
3 made by an agency when the agency is the project proponent.” (See RCW 43.21C.075(3)(b)(ii)).
4

5 Further, RCW 36.70C et. seq., the Land Use Petition Act, is not applicable to SEPA
6 decisions issued by the Port because the Port is not a local jurisdiction as defined by RCW
7 36.70C.020(3) (“Local jurisdiction means a county, city or incorporated town”).

8 The City also does not have the ability to appeal this decision under RCW 34.05, the
9 Administrative Procedures Act because the Port is not a State agency subject to Act.

10 The lack of an alternative remedy is also recognized in both the Final DNS issued and the
11 SEPA rules adopted by the Port.

12 The Final MDNS at issue, states as follows:

13 Appeals: The Port’s decision on the proposal described above and
14 the Port’s issuance of a Final MDNS on this proposal constitute the
15 Port’s final SEPA decision. This SEPA MDNS determination may
16 be appealed by filing a writ of review in King County Superior
17 Court within twenty-one (21) days of the date below [August 26,
18 2016] pursuant to Port of Seattle Resolution No. 3650 and RCW
43.21C.075.”

19 The Port of Seattle Resolution No. 3650 does not provide for an administrative appeal of
20 a DNS. (See Section 21.3 SEPA Decisions Subject to Appeal).

21 The Port’s SEPA rules continues:

22 Section 21.10 Judicial Review:

23 2. Port Decision not subject to administrative appeal under section 21
24 may be appealed to the King County Superior Court by application for
25 writ of review by and [an]appellant within twenty-one (21) [days] of
26 the date the decision is issued.

1 **IV. PARTIES**

2 The City of SeaTac, is a municipal corporation in the State of Washington.

3 The Port of Seattle, a Washington Port District, is a special purpose district. The Port
4 owns and operates the Seattle-Tacoma International Airport, which is wholly located within the
5 City of SeaTac.
6

7 **V. SCOPE OF PROJECT AND PROJECT LOCATION**

8 Per the Port's documents, the proposed project consists of three phases and will remove a
9 total of approximately 2,750 trees over the next three years ending in 2019 (Exhibit 13). Phase 1
10 is proposed to begin in the fourth quarter of 2016, and will remove 1,170 trees on 27 acres of
11 Port-owned property (Exhibit 13). After the removal of these trees, new trees and vegetation are
12 proposed to be replanted (Exhibit 13). Phase 2 will include removal of trees on commercial and
13 public properties, and Phase 3 will include removal of trees on private properties (Exhibit 13).
14 Probable impacts from the entire Flight Corridor Safety Project include noise, air quality, light,
15 glare, and soil erosion, and have not been identified and mitigated in this subject environmental
16 review and MDNS. However, the Port only wishes to conduct a review of the first phase of the
17 program. Only when the Port analyzes the cumulative impacts of the entire program can the full
18 impacts be adequately determined.
19
20

21 A majority of the Port's Flight Safety Corridor Program is located within the City of
22 SeaTac, in all directions surrounding the airport.
23

24 **VI. VENUE**

25 Venue is proper in King County pursuant to RCW 4.12.010.

26 **VII. JURISDICTION**

27 This Court has jurisdiction to issue a Writ of Review under RCW 7.16. et. seq.
28

1 The elements of this requirement have been phrased in differing
2 ways. Our Supreme Court in *Kucera* held, “**The injury in fact**
3 **element is satisfied when a plaintiff alleges the challenged**
4 **action will cause ‘specific and perceptible harm.’ ” *Kucera*, 140**
5 **Wash.2d at 213, 995 P.2d 63** (quoting *Leavitt v. Jefferson Cnty.*,
6 74 Wash.App. 668, 679, 875 P.2d 681 (1994)). A sufficient injury
7 in fact is properly pleaded when a property owner alleges
8 “immediate, concrete, and specific” damage to property, even
9 though the allegations may be “speculative and undocumented.”
10 ***Kucera*, 140 Wash.2d at 213, 995 P.2d 63** (quoting *Leavitt*, 74
11 Wash. App. at 679, 875 P.2d 681). “Where the plaintiff ‘alleges a
12 threatened injury rather than existing injury, he or she must also
13 show that the injury will be immediate, concrete, and specific.’ ”
14 *Harris*, 84 Wash.App. at 231, 928 P.2d 1111 (quoting *Leavitt*, 74
15 Wash.App. at 679, 875 P.2d 681).

16 Courts have also held that where, as in the case at hand, the allegations concerns
17 violations of a procedural nature, standing requirements may be relaxed. See *Five Corners*
18 *Family Farmers v. State*, 173 Wash. 2d 296, 303 (2011). Here, conducting piecemeal
19 environmental review of the Flight Corridor Safety Program and failing to conduct a cumulative
20 impact analysis constitutes a procedural defect under SEPA that directly impacts the City.

21 The issuance of the MDNS without the proper analysis of these impacts creates a specific
22 injury in fact to the City of SeaTac. Projects, such as the Flight Corridor Safety Program, may
23 have significant environmental adverse impacts on the City of SeaTac. The City has a beneficial
24 interest in protecting its environment from any adverse impacts. In this case, all of the impacts
25 cannot be determined if the Port fails to conduct the proper analysis.

26 IX. RECORD ON REVIEW

27 The record on review includes the following documents which have been identified as the
28 following Exhibits:

- Exhibit 1 – Flight Corridor Safety Obstruction Management City of SeaTac Briefing Powerpoint presentation dated January 11, 2016.

- 1 • Exhibit 2 – Email dated May 27, 2016 from Joseph Scorcio to Steve Pilcher, Subject:
2 FW: Sea-Tac Airport – Flight Corridor Safety Program Update – Comment Deadline.
- 3 • Exhibit 3 – Email dated May 31, 2016 from Steve Pilcher to Rybolt, Steven, cc:
4 Joseph Scorcio; Jeff Robinson; Milanese.m@portseattle.org, Subject: Flight Corridor
5 Safety Obstruction Management Program.
- 6 • Exhibit 4 – Flight Corridor Safety Program SeaTac City Council Briefing Powerpoint
7 presentation dated June 14, 2016.
- 8 • Exhibit 5 - SEPA Mitigated Determination of Non-Significance of Proposed Action
9 for Seattle-Tacoma International Airport (Sea-Tac Airport) Flight Corridor Safety
10 Program – Phase 1 issued on July 15, 2016 by Elizabeth Leavitt, Senior Director,
11 Environment and Sustainability, Port of Seattle.
- 12 • Exhibit 6 – Environmental Checklist – Seattle-Tacoma International Airport (Sea-Tac
13 Airport) – Flight Corridor Safety Program – Phase 1 dated July 15, 2016.
- 14 • Exhibit 7 – Appendix A to Environmental Checklist – Implementation Plan.
- 15 • Exhibit 8 – Appendix B to Environmental Checklist – Critical Areas Special Study.
- 16 • Exhibit 9 – Appendix C to Environmental Checklist – Greenhouse Gas Emissions
17 Worksheet.
- 18 • Exhibit 10 – Conceptual Plan – Seattle-Tacoma International Airport Flight Corridor
19 Safety Obstruction Management Program dated December 2015 and prepared by
20 Anchor QEA.
- 21 • Exhibit 11 – Email dated July 20, 2016 from Marco Milanese to Joseph Scorcio;
22 kamurong@burienwa.gov; Piasecki, Tony – City Manager (Des Moines);
23 Scott.Logan@highlineschools.org, cc: Rybolt, Steven; del Fierro, Sally; Gallagher,
24 Clare; Jeff Robinson, Subject: Information on the SEPA Process for Sea-Tac
25 Airport’s Flight Corridor Safety Program (with attachments)
- 26 • Exhibit 12 – Letter dated August 4, 2016 addressed to Elizabeth Leavitt, SEPA
27 Responsible Official, Senior Director, Environment and Sustainability, Port of Seattle
28 and Steve Rybolt, Environment and Sustainability Dept., Port of Seattle, from Steve
Pilcher, Acting SEPA Responsible Official, Planning Manager regarding MDNS for
Sea-Tac Airport Flight Corridor Safety Program – Phase 1.
- Exhibit 13 – Final SEPA Mitigated Determination of Non-Significance (MDNS) of
Proposed Action for Seattle-Tacoma International Airport (Sea-Tac Airport) Flight

1 Corridor Safety Program – Phase 1 dated August 26, 2016 by Elizabeth Leavitt,
2 Senior Director, Environment and Sustainability, Port of Seattle.

- 3 • Exhibit 14 - Letter dated September 1, 2016 addressed to Elizabeth Leavitt, SEPA
4 Responsible Official, Senior Director, Environment and Sustainability, Port of
5 Seattle, from Steve Pilcher, Acting SEPA Responsible Official, Planning Manager
6 regarding Final MDNS for Sea-Tac Airport Flight Corridor Safety Program – Phase
7 1.
- 8 • Exhibit 15 – Letter dated September 8, 2016 addressed to Mr. Steve Pilcher, Acting
9 SEPA Responsible Official, City of SeaTac, from Elizabeth Leavitt, Senior Director,
10 Environment and Sustainability, Port of Seattle regarding Final MDNS for the Flight
11 Corridor Safety Program – Phase 1.
- 12 • Exhibit 16 – Letter dated September 14, 2016 addressed to Elizabeth Leavitt, SEPA
13 Responsible Official, Senior Director, Environment and Sustainability, Port of
14 Seattle, from Steve Pilcher, Acting SEPA Responsible Official regarding Final
15 MDNS for Sea-Tac Airport Flight Corridor Safety Program – Phase 1 - Request for
16 withdrawal.

17 **X. STATEMENT OF CASE AND ARGUMENT**

18 A DNS requires a finding that, “there will be no probable significant adverse
19 environmental impacts from a proposal” (WAC 197-11-340). The process to be followed in
20 making this determination is set forth in WAC 197-11-330. This review includes a
21 determination of “the absolute quantitative effects of a proposal” regardless of the nature of the
22 existing environment. (WAC 197-11-330(3)(b)). If information is not “reasonably sufficient to
23 evaluate the environmental impact to make a threshold determination,” additional information
24 should be obtained. (WAC 197-11-335). Additional direction is found under WAC 197-11-060
25 which, in part, requires that proposals that are closely related be evaluated in the same
26 environmental document. (WAC 197-11-060(3)(b)).

27 The consideration of environmental impacts must also be careful and include short term
28 and long term effects (WAC 197-11-060(4)(c)), as well as direct, indirect, and cumulative

1 impacts. (WAC 197-11-060(4)(d) and WAC 197-11-792(2)(c)). Impacts shall include those that
2 are likely to arise or exist over the lifetime of a proposal or, depending on the particular proposal,
3 longer (WAC 197-11-060 (4)(c)).
4

5 The failure to consider probable environmental impacts has resulted in the reversal of a
6 DNS. (See e.g. *Boundary Review Board*, 122 Wash. 2d 648 (1993)). In this matter, there has
7 been no careful consideration of all probable environmental impacts, because the cumulative
8 impacts have been ignored. Instead the Port has simply concluded that a MDNS is appropriate
9 without a review of sufficient and appropriate evidence. Reaching a conclusion without
10 supporting analysis is contrary to SEPA and the MDNS should be withdrawn.
11

12 Chronology.

13 The City first learned about the Flight Corridor Safety Program in January, 2016, when
14 the City was briefed by Port staff (Exhibit 1). In May, 2016 the City had communications with
15 the Port regarding some of the details of the project, but not specific comments related to the
16 Port's environmental review. (Exhibits 2 and 3). Then, in June, 2016, the Port, gave a detailed
17 presentation to the SeaTac City Council (Exhibit 4). This presentation did not just discuss the
18 first phase of the Flight Corridor Safety Program; it discussed the entire program.
19

20 The Port issued a MDNS for the Flight Corridor Safety Program – Phase 1 on July 15,
21 2016, with a comment period expiring on August 5 (Exhibit 5). On August 4, 2016, the City
22 filed its official comments pertaining to the Port's MDNS (Exhibit 12). In that letter, the City
23 stated, "Both information that has been previously provided and the SEPA checklist itself
24 indicate that the Port has determined the full scope of this project, which will be implemented in
25 three phases. However, the MDNS only reflects the initial phase ("Phase 1") of tree removal and
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27

1 replanting.” The City also noted that pursuant to WAC 197-11-055(2), the environmental
2 analysis should address all three phases of the project.

3 On August 12, the City had a phone conference with Steve Rybolt, Port of Seattle
4 Environmental Programs Manager, to further discuss the City’s August 4 comment letter,
5 including the Port’s use of phased review. Mr. Rybolt’s explanation for the Port’s phased SEPA
6 approach was that they did not know with specificity how they would mitigate for Phases 2 and
7 3, and that is why they did not choose to address the program in its entirety.

8
9 The Port issued its Final MDNS on August 26, 2016 (Exhibit 13). Despite the City’s
10 comments stating that the MDNS should address all three phases of the Program, only the first
11 phase continued to be addressed. On September 1, 2016, the City responded to the Port’s Final
12 MDNS noting some conflicts between the Environmental Checklist and new mitigation measures
13 and re-iterating its concern that the Port should be addressing the project in its entirety, and not
14 just the first phase (Exhibit 14). The Port replied to the City’s September 1 letter on September 8
15 by defending its use of phased environmental review (Exhibit 15). The City again reiterated its
16 concerns, and requested that the Port withdraw the MDNS prior to the expiration of the appeal
17 period (Exhibit 16).
18
19

20 **A. The SEPA analysis is deficient because the Port is conducting piecemeal review of**
21 **the Flight Corridor Safety Program.**

22 Parts of proposals which are “related to each other closely enough to be, in effect, a
23 single course of action *shall* be evaluated in the same environmental document.” WAC 197-11-
24 060(3)(b) (*emphasis added*); *Indian Trail Property Owner's Ass'n v. City of Spokane*, 76 Wn.App
25 430, 443 (1994). Despite the City’s numerous requests that the Port analyze the cumulative
26 impacts of not just Phase 1, but all three phases in the same environmental document, the Port
27

1 has refused to do so (See Exhibits 12, 14, and 16). The Port's decision is contrary to SEPA and
2 should not be allowed.

3 The Port has dismissed the City's concern about piecemeal analysis. In a letter to the
4 City dated September 8, 2016, the Port noted that "None of the parts of this [Flight Corridor
5 Safety] program are "closely related" proposals" because "any of the individual obstructions can
6 be removed without necessarily compelling the removal of other obstructions in different
7 locations." (Exhibit 15). Stated a different way, cutting down one tree doesn't require cutting
8 down another, so there is no close relation. Frankly, this assertion by the Port is without merit.

9
10 The Port's rationale for removing all 2,750 trees in the Program is that all of these trees
11 are obstructions in the airport flight path (Exhibits 1, 4, 6, 7, and 10). Removing some, but not
12 all of the problem trees would mean that obstructions continue to remain. It is blatantly clear
13 that the Port has no intention of leaving any hazardous trees. Furthermore, if the Port doesn't
14 follow through on their plan and remove all of the obstructions, the Port would not be in
15 compliance with its FAA-issues Airport Operating Certificate. (Exhibit 2, pg 3, item #11). The
16 Port's Environmental Checklist and supporting documentation demonstrate that there is
17 sufficient information to conduct an analysis of the entirety of the program (Exhibits 6,7,8,9,10).

18
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20 **B. The SEPA analysis is deficient because identification of phased review was not**
21 **stated in the Port's MDNS.**

22 In its correspondence with the City, the Port indicates that they are conducting a phased
23 review, as provided in WAC 197-11-060. For example, in the Port's September 8, 2016 letter to
24 the City, they stated, "Regarding your comment concerning the phased approach used in this
25 SEPA determination, SEPA rules allow a proposal to be phased so that SEPA review can be
26 conducted for each phase." (Exhibit 15). The Port further cites WAC 197-11-060(5)(b) as
27

1 authority for authorizing phased review in this case. However, the Port's analysis omits one
2 important factor. WAC 197-11-060(5)(e) states, "When a lead agency knows it is using phased
3 review, it shall so state in its environmental document." Such a statement does not appear in the
4 Port's environmental documents. Without such a statement, phased review is not proper under
5 SEPA.
6

7 **C. The SEPA analysis is deficient because the Port's use of phased review avoids**
8 **discussion of cumulative impacts.**

9 Aside from the fact that the Port's environmental documentation omitted any reference
10 to phased review as required under WAC 197-11-060(5), the project itself is not a candidate for
11 phased review. WAC 197-11-060(5)(d) states that phased review is not appropriate when "it
12 would merely divide a larger system into exempted fragments or avoid discussion of cumulative
13 impacts." This is precisely what the Port has done here. They chose to divide the larger project
14 into smaller fragments.
15

16 The Flight Corridor Safety Program is slated to remove approximately 2,750 trees, and
17 the first phase will remove approximately 42% of this total (Exhibit 13). When conducting
18 SEPA review, the reviewing agency must look at the entire picture, not just 42% of it. By
19 conducting SEPA review in this fashion, the cumulative impacts of any project would never be
20 explored because the reviewing agency only looks at a small piece of the project while ignoring
21 the rest. Reviewing agencies should not be allowed to examine environmental impacts with
22 blinders on, and avoid addressing any cumulative impact analysis.
23

24 Additionally, future SEPA review for Phases 2 and 3 does not absolve the Port from
25 conducting an environmental analysis at this time. The Port states that "subsequent SEPA
26 review will be required for Phases 2 and 3 and will include public and agency outreach and
27

1 comment periods.” (Exhibit 6). The City does not dispute that the Port will conduct future
2 environmental analysis for these additional phases. In fact, such environmental review in the
3 future is likely appropriate. However, “the fact that proposals may require future agency
4 approvals or environmental review *shall not* preclude current consideration, *as long as proposed*
5 *future activities are specific enough to allow some evaluation of their probable environmental*
6 *impacts.”* WAC 197-11-055(a)(i) (*emphasis added*).

8 The Port has more than enough specific information at this time to evaluate the
9 environmental impacts of the entire Flight Corridor Safety Program. Here is just a portion of the
10 information that they know:

- 12 • Approximately 2,750 trees will be removed as part of the entire Program (Exhibit 13);
- 13 • The locations of the trees has been identified through a comprehensive obstruction
14 analysis that used Light Detection and Ranging (LiDAR) remote sensing and imaging
15 technology to identify obstructions (Exhibit 6);
- 16 • The obstruction locations were field verified by the Port’s third party consultant,
17 Anchor QEA (Exhibit 6);
- 18 • The field verification indentified additional trees and vegetation that would likely
19 penetrate the navigable airspace in the near future (Exhibit 6);

21 Despite the fact that the Port has determined the total number of trees that need to be
22 removed, where the trees are located through LiDAR imaging and field verification, the Port
23 chooses to only address the first phase of this program despite the City’s repeated requests. This
24 is an apparent willful intent to not identify and mitigate cumulative impacts. The only cure
25
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1 available is for the Port to withdraw the current MDNS, conduct the cumulative analysis, and
2 reissue another SEPA determination.

3 **XI. RELIEF REQUESTED**

4 The Port lacks the requisite analysis to issue a MDNS without conducting a cumulative
5 impact analysis. Until such time as the Port can conduct the proper analysis to support a
6 threshold determination, the issuance of a MDNS is clearly erroneous.
7

8 Therefore this Court should rule, as a matter of law, that the MDNS issued on August 26,
9 2016 is not in compliance with SEPA and order that the same be withdrawn.

10 Dated this 15 day of September, 2016.

11 CITY OF SEATAC

12 By 

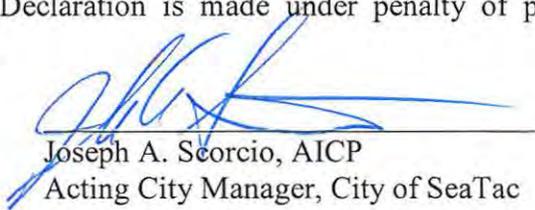
13 Mary E. Mirante Bartolo, WSBA #20546

14 Mark S. Johnsen, WSBA #28194

1
2 **DECLARATION**

3 I, Joseph A. Scorcio, am the Acting City Manager for the City of SeaTac, Plaintiff above
4 named; I have read the foregoing Petition for Writ of Review, know the contents thereof and
5 believe the same to be true. The foregoing Declaration is made under penalty of perjury
6 pursuant to the laws of the State of Washington.

7 Dated September 15, 2016.


Joseph A. Scorcio, AICP
Acting City Manager, City of SeaTac

8 STATE OF WASHINGTON)
9) :ss
10 COUNTY OF KING)

11 On this day personally appeared before me Joseph A. Scorcio, to me known to be the
12 Acting City Manager for the City of SeaTac, who executed the within and foregoing instrument,
13 and acknowledged that he signed the same as his free and voluntary act and deed for and on
14 behalf of the City of SeaTac, for the uses and purposes therein mentioned, and acknowledged
15 that he had lawful authority so to do.

16 Given under my hand official seal or stamp this 15th day of September, 2016.




Printed Name: Robbye L. Sanchez
Notary Public in and for the State
of Washington, residing at Seattle
My appointment expires 11/19/2018

EXHIBIT 1

Flight Corridor Safety Obstruction Management

City of SeaTac Briefing

1/11/16



Port 
of Seattle®

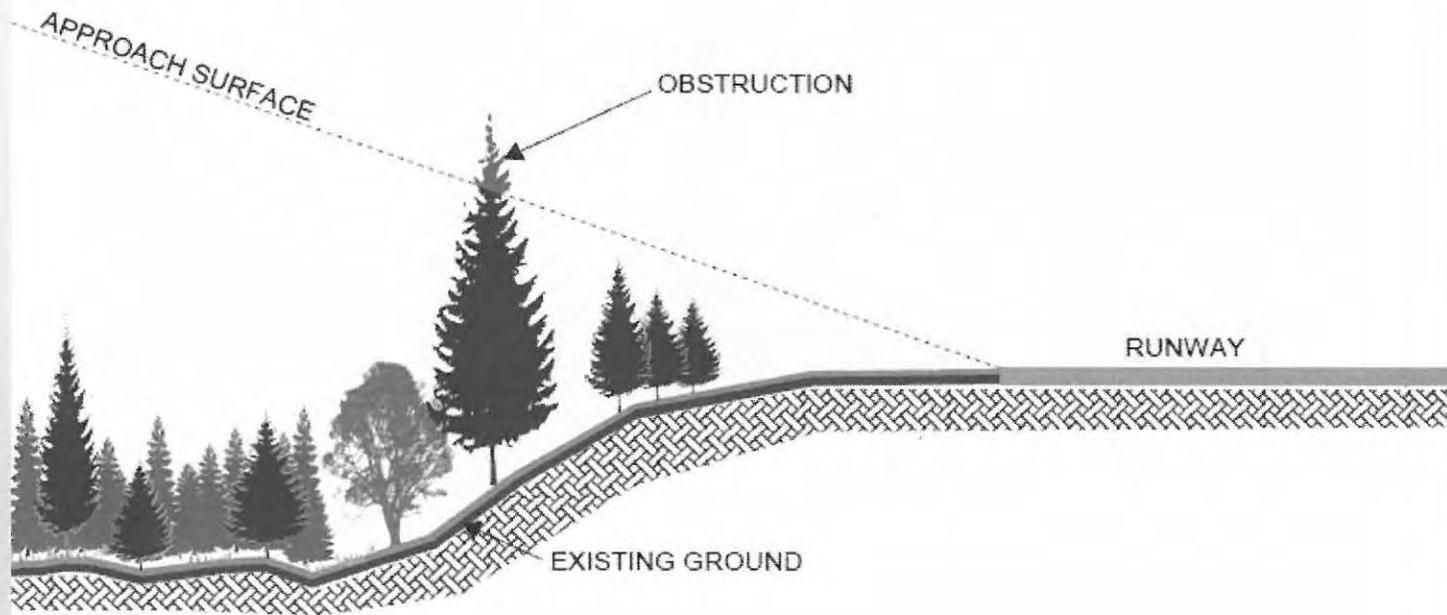
Why Obstruction Removal?

- FAA regulations and WA State law require airports to identify and remove obstructions to navigable airspace on and around the airport.
- Removal of obstructions helps to ensure safe operation of aircraft takeoffs and landings.
- This is not unusual - airports around the country manage similar programs to protect the safety of the flying public.

What are Obstructions?

- Obstructions on and around Sea-Tac Airport consist mostly of trees (and other vegetation).
- Preliminary analysis indicates the presence of trees needing removal from properties in SeaTac, Burien, Des Moines, Highline Public Schools, WSDOT and Seattle Public Utilities rights of way.

Obstruction Example



- Trees penetrating approach surfaces are considered obstructions.

Obstructions by Jurisdiction

Jurisdiction and Property Type	Obstruction Counts from LiDAR Survey*
City of Burien	
City	12
Private	66
Total	78
City of Des Moines	
Private	57
Total	57
City of SeaTac	
City	79
Port of Seattle	387
WSDOT	651
Private	174
Unknown	10
Total	1,301

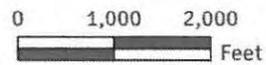
*This is preliminary data subject to change.

North Obstructions



Disclaimer: This map is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

Aerial Photo Taken Spring 2012



- City of Seatac Boundary
- Other City Boundaries
- Port of Seattle Property

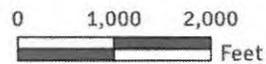
- Trees

South Obstructions



Disclaimer: This map is for general information only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

Aerial Photo Taken Spring 2012



- City of Seatac Boundary
- Other City Boundaries
- Port of Seattle Property
- Trees

General Program Phases

- Based on a phased delivery approach which will generally occur in the following sequence:
 - Phase One (2016): Port-owned property (on and off of airport)
 - Phase Two (2017): Publicly-owned and commercial properties
 - Phase Three (2018): Residential properties

Environmental

- Conceptual Plan (Complete)
- Regulatory Plan (In progress)
 - Coordinate with jurisdictions
- Implementation Plan (In progress)
 - Data needs and obstruction verification
- SEPA
 - Preliminary Checklist review with jurisdictions

Outreach and Communication with Impacted Cities, Businesses and Residents

- Initial outreach to cities and school district
- SEPA public comment period
- Commercial & residential communication

Next Steps

- Complete process to verify obstructions and determine local jurisdiction removal and/or replacement requirements.
- Comply with state, federal and local environmental requirements.
- Obtain Commission authorization to advertise and execute construction contract (Q1 2016).
- Proceed with Phase One (2016)
- Proceed with Phase Two (2017)
- Proceed with Phase Three (2018)

EXHIBIT 2

Steve Pilcher

From: Joseph Scorcio
Sent: Friday, May 27, 2016 9:53 AM
To: Steve Pilcher
Subject: FW: Sea-Tac Airport - Flight Corridor Safety Program Update - Comment Deadline

From: Al Torrico
Sent: Friday, May 27, 2016 9:22 AM
To: Joseph Scorcio
Subject: Re: Sea-Tac Airport - Flight Corridor Safety Program Update - Comment Deadline

Hi Joe,

I'm in Anacortes heading up to Lopez. Mom's condition is declining fairly quickly now so I decided to come up to see her earlier than planned. Saw your email this morning and realized I hadn't given you my comments. I spoke with Marco this morning about this. Left a VM with Jeff with my thoughts. Based on my conversation I am generally ok with phase 1 which is addressing trees in the flight path on POS property. Phase 2 which is about trees on private property won't begin until 2017. I have a few questions on how this work, but Steve Rybolt is out of the office for the long weekend. I'll be in SFO on Tuesday but will try and get a hold of him next week and relay what learn to you or Jeff. Hope that will suffice. Enjoy your long weekend. Albert

Sent from my iPhone

On May 19, 2016, at 5:13 PM, Joseph Scorcio <jscorcio@ci.seatac.wa.us> wrote:

Hi ILA Team,

Please review the following email and the attached document. The City will need to submit a comment letter on both the proposal and on the environmental document (separate deadlines). I would ask that you forward comments to Steve Pilcher ASAP so that we can get comments into the record.

The initial draft was sent out a couple of months ago and we met with POS representatives' to discuss the issue in detail. Now it is officially on the streets. This "flight corridor safety" project is in fact an extensive tree removal program. Please review and respond accordingly.

Thanks, Joe

From: Milanese, Marco [<mailto:Milanese.M@portseattle.org>]
Sent: Wednesday, May 18, 2016 4:39 PM
To: Joseph Scorcio
Cc: Gallagher, Clare; Jeff Robinson; Rybolt, Steven
Subject: Flight Corridor Safety Program Update - Implementation Plan

Dear Joe:

I have attached the Implementation Plan for the Port of Seattle's Flight Corridor Safety Program which outlines the obstruction locations and methods for removal on Port, public and private property surrounding Sea-Tac Airport over the next three years.

EXHIBIT 3

Steve Pilcher

From: Steve Pilcher
Sent: Tuesday, May 31, 2016 4:50 PM
To: Rybolt, Steven
Cc: Joseph Scorcio; Jeff Robinson; milanese.m@portseattle.org
Subject: Flight Corridor Safety Obstruction Management Program

Mr. Rybolt:

Thank you for providing us with the opportunity to comment on the April 2016 Implementation Plan prepared by Anchor AEA, LLC. City staff has the following comments at this time; we also plan to comment during the SEPA Public Comment Period which will begin in June.

1. The document is written as a consultant recommendation to the Port of Seattle, frequently discussing what "should" be done. The final document needs to clarify what course of action the Port is committed to taking, as opposed to outlining various options.
2. The proposal is to remove a total of 2,751 trees and replant 3,077 trees, a net gain of 326 trees. Typically, a higher replacement ratio is used in anticipation of tree mortality (e.g., 1.5 to 1).
3. Section 3.4 indicates that trees will be warranted for one year after planting; we suggest this period be extended to a minimum of 3 years. That is the standard length for a landscaping bond per SeaTac Code (SMC 15.445.150).
4. Table 4.1 outlines tree replacement requirements. SeaTac's regulations require retention of 12% of all significant trees found on non-residential properties; any removed in excess of that standards are to be replaced at a 3:1 ratio (see SMC 15.445.420).
5. The size of replacement trees will be significantly less than those being removed. How does the Port plan to address the temporal impact of losing the carbon sequestration benefit of 2,751 trees until replacement trees grow enough to equal this loss?
6. Any work proposed to be conducted within a wetland or associated buffer (or other critical area) will need to be accompanied by a critical areas report prepared by a qualified professional.
7. Many of the proposed activities will require permits from the City, including Site Engineering (STE) and Right-of-Way (ROW) permits. Permit plans will be reviewed at that time and may result in specific comments. Each site will be evaluated on a case-by-case basis and require separate permits.
8. Section 3.2.5 notes that timber sales may occur for the Port and WSDOT. Will this activity be extended to other property owners?

Thank you again for the opportunity to comment. We look forward to receiving a copy of the SEPA checklist and determination upon issuance next month.

Steve Pilcher, Planning Manager
City of SeaTac
4800 S. 188th St.
SeaTac, WA 98188-8605
206-973-4832
[*spilcher@ci.seatac.wa.us*](mailto:spilcher@ci.seatac.wa.us)

EXHIBIT 4

Flight Corridor Safety Program

SeaTac City Council
Briefing

6/14/16



Port 
of Seattle®

Marco Milanese & Steve Rybolt

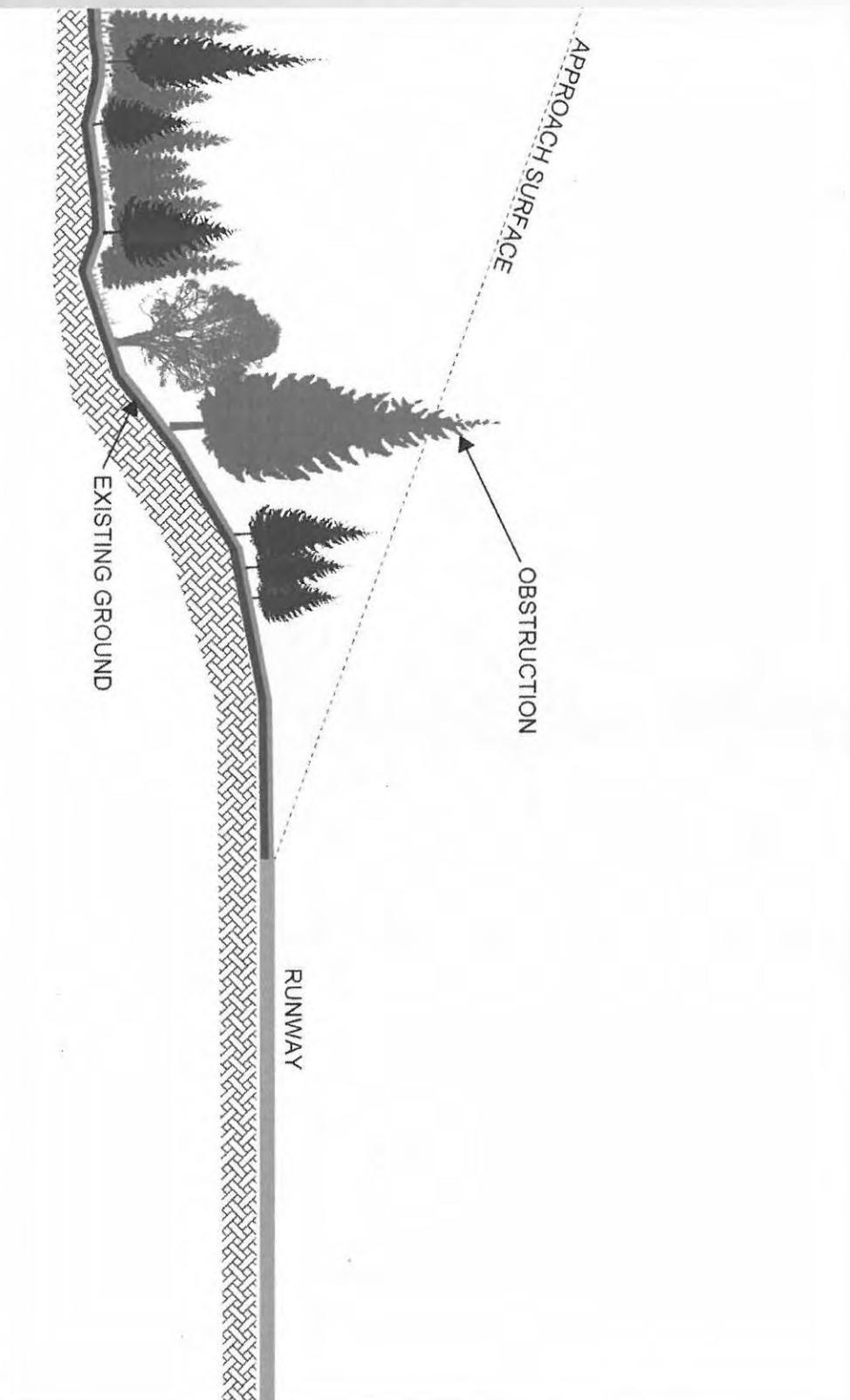
Why the Program?

- SAFETY - Program designed to safeguard people in flight, at the airport and in the surrounding communities
- SAFETY – Program designed to ensure objects obstructing approach and departure surfaces are removed
- SAFETY – Program designed to certify airport compliance with FAA regulations

What are Obstructions?

- Obstructions on and around airport consist mostly of trees
 - Current obstructions currently penetrate approach/departure surfaces
 - Potential obstructions predicted to penetrate approach/departure surfaces within five years
- Aerial analysis and follow-up field work identified approximately 2,800 obstructions

Example of Current Obstruction



Obstructions by Jurisdiction

Obstruction Removal Summary by Location

Jurisdiction Property Ownership	Obstruction Removal						Understory Tree Removal	Total Trees Removed
	Existing Obstructions ¹	Potential Obstructions ²	Total Obstructions	Obstructions Within Sensitive Areas				
				Existing	Potential	Total ³		
City of SeaTac								
Port	362	478	840	149	238	387	327	1,167
WSDOT	484	119	603	0	0	0	621 ⁴	1,224
Public	87	41	128	4	11	15	0	128
Residential	46	22	68	0	0	0	0	68
Commercial/Religious	22	22	44	2	5	7	0	44
Subtotal	1,001	682	1,683			09	948	2,631
City of Burien								
Public	6	0	6	0	0	0	0	6
Residential	58	14	72	0	0	0	0	72
Commercial	0	0	0	0	0	0	0	0
Subtotal	64	14	78			0	0	78
City of Des Moines								
Public	0	0	0	0	0	0	0	0
Residential	16	22	38	1	1	2	0	38
Commercial	0	0	0	0	0	0	0	0
Subtotal	16	22	38			2	0	38
Total	1,081	718	1,799			411	948	2,747

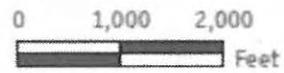
- Notes:
- Existing obstructions are trees that are currently within the navigable airspace for STIA.
 - Potential obstructions are trees that are predicted to enter the navigable airspace within 5 years.
 - Totals are adjusted to reflect the actual number of tree obstructions within sensitive areas, and remove double counting (e.g., individual trees that are within both steep slope and wetland buffer areas).
 - Estimated understory quantity is preliminary and subject to change (derived from aerial photograph analysis).

North Obstructions



Disclaimer: This map is for general informational purposes only. Data Layers that appear on this map may or may not be available, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

Aerial Photo Taken Spring 2012



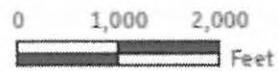
- City of Seatac Boundary
- Other City Boundaries
- Port of Seattle Property
- Trees

South Obstructions



Disclaimer: This map is for general reference only. Data Legend: Red outline on this map may or may not be accurate, current, or otherwise reliable. THIS IS NOT TO BE USED FOR CONSTRUCTION.

Aerial Photo Taken Spring 2012



-  City of Seatac Boundary
-  Other City Boundaries
-  Port of Seattle Property
-  Trees

General Program Phases

- Work will generally occur over three years:
 - 2016: Port properties (on and off airport)
 - 2017: Publicly-owned and commercial properties
 - 2018: Residential properties
- Program will continue as needed over ensuing years

Outreach & Communication with Impacted Parties

- Early outreach to public agencies & jurisdictions
- Airport/Port newsletters
- 4/11 Public Information Session
- Program website/dedicated email address
- Environmental Process

Environmental Process

- Conceptual Plan (Complete)
- Regulatory Plan (Complete)
- Implementation Plan (Complete)
 - Data needs and obstruction verification
 - Coordinated with jurisdictions
- Design/Re-Planting Plan (In Progress)
- SEPA
 - Preliminary Checklist review with jurisdictions
 - Public comment period in July

Re-Planting Strategy

- Minimum 1:1 replanting ratio
- Comply with all federal, state, and local environmental and permitting requirements
- Re-plant onsite, adjacent properties, or establish a “tree bank”
- Plant airport compatible or “short” tree species
- Establish a monitoring program for tree establishment

EXHIBIT 5

**State Environmental Policy Act
Mitigated Determination of Non-Significance of Proposed Action for
Seattle-Tacoma International Airport (Sea-Tac Airport)
Flight Corridor Safety Program - Phase 1**

Date of Issuance: July 15, 2016

Proponent/applicant: Port of Seattle

Purpose of this Notice: The Port of Seattle announces the availability of the State Environmental Policy Act (SEPA) Mitigated Determination of Non-Significance (MDNS) for the proposed Flight Corridor Safety Program – Phase 1 project. This MDNS has been prepared pursuant to the Washington State Environmental Policy Act (SEPA) under Chapter 43.21C, Revised Code of Washington (RCW), Chapter 197-11, Washington Administrative Code (WAC), Port Commission Resolution 3650, and Port of Seattle SEPA Policies and Procedures.

Description of Proposal: The Port of Seattle is proposing to remove obstructions consisting of trees and other vegetation at and around Seattle-Tacoma International Airport. Removal of the obstructions will ensure the Airport complies with Federal Aviation Administration (FAA) regulations for airport operators to protect flight operations into and out of the airport and assure that objects obstructing aircraft approach and departure areas are removed.

The Flight Corridor Safety Program is planned to be accomplished in three phases and will remove a total of approximately 2,750 trees over the next three years ending in 2019. Phase 1, expected to begin in the fourth quarter of 2016, will include the removal of obstructions on Port-owned properties, Phase 2 will include the removal of obstructions on commercial and public properties, and Phase 3 will include the removal of obstructions on private properties. This SEPA document is for Phase 1. SEPA will also be required for Phases 2 and 3.

Phase 1 will remove approximately 1,170 trees on 27 acres of Port of Seattle property. After the removal of obstructions, new trees and vegetation will be replanted in accordance with federal, state, and local requirements and Port of Seattle policy. Approximately 2,400 trees will be planted in Phase 1. Additionally, shrubs and hydro seeding are intended to revegetate areas where ground vegetation or understory impacts occur.

Location of Proposal: Phase 1 has six project sites located at and around Seattle-Tacoma International Airport. The airport address is 17801 Pacific Highway South, Seattle, Washington, 98158.

- Site 1 - Located immediately north of South 154th Street and Runway 16R/34L and south of State Route 518
- Site 2 - Located immediately west and adjacent runway 16R/34L and Port of Seattle's West Side Offices
- Site 3a - Located directly south of runway 16C/34C and S 188th Street surrounding the north and east edges of lagoon 3
- Site 3b - Located directly south of runway 16C/34C and S 188th Street surrounding the north and east edges of lagoon 3
- Site 4 - Located south of the airport and south of Site P-3a and Site P-6, southwest of Site P-3b, west of the runway 16L/34R ALSF, and intersected by S 200th Street
- Site 5 - Located south of runway 16C/34C, directly south of S 200th Street, and west of Site P-4
- Site 6 - Located west of Site P-3b and runway 16L/34R Approach Lighting System with Sequence Flashers (ALSF) and south of Site P-3a

Lead Agency: Port of Seattle, SEPA File Number 16-04

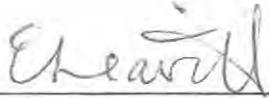
Determination: The Port of Seattle has completed an environmental evaluation including review of the proposed Flight Corridor Safety Program – Phase 1 project, including all pertinent and available environmental information. On July 15, 2016 as lead agency, the Port determined the proposed project would not have a probable significant adverse impact on the environment. Therefore, an Environmental Impact Statement (EIS) is not required under RCW 43.21C.030(2)(c).

SEPA MDNS Available: Copies of the SEPA MDNS are available for review at the Port of Seattle office, Environment and Sustainability Department, Pier 69, 2711 Alaskan Way, Seattle, Washington, and Seattle-Tacoma International Airport, Airport Office Building reception, 17801 International Boulevard, Seattle, Washington, during business hours of 8:30 AM to 4:00 PM. Alternatively, the SEPA MDNS can be reviewed and downloaded at the Port of Seattle website at: <http://www.portseattle.org/Environmental/Environmental-Documents/SEPA-NEPA/Pages/default.aspx> and at the Flight Corridor Safety Program website at: http://www.portseattle.org/Business/Construction-Projects/Airport-Projects/Pages/safe_corridor.aspx.

Public and Agency Comment: You are invited to provide written comments on the SEPA MDNS. All comments must be received by 4:00 PM on August 5, 2016. Written comments should be addressed to: Steve Rybolt, Port of Seattle, Environment and Sustainability Department, P.O. Box 68727, Seattle, Washington 98168. Comments may also be submitted to the Port's electronic mail address at SEPA.p@portseattle.org. Please include your mailing address when submitting comments to the electronic mail address. Any questions, contact Steve Rybolt, 206.787.5527.

After reviewing public and agency comments on the SEPA MDNS, the Port will issue a final SEPA MDNS.

Responsible Official: Elizabeth Leavitt
Position/Title: Senior Director, Environment and Sustainability, Port of Seattle
Address: Pier 69
P.O. Box 1209
Seattle, WA 98111



SEPA Responsible Official
Port of Seattle
July 15, 2016

Translations help for non-English speaking neighbors of Sea-Tac Airport

If you need assistance or want to receive a response to a question in your native language, please call the Port's language help line:

Para español, llame al (206) 787-3797 y marque 1.

Để sử dụng tiếng Việt, gọi số (206) 787-3797 và nhấn phím 2

Soomaali, wac (206) 787-3797, kadib riix 3.

សម្រាប់ភាសាខ្មែរ សូមហៅទូរស័ព្ទលេខ (206) 787-3797 ហើយចុចលេខ 4។

For other languages, call (206) 787-3797 and press 5.

SITE MAP



© 2016 Port of Seattle_0033-0021-ObstructionRemoval/Maps/2016_04/Report_Figures/Figure 02 - Location of Existing and Potential Obstructions.mxd last written: 4/25/2016 11:02:30 AM

- Sites by ownership**
- Port
 - Public
 - Private
 - Existing Obstructions
 - Potential Obstructions



Port of Seattle

Location of Obstructions
 Flight Corridor Safety Program
 Port of Seattle

EXHIBIT 6

ENVIRONMENTAL CHECKLIST
Seattle-Tacoma International Airport (Sea-Tac Airport)
Flight Corridor Safety Program – Phase 1

A. BACKGROUND

1. Name of proposed project, if applicable:

Flight Corridor Safety Program – Phase 1

2. Name of applicant:

Port of Seattle

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

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

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

4. Date checklist prepared: July 15, 2016

5. Agency requesting checklist: Port of Seattle – SEPA File Number 16-04

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

The Flight Corridor Safety Program will be completed in three initial phases, 2016 – 2019. Phase 1, expected to begin in the fourth quarter of 2016, will include the removal of obstructions (i.e. trees and vegetation) on Port-owned properties, Phase 2 will include the removal of obstructions on commercial and public properties, and Phase 3 will include the removal of obstructions on private properties.

This SEPA checklist describes the Flight Corridor Safety Program - Phase 1 and will provide preliminary information for Phases 2 and 3.

Subsequent SEPA will be required for Phases 2 and 3. Phase 2 SEPA review is anticipated to occur in the third quarter of 2017 and Phase 3 SEPA review is anticipated to occur in the third quarter 2018.

Beyond 2019, future obstructions will be removed as they are identified. The Port will undertake additional environmental review as required.

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

Yes. The removal of obstructions to navigable airspace will continue into the future.

In 2014, the Port conducted a comprehensive obstruction analysis that used Light Detection and Ranging (LiDAR) remote sensing and imaging technology to identify obstructions extending into, or very near, navigable airspace. The imaging process identified more than 1,600 obstructions. These obstructions are primarily trees or stands of trees that are located on Port-owned properties, other public properties (owned by the Washington State Department of Transportation [WSDOT], the City of SeaTac, or the City of Burien), and commercial and private lands in the cities of Burien, SeaTac, and Des Moines. Following the LiDAR obstruction analysis, the obstruction locations were field verified by a third party consultant, Anchor QEA. Anchor QEA physically identified 1,081 existing obstructions that penetrated into the navigable airspace. During the field investigation, Anchor QEA also identified other trees or vegetation that would likely penetrate the navigable airspace in the near future. These

future obstructions will be removed as part of this program, for a total of approximately 1,800 obstructions that are penetrating, or will penetrate, the navigable airspace within the next 5 years. It is expected that approximately 2,750 trees (i.e. obstructions plus associated and impacted understory trees) will be removed over the next three years ending in 2019. Upon completion of the first three phases of this program, a similar method will be used to identify obstructions beyond 2018. Per Federal Aviation Administration (FAA) requirements, the obstructions will be removed.

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

- Sea-Tac Airport Light Detection and Ranging (LiDAR) Comprehensive Obstruction Analysis (4/2014)
- Seattle-Tacoma International Airport Flight Corridor Safety Obstruction Management Program – Port of Seattle Commission briefing (11/24/2015)
- Seattle-Tacoma International Airport Flight Corridor Safety Obstruction Management Program – City of SeaTac staff briefing (1/11/2016)
- Seattle-Tacoma International Airport Flight Corridor Safety Obstruction Management Program – City of Des Moines staff briefing (1/21/2016)
- Seattle-Tacoma International Airport Flight Corridor Safety Obstruction Management Program – City of Burien staff briefing (1/22/2016)
- Seattle-Tacoma International Airport Flight Corridor Safety Obstruction Management Program – City of Highline School District staff briefing (1/21/2016)
- Seattle-Tacoma International Airport Flight Corridor Safety Obstruction Management Program – Washington State Department of Transportation staff briefing (3/10/2016)
- Seattle-Tacoma International Airport Flight Corridor Safety Obstruction Management Program – Port of Seattle Commission Design Authorization (2/9/2016)
- Seattle-Tacoma International Airport Flight Corridor Safety Obstruction Management Program – Conceptual Plan (12/2015)
- Seattle-Tacoma International Airport Flight Corridor Safety Obstruction Management Program – Public briefing meeting (4/11/2016)
- Seattle-Tacoma International Airport Flight Corridor Safety Obstruction Management Program – Regulatory Plan (4/2016)
- Seattle-Tacoma International Airport Flight Corridor Safety Obstruction Management Program – Implementation Plan (4/2016)
- Seattle-Tacoma International Airport Flight Corridor Safety Obstruction Management Program – Critical Areas Special Study (4/2016)
- Seattle-Tacoma International Airport Flight Corridor Safety Obstruction Management Program – City of SeaTac council briefing (6/14/2016)
- Port of Seattle 60% Design Documents – Phase 1 (5/2016)
- Port of Seattle 90% Design Documents – Phase 1 (7/2016)
- Port of Seattle 100% Design Documents – Phase 1 (Anticipated Quarter 3 2016)

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

Yes, additional government approvals will be required in advance of project commencement. This includes:

- FAA Airport Operating Certificate
- Port of Seattle staff will seek Port of Seattle Commission authorization for additional design and construction funding at a publically held meeting anticipated on August 9, 2016.

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

- U.S Army Corps of Engineering Notification and Consent for Impacts within Mitigation Areas;
- FAA Airport Circular 150/5300.13A – Maintenance of obstacle clearance surfaces;
- Revised Code of Washington Section 14.12.020 – Airport hazards contrary to public interest;
- Washington State Department of Natural Resources Forest Practices Act (Class IV-General) review;
- Washington State Department of Ecology Construction Stormwater General Permit;
- City of SeaTac/Sea-Tac International Airport Interlocal Agreement; and
- Port of Seattle Landscape Design Standards Review.

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.)

As a condition of the FAA-issued Airport Operating Certificate, the Port of Seattle is required to ensure there are no obstacles or obstructions on or around Seattle-Tacoma International Airport (STIA) that could affect aviation safety. 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 Code of Federal Regulations [CFR] Part 77).

The Port of Seattle identified approximately 1,800 obstructions that penetrate, or will penetrate, the navigable airspace within the next five years. These obstructions are located on or adjacent to STIA on Port of Seattle property and within the cities of SeaTac, Burien, and Des Moines and will be removed per FAA regulations. This project is broken down into fourteen general sites. Generally, these sites include seven Port of Seattle owned sites, three publically owned sites, one commercial site, and three residential sites. Some of these sites are located within critical areas. These sites are identified in section 12 of this document and identified in detail in Appendix A, “Implementation Plan, Seattle-Tacoma International Airport, Flight Corridor Safety Program.”

Phase 1 will remove approximately 1,170 trees on 27 acres of Port of Seattle property. After the removal of obstructions, new trees and vegetation will be replanted in accordance with federal, state, and local requirements and Port of Seattle policy. Approximately 2,400 trees will be re-planted in Phase 1. Shrubs and hydro seeding are intended to revegetate areas where ground vegetation or understory impacts occur during removal activity in densely treed areas. Re-planted trees will be low-height species and are not anticipated to become future obstructions.

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.

The program will be located in and around Seattle-Tacoma International Airport (STIA). The physical address of STIA is:

17801 Pacific Highway South
Seattle, WA 98158

Latitude: 47.448417
Longitude: -122.302099

The program is broken down into 14 general sites. A map is available in Appendix A, “Implementation Plan, Seattle-Tacoma International Airport, Flight Corridor Safety Program.”

Phase 1

1. Site Port 1 (P-1): Located immediately north of South 154th and Runway 16R/34L and south of State Route 518

Latitude: 47.467399
Longitude: -122.307090

2. Site Port 2 (P-2): Located immediately west and adjacent runway 16R/34L and Port of Seattle’s West Side Offices

Latitude: 47.450151
Longitude: -122.320426

3. Site Port 3a (P-3a): Located directly south of runway 16C/34C and S 188th Street surrounding the north and east edges of lagoon 3

Latitude: 47.433636
Longitude: -122.310641

4. Site Port 3b (P-3b): Located south of runway 16L/34R, east of the 16L/34R Approach Lighting System with Sequence Flashers (ALSF), and within the former Tyee Valley Golf Course

Latitude: 47.425594
Longitude: -122.306521

5. Site Port 4 (P-4): Located south of the airport and south of Site P-3a and Site P-6, southwest of Site P-3b, west of the runway 16L/34R ALSF, and intersected by S 200th Street

Latitude: 47.424084
Longitude: -122.309654

6. Site Port 5 (P-5): Located south of runway 16C/34C, directly south of and S 200th Street, and west of Site P-4

Latitude: 47.421267
Longitude: -122.312357

7. Site Port 6 (P-6): Located west of Site P-3b and the runway 16L/34R ALSF and south of Site P-3a

Latitude: 47.427016
Longitude: -122.308795

Phase 2

8. Site Washington State Department of Transportation (WSDOT) 1 (WP-1): Comprised of three general locations; one area is directly west of the airport, and the other two are south of lagoon 3, south of the airport and surrounded by Sites P-4 and P-5. The two southern locations are divided by S 200th Street and 18th Avenue S

Latitude: 47.424145
Longitude: -122.312722

9. Site SeaTac 1 (SP-1): Comprised of two general locations, SP-1a and SP-1b. SP-1a is located north of the airport, north and east of the North Employee Parking Lot, and south of the Boeing warehouse on a Seattle Public Utility water reservoir

Latitude: 47.471383

Longitude: -122.303710

SP-1b sites are located south and west of the airport. There are six small sites

Site SP-1b.1 is located immediately northeast of the Puget Sound Skills Center and west of State Route 509

Latitude: 47.442340

Longitude: -122.321085

Site SP-1b.2 is located immediately west of the Hertz Rent-a-Car Administration Office

Latitude: 47.435721

Longitude: -122.321938

Site SP-1b.3 is located immediately west of Seattle Air Cargo and north of S 192nd Street.

Latitude: 47.432165

Longitude: -122.32423

Sites SP-1b.4, 5, and 6 are located within the confines of Des Moines Memorial Drive, S 200th Street, and S 196th Street/18th Avenue S

Latitude: 47.425197

Longitude: -122.314450

10. Site Burien 1 (BP-1): Comprised of two locations, one north of the airport and one west of the airport.

Site BP-1a is located immediately south of the Puget Sound Skills Center and north of State Route 509

Latitude: 47.440452

Longitude: -122.322915

Site BP-1b is located south of S 142nd Street, north of S 143rd Place, east of 8th Avenue S, and west of Ajax Parking

Latitude: 47.475852

Longitude: -122.321928

11. Site SeaTac Commercial/Industrial 1 (SCI-1): Comprised of one location north of the airport and three locations south of the airport

Site SCI-1a is located south of the Boeing warehouse and north of S 146th Street.

Latitude: 47.472604

Longitude: -122.304643

SCI-1b sites are located south of the airport. There are three small sites

Site SCI-1b.1 is located immediately south of the Hertz Rent-a-Car Administration Office and west of Des Moines Memorial Drive S

Latitude: 47.434443

Longitude: -122.320383

Site SCI-1b.2 is located immediately east of Prince of Peace Lutheran Church and north of S 192nd Street

Latitude: 47.431773
Longitude: -122.323033

Site SCI-1b.3 is located on the corner of S 188th and 16th Ave S Street.

Latitude: 47.434532
Longitude: -122.314122

Phase 3

12. Site SeaTac Residential 1 (SR-1): Comprised of one location northeast of the airport and three locations southwest of the airport.

Site SR-1a is located east of the Boeing warehouse between 24th and 25th Avenue S and S 142nd and S 146th Streets

Latitude: 47.473714
Longitude: -122.301720

SR-1b sites are located southwest of the airport. There are three general areas

Site SR-1b.1 is located west-northwest of Euro Asian Garage Auto Repair

Latitude: 47.436818
Longitude: -122.320517

Site SR-1b.2 is generally located around the International Airport Center; north of S 194th Street, property line south of Transgroup Worldwide Logistics, east of 8th Avenue S, west of Des Moines Memorial Drive

Latitude: 47.430261
Longitude: -122.323234

Site SR-1b.3 is generally located south of the airport south of 192nd Street, immediately south of S 200th Street, east of Des Moines Memorial Drive S, and west of 18th Avenue S

13. Site Burien Residential 1 (BR-1): Comprised of two locations northwest and southwest of the airport.

Site BR-1a is located south of S 142nd Street, north of S 143rd Place, east of 8th Avenue S, and west of Ajax Parking

Latitude: 47.475852
Longitude: -122.321928

Site BR-1b is located immediately northeast of the Puget Sound Skills Center and west of State Route 509

Latitude: 47.442340
Longitude: -122.321085

14. Site Des Moines Residential 1 (DR-1) is generally located south of S 194th Street, north of S 208th Street, east of Des Moines Memorial Drive S, and west of 1st Avenue South

Latitude: 47.427824
Longitude: -122.328064

B. ENVIRONMENTAL ELEMENTS

1. Earth

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

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

Most of the sites impacted are flat and rolling. However, some sites have slopes that are approximately 40% in grade. Sites for Phase 1 with steep slopes are identified in the Appendix B, “Critical Areas Special Study, Seattle-Tacoma International Airport, Flight Corridor Safety Obstruction Management Program – Appendix D.” Critical areas special studies will be required for Phases 2 and 3.

- 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 consists of pre-existing glacial till (i.e. Vashon till) and associated outwash sediments or imported sand and gravel that was 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 history of unstable soil at the site.

- 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.**

There will be no fill, excavation, or grading for the proposed program.

- 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; however, erosion and sediment control best management practices 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 this program

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

During construction a Temporary Erosion and Sediment Control (TESC) plan will be in place to prevent erosion at all sites.

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 resulting from workers traveling to/from the site and construction equipment. Construction activities would also result in short-term, construction-related air emissions such as dust and vehicle exhaust. The re-planting of additional trees is expected to offset any carbon reductions resulting from tree removal.

See Section 8.1 and Appendix C, “Greenhouse Gas Emissions Worksheet Supplemental Information for SEPA Environmental Checklist,” for additional information.

- 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 would affect this project.

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

The contractor performing construction will be required to maintain and repair all equipment in a manner that meets state regulation 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.**

East Fork Des Moines Creek, the mainstem of Des Moines Creek, and wetlands are located within the program boundary.

Appendix B, "Critical Areas Special Study, Seattle-Tacoma International Airport, Flight Corridor Safety Obstruction Management Program," describes these surface water bodies as applicable to Phase 1.

Phases 2 and 3 will also be within the immediate vicinity of these surface water bodies and will be required to be identified within a subsequent critical area study for each phase.

- 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.**

Phase 1 will require work adjacent to East Fork Des Moines Creek (i.e. in the stream buffer) and over adjacent wetlands. Appendix B, the "Critical Areas Special Study, Seattle-Tacoma International Airport, Flight Corridor Safety Obstruction Management Program," identified impacts to critical areas and how work will occur in and adjacent to these areas. Appendix A, the "Implementation Plan, Seattle-Tacoma International Airport, Flight Corridor Safety Plan" identifies the methods through which work will occur adjacent to East Fork Des Moines Creek and within wetlands.

- 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 will be no fill or dredge material that would be placed in or removed from the surface water or wetlands.

- 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.**

Site P-6 partially lies within the 100-year floodplain. Appendix A, the "Implementation Plan, Seattle-Tacoma International Airport, Flight Corridor Safety Plan" identifies the location of Site P-6.

- 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**

Ground water will not be withdrawn or nor will water be discharged to ground water for this 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.

Stormwater for Phase 1 drains into the Airport's stormwater system and through natural infiltration processes.

Treatment methods within the Airport's stormwater system include infiltration and detention. Once treated, water is discharged to Puget Sound via Des Moines Creek, Miller Creek, and Walker Creek. All storm drain system and discharges are subject to the Airport's NPDES permit (#WA-002465-1).

Outside of the Airport's stormwater system, natural infiltration will discharge to Puget Sound via the Des Moines Creek sub-basin. This will be subject to a Construction Stormwater General Permit.

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

Phase 1 program design and construction management would prevent discharge of waste materials to surface waters.

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

The program does not alter or otherwise affect drainage patterns in the vicinity of the sites.

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

Water quality would be maintained by treatment under conditions of an approved Construction Stormwater General Permit and an associated Stormwater Pollution Prevention Plan (SWPPP).

4. Plants

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

deciduous tree: alder, maple, aspen, other: madrone, poplar, cottonwood, cherry, locust, ash, birch,

evergreen tree: fir, cedar, pine, other: hemlock

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?

Phase 1 will remove 1,167 trees and areas of ground vegetation or understory where dense tree stands will be removed. Trees and understory being removed include those identified within Appendix A, the “Implementation Plan, Seattle-Tacoma International Airport, Flight Corridor Safety Plan.” After the removal of trees, new trees and vegetation will be re-planted. Phase 1 will re-plant approximately 2,400 trees. Shrubs and hydro seeding are intended to revegetate areas where ground vegetation or understory impacts occur. Tree species used for re-planting are not anticipated to become future obstructions because they will be low-height species.

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

No threatened or endangered plant species are known to be on or near the site.

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

After the removal of trees, new trees and vegetation will be planted. Re-planting requirements will occur at a minimum of 1:1 with additional plantings in critical areas or as defined by local, state, and federal requirements and Port of Seattle policy.

Phase 1 will re-plant approximately 2,400 native trees. Shrubs and hydro seeding are intended to revegetate areas where ground vegetation or understory impacts occur. Re-planted tree species should not become future obstructions. All re-planted species for Phase 1 will meet the City of SeaTac/Sea-Tac International Airport Interlocal Agreement and Sea-Tac International Airport Landscape Design Standards.

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

Invasive species at Phase 1 sites primarily consist of ivy, blackberry, tansy, and poison hemlock.

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: , heron, , , other: , , , , , , ,

Mammals: deer, bear, elk, beaver other: , , ,

Reptiles:

Amphibian: ,

Fish: bass, salmon, , 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 the Airport properties.

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

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

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

No preservation or enhancement measures are proposed. Re-planted trees and shrubs will adhere to Sea-Tac International Airport Landscape Design Standards to support safe airport operations. The program is not expected to attract wildlife and planting will occur outside of the avian nesting season.

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

Pigeons, starlings, American bullfrog, eastern grey squirrels, and eastern cottontails are the only known invasive species known to be at the sites.

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.

There will be no energy needs for the program upon completion.

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

The program does not anticipate to 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:

The program will not have any energy conservation features.

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.

There are no known environmental health hazards for this program.

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

There are no known contaminated soils that may be encountered during the program. Plans will be in place to handle contaminated soil if it is encountered during program 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 no known hazardous chemicals/conditions that might affect the program. If contaminated chemicals/conditions are encountered that might affect the program, plans will be in place to handle hazardous chemicals/conditions when and if they are encountered. During construction, pertinent local, state, and federal regulations will be followed.

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 such as chainsaw, excavators, dump trucks and power generators. Within critical areas, heavy equipment will not be allowed.

4) Describe special emergency services that might be required.

No special emergency services are expected as a result of implementing the program. 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 would be called upon for these types of incidents. The Port also maintains a trained response team available to respond at all times to any spill or loss of contaminated or hazardous materials.

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

There are no known environmental health hazards that have been identified. If encountered, local, state, and federal regulations regarding safety and handling of hazardous 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.

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 construction activities, which are expected to begin for Phase 1 in the fourth quarter 2016 and be completed in the first quarter 2017. Phase 2 and 3 will occur during the same periods between 2017 and 2019. Noise impacts are not anticipated to result from the removal of trees.

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

Short-term noise from construction activities will be mitigated by the use of Best Management Practices (BMPs) and adhering to the City of SeaTac's noise ordinance. There is no long-term noise mitigation measures proposed because the project will not change existing noise.

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.

The current use of the sites and adjacent properties are airport operations, commercial business operations, and residential living.

Phase 1 sites are within a runway protection zone and other Port of Seattle owned properties and will continue to support airport operations.

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?

Program sites are not used as working farmlands or 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 program sites.

c. Describe any structures on the site.

There are commercial buildings, residential houses, and airport navigational aids on or adjacent to project sites. It is not anticipated that there will be any impacts to existing structures. Phase 1 structures include airport office buildings and airport navigational aids within the vicinity of obstructions being removed.

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

The program does not anticipate demolishing any structures.

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

The current land use is designated with the City of SeaTac Aviation Operations (AVO), Aviation Commercial (AVC), Industrial (I), Business Park (BP), Community Business (CB), Neighborhood Business (NB), or Urban Low Density Residential. The current land use within the City of Burien is Professional/Residential, Industrial, and Airport Industrial with Auto Mall/Commercial Retail. The current land use within the City of Des Moines is Residential.

Phase 1 land use is within the City of SeaTac and is designated AVO and AVC. The land use designation will not change as a result of this program and there is no expected impact to nearby or adjacent land uses and properties.

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

The current comprehensive land use for the program is the same as the current zoning classification.

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

The project site is not in a shoreline area.

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

The program contains critical areas in all three phases.

Phase 1 contains critical areas in Site P-1 (steep slope sensitive areas), Site P-2 (Wetland 39 buffer, Wetland 44 buffer, and steep slope sensitive areas), Site P-3a (Wetland 28, Wetland 28 buffer, Wetland IWSa-b, and steep slope sensitive areas), Site P-3b (East Fork Des Moines Creek buffer, Wetland G12 buffer, Wetland 52b buffer, and steep slope sensitive areas), and Site P-5 (steep slope sensitive areas). Descriptions of these critical areas are provided in detail in Appendix B, "Critical Areas Special Study, Seattle-Tacoma International Airport, Flight Corridor Safety Obstruction Management Program."

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

There will be no new jobs created following the completion of the program.

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

There will be no displacement impacts expected as a result of this program.

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

There will be no persons displaced as a result of this program.

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

No measures are proposed because there will be no changes to existing or projected land use as a result of this program.

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

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 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 proposed structures being proposed within this program

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

The program will remove trees in industrial, commercial, and residential areas. Some of the trees being removed provide visual buffers for residential properties or are required by local landscape ordinances for industrial or commercial businesses. These tree removals are primarily in Phases 2 and 3.

Phase 1 does not anticipate altering or obstructing views. However, Site P-5, located adjacent to residential properties and S 200th Street will have a large number of trees removed.

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

The program, in all three phases, will have a minimum replanting ratio of 1:1. Greater re-planting ratios will occur in critical areas, in accordance with local, state, and federal requirements. Tree species used for re-planting will be carefully selected as to not become future obstructions.

In Phase 1, specific to Site P-5 and in addition to re-planting requirements, a vegetated buffer will be maintained along residential properties and S 200th Street. Other sites within Phase 1 are not expected to have aesthetic impacts.

11. Light and glare

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

This 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 is not expected to be a safety hazard 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 the program.

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

This program does not anticipate producing light or glare. In areas where the removal of trees provide a visual barrier for residential areas, the program will seek, when possible, to maintain vegetated buffer

areas in addition to re-planting requirements and minimize any potential impact.

Phase 1, specifically Site P-5, intends to leave a buffer between residential properties and the site and between S 200th Street and the site.

12. Recreation

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

Des Moines Creek Park is the only designated recreation area in the immediate vicinity. The park is located east and outside of Site WP-1 (Phase 2) and will not be impacted.

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

The program will not displace any existing recreational uses.

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

No impacts to recreation, including recreation opportunities, are anticipated.

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.

This program will not affect any buildings, structures, or historic sites.

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.

There is no change in current use of sites impacted. Review of the following studies identified no known historical, architectural, and/or cultural resource that were determined eligible to affect historic properties.

- Final Environmental Impact Statement for the Proposed Master Plan Update Development Actions, Seattle-Tacoma International Airport (FAA and Port of Seattle, 1996);
- Final Supplemental Environmental Impact Statement for the Proposed Master Plan Update Development Actions, Seattle-Tacoma International Airport (FAA and Port of Seattle, 1997); and
- Final Sea-Tac International Airport Comprehensive Development Plan, Sea-Tac International Airport (FAA and Port of Seattle, 2007).

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.

There is no change in current use of sites impacted.

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.

No known historic properties or cultural resources are within the project area, therefore no measures to avoid or minimize impacts is anticipated.

Phases 1, 2, and 3 do not 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.**

All phases of the program will require roadway access to sites for removing obstructions. Phase 1 construction site access includes:

Site P-1: Site access ingress and egress will occur on S 154th Street.

Site P-2: Site access ingress and egress will occur via Des Moines Memorial Drive S to S 168th and S 170th Street to the airport Perimeter and Pacific Road

Site P-3a: Site access ingress and egress will occur on S 188th Street

Site P-3b: Site access ingress and egress will occur via S 200th Street to 20th Avenue S

Site P-4: Site access ingress and egress will occur via S 200th Street to 18th and 20th Avenue South

Site P-5: Site access ingress and egress will occur on S 200th

Site p-6: Site access ingress and egress will occur via S 200th Street to 20th Avenue S

See Section 14.h for additional information.

- 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?**

Program sites are not directly served by public transportation. However, King County Metro routes 122 and 156 stop at S 200th St & Des Moines Memorial Dr S, and run along 8th Ave S.

- 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.

- 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 would result in a temporary increase in traffic volumes due to workers traveling to/from the site and trucks removing debris and transporting materials. Based on the number of trees removed and proposed vegetation quantities in Phase 1, a total of approximately 500 truck trips are expected. This assumes a capacity of approximately 70 trees per logging truck, understory and invasive species removed, and number of trees being replanted. These truck trips would be spread throughout Phase 1 – October 2016 to February 2017.

- 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:**

During construction, the primary site access routes will be on major arterials (i.e. Des Moines Memorial Drive, S 200th Street, etc.) and airport roadways with access to State Route 509 and State Route 518.

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 project will not require an increased need for public services.

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

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

16. Utilities

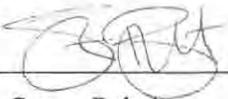
- a. Circle utilities currently available at the site:** electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other: stormwater

- 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:  _____

Name of signee: Steven Rybolt

Position /Organization Environmental Programs Manager/Port of Seattle

Date Submitted: July 14, 2016

EXHIBIT 7

APPENDIX A

Implementation Plan Seattle-Tacoma International Airport Flight Corridor Safety Program



April 2016

PORT OF SEATTLE



Implementation Plan Seattle-Tacoma International Airport Flight Corridor Safety Program

Prepared by

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IMPLEMENTATION PLAN

SEATTLE-TACOMA INTERNATIONAL AIRPORT FLIGHT CORRIDOR SAFETY PROGRAM

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April 2016

TABLE OF CONTENTS

1	INTRODUCTION	1
1.1	Components of Implementation Plan	1
1.2	Overview of Port, Public, and Private Sites.....	1
2	OBSTRUCTION INVENTORY.....	4
3	OBSTRUCTION REMOVAL AND SITE MANAGEMENT METHODS	6
3.1	Site Preparation	6
3.2	Tree Obstruction Removal and Material Disposal.....	8
3.3	Site Treatment.....	13
3.4	Monitoring.....	16
3.5	Erosion and Sediment Control Best Management Practices.....	17
4	SITE PLANS	19
4.1	Port Properties	20
4.2	Public Properties.....	50
4.3	Private Properties	58
5	SCHEDULE	69
5.1	Overall Schedule.....	69
5.2	Sequencing by Site.....	69
6	REFERENCES	70

List of Tables

Table 2.1	Obstruction Removal Summary by Location.....	5
Table 3.2-1	Summary of Obstruction Removal and Clearing Methods	9
Table 3.2-2	Summary of Material Disposal Methods	12
Table 4.1-1	Summary of Tree Removal and Replacement Quantities – All Sites.....	19
Table 4.1-2	Summary of Tree Removal and Replacement – Port Sites	20
Table 4.1-3	Port Site P-1 Obstruction Summary	22
Table 4.1-4	Port Site P-1 Best Management Practices	25
Table 4.1-5	Port Site P-2 Obstruction Summary	27

Table 4.1-6	Port Site P-2 Best Management Practices	30
Table 4.1-7	Port Site P-3a Obstruction Summary	33
Table 4.1-8	Port Site P-3b Obstruction Summary	33
Table 4.1-9	Port Site P-3 Best Management Practices	36
Table 4.1-10	Port Site P-4 Obstruction Summary	38
Table 4.1-11	Port Site P-4 Best Management Practices	40
Table 4.1-12	Port Site P-5 Obstruction Summary	42
Table 4.1-13	Port Site P-5 Best Management Practices	45
Table 4.1-14	Port Site P-6 Obstruction Summary	46
Table 4.1-15	Port Site P-6 Best Management Practices	49
Table 4.2-1	WSDOT Site WP-1 Obstruction Summary.....	51
Table 4.2-2	SeaTac Site SP-1 Obstruction Summary.....	54
Table 4.2-3	Burien Site BP-1 Obstruction Summary	56
Table 4.3-1	SeaTac Site SC-1 Obstruction Summary.....	59
Table 4.3-2	SeaTac Site SR-1 Obstruction Summary.....	62
Table 4.3-3	Burien Site BR-1 Obstruction Summary	65
Table 4.3-4	Des Moines Site DR-1 Obstruction Summary.....	67

List of Figures

Figure 1	Project Vicinity Map
Figure 2	Location of Obstructions
Figure 3	Site P-1 Access, Staging, and Site Preparation Plan
Figure 4	Site P-1 Obstruction Removal and Disposal Plan
Figure 5	Site P-1 Planting Plan
Figure 6	Site P-2 Access, Staging, and Site Preparation Plan
Figure 7	Site P-2 Obstruction Removal Plan
Figure 8	Site P-2 Planting Plan
Figure 9	Sites P-3a & P-3b Access, Staging, and Site Preparation Plan
Figure 10	Sites P-3a & P-3b Obstruction Removal Plan
Figure 11	Sites P-3a & P-3b Planting Plan
Figure 12	Site P-4 Access, Staging, and Site Preparation Plan
Figure 13	Site P-4 Obstruction Removal and Disposal Plan
Figure 14	Site P-4 Planting Plan
Figure 15	Site P-5 Access, Staging, and Site Preparation Plan

Figure 16 Site P-5 Obstruction Removal Plan
Figure 17 Site P-5 Planting Plan
Figure 18 Site P-6 Access, Staging, and Site Preparation Plan
Figure 19 Site P-6 Obstruction Removal and Disposal Plan
Figure 20 Site P-6 Planting Plan
Figure 21 Obstruction Management Phasing Plan

List of Appendices

Appendix A Approved Vegetation List

LIST OF ACRONYMS AND ABBREVIATIONS

ALSF	approach lighting system with flashing lights
AOA	Air Operation Area
BMP	best management practice
Port	Port of Seattle
Program	Flight Corridor Safety Obstruction Management Program
ROW	right-of-way
SR	State Route
STIA	Seattle-Tacoma International Airport
WSDOT	Washington State Department of Transportation

LIST OF SPECIES NAMES

Common Name	Latin Name
American linden	<i>Tilia americana</i>
Apple	<i>Malus</i> sp.
Big-leaf maple	<i>Acer macrophyllum</i>
Bitter cherry	<i>Prunus emarginata</i>
Black cottonwood	<i>Populus balsamifera</i>
Black locust	<i>Robinia pseudoacacia</i>
Common holly	<i>Ilex aquifolium</i>
Common laurel	<i>Prunus laurocerasus</i>
Deodar cedar	<i>Cedrus deodara</i>
Douglas fir	<i>Pseudotsuga menziesii</i>
English ivy	<i>Hedera helix</i>
Giant sequoia	<i>Sequoiadendron giganteum</i>
Himalayan blackberry	<i>Rubus ameriacus</i>
Japanese maple	<i>Acer palmatum</i>
Lombardy poplar	<i>Populus nigra</i>
Mountain ash	<i>Sorbus</i> sp.
Pacific madrone	<i>Arbutus menziesii</i>
Paper birch	<i>Betula papyrifera</i>
Pine	<i>Pinus</i> sp.
Red alder	<i>Alnus rubra</i>
Western red-cedar	<i>Thuja plicata</i>
Scotch broom	<i>Cytisus scoparius</i>
Scots pine	<i>Pinus sylvestris</i>

1 INTRODUCTION

As a condition of the Federal Aviation Administration-issued Airport Operating Certificate, the Port of Seattle (Port) is required to ensure there are no obstacles or obstructions on or around the Seattle-Tacoma International Airport (STIA) that could affect aviation safety. In 2014, the Port conducted a comprehensive obstruction analysis that used Light Detection and Ranging (LiDAR) remote sensing and imaging technology to identify obstructions that extend into, or very near (within a 6-foot threshold of), navigable airspace. In 2015, the obstruction quantities identified through this analysis were refined through a ground-truthing field exercise. The field reconnaissance also characterized the obstructions by species type and size (stem diameter and estimated height). On Port sites, the reconnaissance also identified future obstructions, and where applicable, quantified the understory trees that would be removed or impacted during removal activities. Overall the process has identified 2,747 trees (1,799 obstructions and 948 non-obstruction understory features) for removal. The purpose of this report is to provide a detailed methodology and timeline for management of obstructions on Port, public, and private properties surrounding STIA.

1.1 Components of Implementation Plan

This report includes an introduction to the sites that have been identified; a characterization of obstructions and potential obstructions; a discussion of obstruction management methods; site plans that describe how these methods should be applied to these various Port, public, and private sites; cost estimates that can be used for budget planning; and a detailed schedule for implementing the Flight Corridor Safety Program (Program).

1.2 Overview of Port, Public, and Private Sites

Obstructions occur on Port, state, city, and private commercial and residential parcels. The following section introduces the grouping of these parcels into 14 discrete sites. See Figure 1 for a project vicinity map.

1.2.1 Port Sites

Obstructions on Port property (shown in Figure 2) have been grouped into the following seven sites based on geographic location, site conditions, and access considerations:

- Site P-1 is the only site located north of STIA. This site includes obstructions within a steep slope sensitive area.
- Site P-2 is located west of STIA near the Port's west side office. The majority of the obstructions within this site are outside of sensitive areas, though several obstructions are within wetland buffers or on steep slopes.
- Site P-3 (P-3a and P-3b) is located south of STIA and north or northeast of Des Moines Creek. Many obstructions in these sites are within wetlands, wetland buffers, stream buffers, or on steep slopes.
- Site P-4 is located south of STIA and south or southwest of Des Moines Creek. Obstructions on this site are all outside of sensitive areas. The obstructions at the south end of this site are within a parcel that includes trails used by the public.
- Site P-5 is located south of STIA, and is a forested parcel that includes walking and biking trails used by the public. Some obstructions on this site are within steep slope sensitive areas.
- Site P-6 is located south of STIA and north of Des Moines Creek, within the Tyee mitigation site. The majority of obstructions within this area are within wetlands or wetland buffers.

1.2.2 Public Sites

Obstructions on public property (shown in Figure 2) have been grouped into the following three sites based on property ownership (school district property is presented by the city jurisdictions they fall within):

- Site WP-1 is located within the city of SeaTac, and includes both active right-of-way (ROW) and unconstructed ROW owned by the Washington State Department of Transportation (WSDOT). The site includes areas to the west and southwest of STIA. The obstructions on this site are all outside of sensitive areas.
- Site SP-1 includes publically owned utility, ROW, natural resource, and school district sites in the city of SeaTac. This site includes two locations, one of which is

located north of STIA, the other located southwest of STIA. The southwest area includes wetland and wetland buffer sensitive areas.

- Site BP-1 includes publically owned ROW within the city of Burien. This site is located northwest of STIA. These obstructions are all outside of sensitive areas.

1.2.3 Private Sites

Obstruction sites on private property (shown in Figure 2) have been grouped into the following four sites, based on local jurisdiction and type of land use (Commercial/Institutional versus Residential):

- Site SC-1 is located in the city of SeaTac and includes commercial lots owned by Boeing (one parcel), commercial lots owned by car rental companies (three parcels), and one church institutional site (one parcel). This site includes two locations, one of which is located northeast of STIA, the other located southwest of STIA. The southwest area includes wetland and wetland buffer sensitive areas.
- Site SR-1 includes 32 private residential properties within the city of SeaTac, located to the northeast and southwest of STIA. These obstructions are all outside of sensitive areas.
- Site BR-1 includes 17 private residential properties within the city of Burien, located to the northwest and southwest of STIA. These obstructions are all outside of sensitive areas.
- Site DR-1 includes 25 private residential properties within the city of Des Moines, located to the southwest of STIA. A portion of this site is located within wetland and wetland buffer sensitive areas.

2 OBSTRUCTION INVENTORY

Table 2.1 provides a summary of existing and potential obstructions for different types of property ownership within three local jurisdictions. The presence of sensitive areas (wetlands, wetland buffers, stream buffers, and steep slopes) in proximity to obstructions is also identified. Figure 2 illustrates the location of these obstructions within the three local jurisdictions.

Table 2.1
Obstruction Removal Summary by Location

Jurisdiction Property Ownership	Obstruction Removal						Understory Tree Removal	Total Trees Removed
	Existing Obstructions ¹	Potential Obstructions ²	Total Obstructions	Obstructions Within Sensitive Areas				
				Existing	Potential	Total ³		
City of SeaTac								
Port	362	478	840	149	238	387	327	1,167
WSDOT	484	119	603	0	0	0	621 ⁴	1,224
Public	87	41	128	4	11	15	0	128
Residential	46	22	68	0	0	0	0	68
Commercial/Religious	22	22	44	2	5	7	0	44
Subtotal	1,001	682	1,683			09	948	2,631
City of Burien								
Public	6	0	6	0	0	0	0	6
Residential	58	14	72	0	0	0	0	72
Commercial	0	0	0	0	0	0	0	0
Subtotal	64	14	78			0	0	78
City of Des Moines								
Public	0	0	0	0	0	0	0	0
Residential	16	22	38	1	1	2	0	38
Commercial	0	0	0	0	0	0	0	0
Subtotal	16	22	38			2	0	38
Total	1,081	718	1,799			411	948	2,747

Notes:

- Existing obstructions are trees that are currently within the navigable airspace for STIA.
- Potential obstructions are trees that are predicted to enter the navigable airspace within 5 years.
- Totals are adjusted to reflect the actual number of tree obstructions within sensitive areas, and remove double counting (e.g., individual trees that are within both steep slope and wetland buffer areas).
- Estimated understory quantity is preliminary and subject to change (derived from aerial photograph analysis).

3 OBSTRUCTION REMOVAL AND SITE MANAGEMENT METHODS

The methods for obstruction removal and site management are discussed here for the following key implementation steps:

1. Site preparation
2. Obstruction removal and material disposal
3. Site treatment
4. Monitoring

In addition, the best management practices (BMPs) that will be applied during implementation are presented. The detailed implementation plans for individual sites (provided in Section 4) will draw upon the methods and BMPs presented here.

3.1 Site Preparation

Site preparation activities prior to obstruction removal include verifying/inspecting site conditions; identifying and installing access barriers, access routes, and staging areas; identifying and installing erosion and sediment control measures; salvaging vegetation; and marking obstructions and other features to be removed.

3.1.1 Site Visit

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

- **Hazardous features of the site:** Permanent features should be marked/flagged to protect site personnel, biological hazards (e.g., unsanitary conditions, discarded syringes) should be identified and removed.
- **Site access issues:** Traffic control measures may be required for sites along busy or congested public ROWs.
- **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 sites that will require excavation for obstruction removal will also require a utility location/verification through the Utility Notification Center.
- **Existing facilities in need of protection:** These features could include STIA features such as the Air Operation Area (AOA) perimeter fence, the Port's west side office, or supports

for runway approach lighting systems with flashing lights (ALSF). Existing facilities on private sites include structures, grounds, and landscaping outside of the obstruction removal area. Additional steel plates or mats and barricades will likely be required to safely remove obstructions on private sites without impacting existing structures.

- **Sensitive areas in need of protection:** These features could include steep slopes, wetlands, streams, and their buffers. In addition, topographic swales/ditches that could direct additional stormwater or sediment-laden runoff to these sensitive areas, and areas of potential erosion, should also be identified.

3.1.2 Site Access and Safety

Access barriers are necessary to control the site from trespass or unintentional entrance by unauthorized personnel. While most Port sites have adequate access control from existing fencing, the more congested Site P-2, near the Port's west side office, will need to be barricaded. Additionally Port sites that currently host informal public access will require access control measures. Temporary chain-link fencing, with 20-foot-wide 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 competent flagmen to ensure the public is protected from hazards associated with tree removal.

Access and exit points should be limited to one route, if possible. This truck or equipment driveway 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.

3.1.3 Clearing Limits and Tree Marking

Prior to obstruction removal, clearing limits will be marked with fencing. The trees that will be removed should be confirmed and marked in multiple places on the trunk. This process is an important extra security step to make sure that only the intended trees are removed.

3.1.4 Erosion and Sediment Controls Installation

Prior to obstruction removal, erosion and sediment controls will need to be planned and installed. Planning items will include development of a spill prevention, control, and countermeasures plan, and consideration of overall site layout during construction. Fuel storage should be segregated from other materials and located at least 20 feet from streams and wetlands. The fuel storage area must be graded to ensure containment of any leaks or spills.

3.1.5 Plant Salvage – Optional Action

Through community service events, or partnering with native plant organizations, the Port may salvage native shrub and groundcover plant materials within the obstruction removal clearing limits 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).

3.2 Tree Obstruction Removal and Material Disposal

3.2.1 Tree Removal and Clearing Methods

Obstruction removal methods and equipment vary depending on site characteristics, the distribution and characteristics of obstructions 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 3.2-1, followed by a more detailed discussion.

**Table 3.2-1
Summary of Obstruction Removal and Clearing Methods**

Method Description	Suitability
Clearing and Grubbing	
Clearing involves removal of trees and vegetation, including invasive species, as well as other understory and groundcover vegetation above the soil surface. Fell and limb trees using mechanical equipment such as a feller buncher; harvester equipment may also buck the logs into smaller pieces. Remove invasive species as well as other understory and groundcover vegetation. Grubbing a cleared area entails removing organic matter in the soil, often to a minimum of 12 inches in depth, provides an opportunity for stripping topsoil to be used in future restoration planting efforts. Salvaged topsoil can be segregated and stockpiled separately from other cleared material; it can be spread over disturbed areas upon completion of obstruction removal activities.	Suitable for areas with dense obstruction groupings where adjacent areas are not congested or major traffic corridors
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 obstruction 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 sensitive areas, and/or where isolated obstructions 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 obstructions occur, and retaining stumps is used to protect sensitive 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 stump puller 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 sites outside of sensitive 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 site that is congested and/or contains many existing facilities or grounds to be preserved, or is inaccessible to large equipment, will require manual methods of removal. Selective removal within the Port Site Plans denotes manual removal methods for felling trees; all other removal methods will involve mechanical felling operations.

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 sensitive areas. Where feasible, mechanical felling is the best option for preparing timber for sale, which is an obstruction “disposal” option for many of the Port and WSDOT sites for this Program.

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 2016)
- Delimber, which is used to remove branches from felled trees
- Harvester, which consolidates felling, delimiting, 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 through the use of 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 used 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 obstruction 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 in order to stabilize soils and minimize impacts to these sensitive 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 obstruction 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.

3.2.2 Material Disposal Options

Options for disposal of cleared obstructions, potential obstructions, and associated vegetation (e.g., invasive species, vegetation impacted during removal) are summarized in Table 3.2-2, followed by a more detailed discussion.

**Table 3.2-2
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.	Suitable for most sites (with owner's permission), outside of wetlands
Off-site Disposal	
Remove material from site and dispose at an approved location, or to a beneficial reuse site identified by the Port.	Suitable for wetland areas where on-site disposal is not feasible, or other sites at owner's discretion
Timber Sale	
Establish board foot volumes, market, and prepare trees for sale.	Large, forested tracts with merchantable timber

3.2.3 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/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 obstruction removal step through the use of a mechanical mulcher. 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.

3.2.4 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 obstruction material for beneficial uses in other Port locations as restoration (e.g., large woody debris) or site furnishings (e.g., log edging, seating, 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.

3.2.5 Marketing and Selling Timber

The Port and WSDOT may consider a timber sale as another option for material disposal. This option could provide significant revenue, but it also requires additional planning steps. Generally the timber selling process would include the following:

- Researching the timber market condition and trends as they relate to desired species, minimum quantities, sizes, and material quality
- Refining a tree inventory in order to project the available timber volumes
- Developing a marketing strategy, guided by the following questions:
 - What are the products and when will they be available?
 - How will products be sold (stumpage [i.e., standing timber] or as logs)?
 - What is the current market value for these products?
 - Who are the potential buyers?
- Clearly laying out property lines of sale area and marking timber
- Promoting the products through actively contacting potential buyers and providing a prospectus
- Evaluating offers and drawing up a timber sale contract, and a logging contract for log products
- Actively monitoring the operation

3.3 Site Treatment

Site treatment following obstruction removal will involve stabilizing soils using vegetation and, in certain instances, geotechnical methods. Closeout of the work will include removing temporary facilities and erosion/sediment control measures, and cleaning up the site.

3.3.1 Planting Bed 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 was removed through obstruction removal operations. Soil amendment can be placed in planting areas and rototilled into the existing subgrade.

The installation of jute matting is recommended for sites with slopes greater than 4:1 (4 horizontal to 1 vertical) to control slopes during plant establishment. This material consists of unbleached, single jute yarn, which is woven into a mat. Jute matting is installed by rolling out the fabric and, where multiple strips of mat are required, overlapping adjacent mats by a minimum of 4 inches. The upslope end of the mat is secured by burying and staking the ends in a trench and then backfilling the trench. The matting is further secured with wooden stakes spaced every 2.5 feet along the length of the material.

3.3.2 Plant Installation

Plant installation should be performed within the wet season if possible (between October and May) unless an irrigation system is available. The specific plant species recommended for each of the Port sites are identified on the plant schedules provided in Figures 5, 8, 11, 14, 17, and 20. For non-Port sites, Appendix A provides a list of replacement tree species with mature tree heights that are well below obstruction levels.

Plant materials for Port properties can be supplemented with salvaged material removed during site preparation activities. Purchased plant materials can include both container-grown stock and livestock 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/abrasions, and all forms of infestation

Trees that are installed in public spaces and ROWs are generally higher grade material, and must meet location jurisdiction requirements (Burien Code Chapter 19.25, Interlocal Agreement Landscape Design Standards, SeaTac Development Standards Chapter 15.445). Within applicable sites in the cities of SeaTac and Burien, these requirements include the following:

- Deciduous trees shall have a caliper of at least 1.75 inches (Burien) or 2 inches (SeaTac)

- Evergreen trees shall be at least 6 feet (Burien) or 8 feet in height (SeaTac)

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.

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

3.4 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 STIA, 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.

Long-term monitoring will be required to document potential future obstructions and provide regular maintenance of areas with low-height obstructions. Monitoring will occur for two years on all sites to ensure revegetation mitigation measures meet performance standards below. If monitoring reveals that the revegetation mitigation measures are not meeting the performance standards, corrective action will occur in accordance with SeaTac Municipal Code 15.700.120 as follows:

- **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 obstruction removal area.

Including a 1-year plant warranty requirement within the contract specifications is recommended. 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, lighting or wind storms, extreme winter weather conditions, vandalism, or negligence on the part of the Owner.

3.5 Erosion and Sediment Control Best Management Practices

A construction stormwater pollution prevention plan and erosion and sediment control measures will be required to control the quantity and quality of stormwater that may pass through the obstruction management sites. The regulatory memorandum provides detail on the construction stormwater general permit associated with this work. This section outlines the most appropriate BMPs that can be used during obstruction management implementation. More detail on the BMPs identified here is available through the *Stormwater Management Manual for Western Washington* (Ecology 2012).

3.5.1 Preserve Vegetation/Mark Clearing Limits

Natural vegetation and the duff layer/native topsoil outside of the obstruction removal zones should be protected as these materials not only provides long-term ecological function, but also control stormwater erosion. Clearly marking the limits of clearing will ensure this material is not mistakenly removed during construction activities. Appropriate BMPs for this element include the following:

- BMP C101: Preserving Natural Vegetation
- BMP C102: Buffer Zones
- BMP C103: High Visibility Fence

3.5.2 Establish Construction Access

Constructing a clear construction access and exit location provides safety benefits (e.g., clear understanding of vehicle traffic), and also provides an opportunity to control sediment from being tracked outside of the construction site. Appropriate BMPs for this element include the following:

- BMP C105: Stabilized Construction Entrance/Exit
- BMP C107: Construction Road/Parking Area Stabilization

3.5.3 Install Sediment Controls

Earth moving on a construction site increases the risk of sediment being washed “downstream” and, in turn, impacting adjacent sites and/or sensitive areas such as wetlands or streams. Sediment control measures trap sediment on site where it can be managed. Appropriate BMPs for this element include the following:

- BMP C233: Silt Fence
- BMP C234: Vegetated Strip
- BMP C235: Wattles

3.5.4 Stabilize Soils and Protect Slopes

Soil that has been worked can be protected from erosion and sedimentation by soil stabilization measures. Soils must not remain exposed and unworked for more than 7 days during the dry season (May 1 to September 30), or for more than 2 days during the wet season (October 1 to April 30). Appropriate BMPs for this element include the following:

- BMP C120: Temporary and Permanent Seeding
- BMP C121: Mulching
- BMP C122: Nets and Blankets
- BMP C123: Plastic Covering

3.5.5 Maintain Best Management Practices and Manage the Project

Managing the project will include accounting for the dry and wet seasons as they relate to the construction schedule. During construction, a designated Certified Erosion and Sediment Control Lead person will lead the inspection and monitoring of BMPs, and will work with the contractor to improve BMP performance over the life of the project. Appropriate BMPs for this element include the following:

- BMP C160: Certified Erosion and Sediment Control Lead
- BMP C162: Scheduling

4 SITE PLANS

This section provides detailed obstruction removal and revegetation methods for the Program. A summary of the quantities of tree removal and replacement for the different property types is shown in Table 4.1-1. The required tree planting quantities are based on revegetation ratios, which vary based on jurisdiction requirements.

**Table 4.1-1
Summary of Tree Removal and Replacement Quantities – All Sites**

Jurisdiction Ownership	Total Obstructions	Understory Removal	Total Trees Removed	Required Tree Replacement
City of SeaTac				
Port	840	327	1,167	1,489 ²
WSDOT	603	621 ³	1,224	1,224 ⁴
Public	128	0	128	143
Residential	68	0	68	68
Commercial/Religious	44	0	44	51
Subtotal	1,683	948	2,631	2,975
City of Burien				
Public	6	0	6	18
Residential	72	0	72	72
Commercial	0	0	0	0
Subtotal	78	0	78	90
City of Des Moines				
Public	0	0	0	0
Residential	38	0	38	40
Commercial	0	0	0	0
Subtotal	38	0	38	40
Total	1,799	948	2,747	3,105

Notes:

1. Required tree replacement quantities based on mitigation ratios established by the Port and local agencies. Actual tree replacement quantities may exceed the required ratios.
2. See Table 4.1-2 in Section 4.1 for more information on tree replanting for Port properties.
3. Estimated understory quantity is preliminary and subject to change (derived from aerial photograph analysis). To be confirmed with WSDOT, the replacement requirement may be as large as 4:1 ratio.

4.1 Port Properties

The Port properties include seven sites requiring removal of existing obstructions and future obstructions. These sites are to the north, west, and south of STIA. Access to five of the sites is actively controlled by the Port—either because they are located in close proximity to active Port operations (west side office) or they occur within Port property that is restricted from public use and fenced. Two of the sites contain areas accessible by the public for recreational use. A summary of tree removal and replacement for Port sites is presented in Table 4.1-2.

Table 4.1-2
Summary of Tree Removal and Replacement – Port Sites

Port Site	Total Obstructions	Understory Removal	Total Trees Removed	Required Tree Replacement	Trees Replaced Within Site	Trees Replaced Outside of Site
P-1	56	0	56	56	41	15
P-2	239	0	239	290	16	274
P-3a	247	0	247	551	310	241
P-3b	51	0	51			
P-4	95	0	95	95	198	-103
P-5	134	327	461	461	92	369
P-6	18	0	18	36	48	-12
Total	840	327	1,167	1,489	705	784

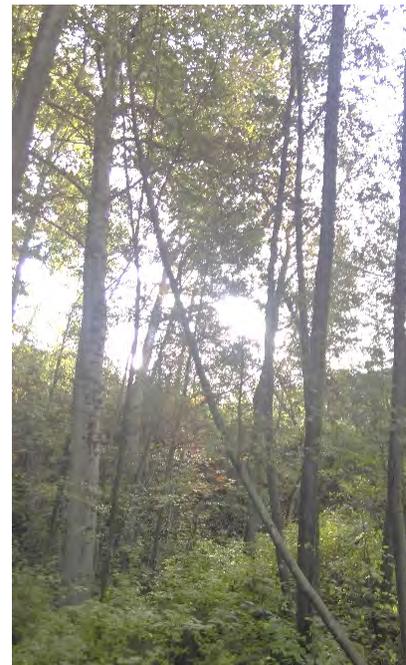
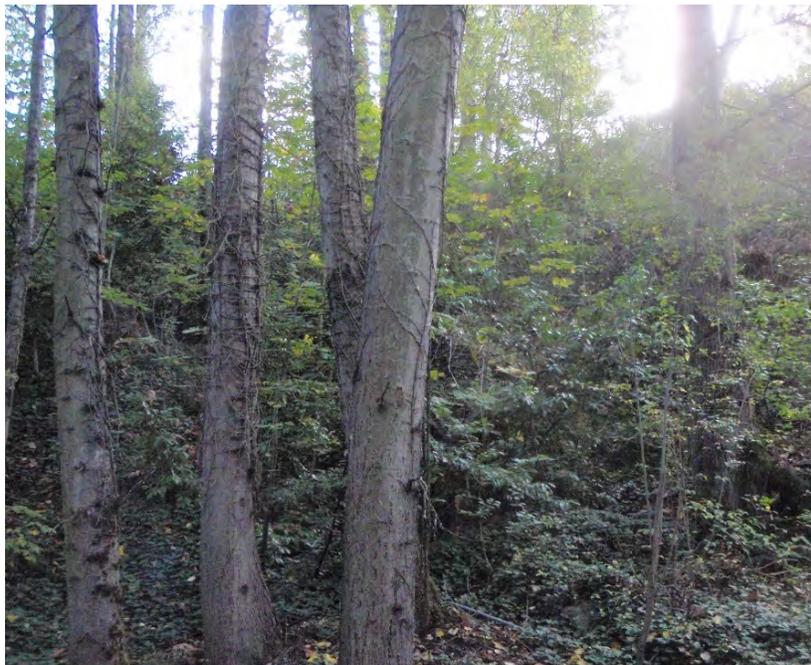
4.1.1 Site P-1

4.1.1.1 Site Description

This 2.5-acre site is the only Port site located north of STIA, and includes a wetland, wetland buffer, and steep slopes. In addition to 5 tree obstructions and 51 potential tree obstructions, the site contains invasive species (including English ivy, common holly, and Himalayan blackberry). The site contains artificial fill, predominately within the sloped areas, which includes plastic barrels, riprap, concrete rubble, and potentially sharp, steel construction waste.



Site P-1 Overview Diagram



Site P-1 Representative Site Photographs

**Table 4.1-3
Port Site P-1 Obstruction Summary**

Species	Quantity	Diameter at Breast Height	Estimated Height
Existing Obstructions (5 total)			
Black cottonwood	5	28 – 37"	125 – 140'
Potential Obstructions (51 total)			
Black cottonwood	26	6 – 55"	20 – 140'
Red alder	Cluster 1: 10 trees Cluster 2: 15 trees	Cluster 1: 8" Cluster 2: 9"	Both clusters: 25'

4.1.1.2 Site Implementation Plan

Access and Construction Staging (Figure 3)

Site P-1 can be accessed from the north via Highway 518 East, which will require a temporary access agreement through WSDOT ROW.

An area suitable for construction staging to support work at Site P-1 is located adjacent to the eastern portion of the site. This area is located near a stormwater retention basin, which must be protected. The staging area and access route from Highway 518 would need to be restored to pre-project conditions following obstruction removal work.

Site Condition Review

1. Site P-1 hazards include steep slopes, with a number of obstructions located on slopes up to 35 degrees. In addition, artificial fill with potentially sharp materials and thorny invasive plants constrain access.
2. Sensitive areas that will be encountered on the site consist of steep slopes. Sensitive areas adjacent to the site to the west include a wetland and wetland buffer. While roads are present to the west of the site (within the wetland buffers), no access from these roads will be permitted in order to protect the wetland and wetland buffers.
3. Stormwater outfalls discharge water at the south and northeast corners of Wetland 3. No work or staging is permitted on this side of the site.
4. ALSF structures are present to the west of the site. No work or staging is permitted on this side of the site.
5. Other STIA-related infrastructure to be protected includes one stormwater retention basin.

Site Preparation (See Figure 3)

1. **Secondary access improvements:** Access to the site will require cutting through brush and placing a base material for access from Highway 518.
2. **Sensitive area protection:** Install sediment controls downstream of the work area and outside of the wetland boundary.
3. **Infrastructure protection:** Protect the culvert that transports water from the east to west wetland complex by ensuring sediment control measures are in place prior to commencing obstruction removal site work. Biodegradable silt fencing is recommended as it can be left in place, further minimizing wetland impacts following projection completion.
4. **Geotechnical investigation:** Further geotechnical evaluation for stability may be needed prior to obstruction removal on steep slopes. This investigation may prescribe slope stability mechanisms that are more conservative (e.g., armoring) than the geotechnical fabric application presented below.

Obstruction Removal and Material Disposal (See Figure 4)

1. Remove and retain stumps of all black cottonwoods (5 obstructions, 26 potential obstructions).
2. Clear two clusters of 25 total red alder potential obstructions; these clusters are on steep slopes. Retain all stumps.
3. Clear invasive species (English ivy, common holly, and Himalayan blackberry) within clearing limits shown in Figure 3.
4. Dispose of material by chipping and mulching, and placing processed material on site (outside of the wetland). Removed black cottonwood trees may provide merchantable timber for fiber; however, removing the material unprocessed from this site using a cable-logging operation, would increase cost, and the necessary cranes and cables would penetrate the navigable airspace.

Site Treatment (See Figure 5)

The objective of site treatment measures is to control establishment of future obstructions, stabilize slopes and soil disturbed by obstruction removal, and replace trees on site to the extent possible.

1. Drill and treat stumps that remain with broad-spectrum glyphosate or fungus (mycilia) tablets in order to discourage sprouting.
2. Install geotechnical fabric (jute) in all cleared areas with slopes greater than 4:1 prior to revegetation efforts.
3. Revegetate cleared areas per the planting plan and planting schedule (Figure 5). The planting categories allow for the following maximum heights for installed vegetation, though species selected for each category were selected to grow far below the following thresholds:
 - a. **Short height upland planting:** 100 to 140 feet
 - b. **Shrub upland planting:** 80 to 100 feet
 - c. **Groundcover planting:** 40 to 80 feet
4. The required tree replacement quantity associated with obstruction removal from Site P-1 is 56 trees, with 41 trees planted within the site, and 15 trees planted on other Port sites or another location within the drainage basin..
5. The estimated planting quantities on Site P-1 will include the following:
 - a. **Trees planted on site:** 41
 - b. **Shrubs:** 1,600
 - c. **Groundcovers:** 2,000
 - d. **Seeded areas:** 37,500 square feet

Monitoring

1. Monitor stumps and treat with broad-spectrum glyphosate or fungus (mycilia) tablets to control resprouting. While black cottonwood sprouts from remaining stumps are unlikely to exceed 100 feet in height, these sprouts may still become future obstructions within the higher topography areas of the site.
2. Monitor for future obstructions.
3. Monitor to ensure revegetation areas meet the following performance standards:
 - a. **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.
 - b. **Performance Standard 2:** Invasive plant species are maintained at levels below 20% cover averaged over the entire obstruction removal area.

4.1.1.3 Best Management Practices

The following BMPs are suitable measures for controlling sediment and erosion on Site P-1.

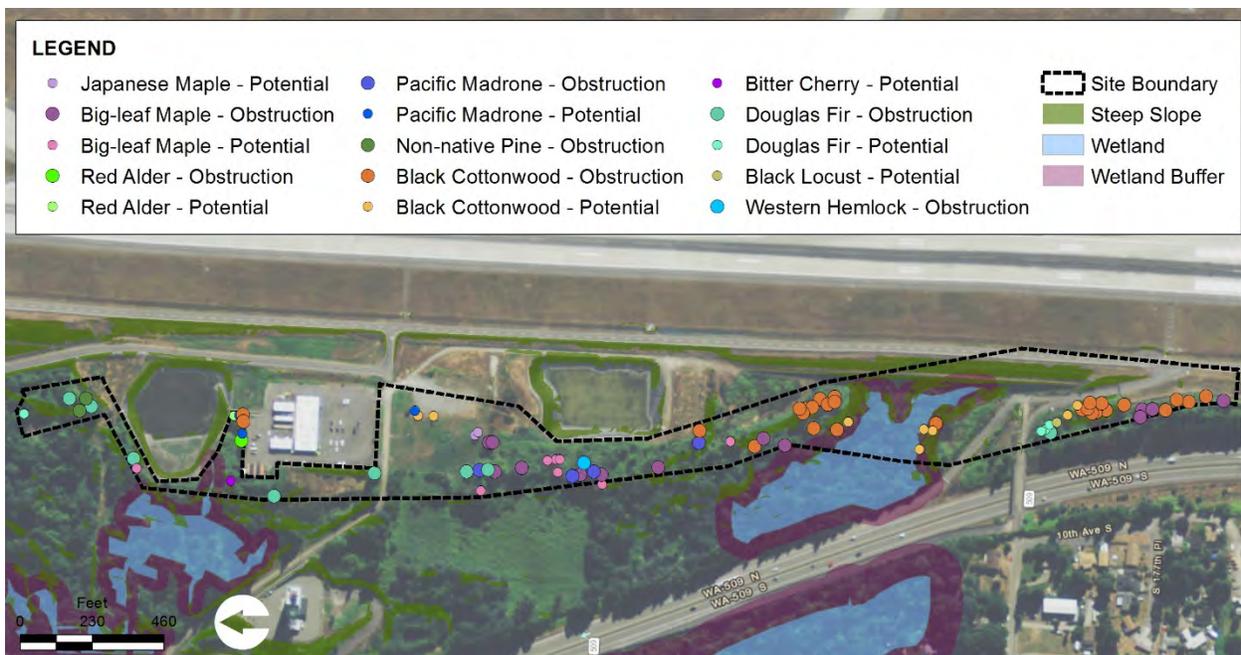
**Table 4.1-4
Port Site P-1 Best Management Practices**

BMP Category	BMP Numbers and Titles
Preserve Vegetation/Mark Clearing Limits	<ul style="list-style-type: none"> • BMP C101: Preserving Natural Vegetation • BMP C102: Buffer Zones • BMP C103: High Visibility Plastic, Metal, or Biodegradable Fence • BMP C103: Silt Fence
Establish Construction Access	<ul style="list-style-type: none"> • BMP C105: Stabilized Construction Entrance/Exit • BMP C107: Construction Road/Parking Area Stabilization
Install Sediment Controls	<ul style="list-style-type: none"> • BMP C235: Wattles • BMP C233: Silt Fence
Stabilize Soil and Protect Slopes	<ul style="list-style-type: none"> • BMP C120: Temporary and Permanent Seeding • BMP C121: Mulching
Maintain BMPs and Manage the Project	<ul style="list-style-type: none"> • BMP C160: Certified Erosion and Sediment Control Lead • BMP C162: Scheduling

4.1.2 Site P-2

4.1.2.1 Site Description

This 16.5-acre site is located west of STIA near the Port’s west side office. This area is adjacent to two wetlands, and contains wetland buffers, and steep slopes. In addition to 82 tree obstructions and 157 potential tree obstructions, the site contains invasive species including dense Himalayan blackberry and Scotch broom. As the site includes an active Port office, and the south portion of the site is accessed off State Route (SR) 509, portions of the site should be considered congested.



Site P-2 Overview Diagram



Site P-2 Representative Site Photographs

**Table 4.1-5
Port Site P-2 Obstruction Summary**

Species	Quantity	Diameter at Breast Height	Estimated Height
Existing Obstructions (82 Total)			
Big-leaf maple	14	11 – 40"	55 – 85'
Pacific madrone	12	4 – 35"	25 – 75'
Black cottonwood	37	4 – 25"	40 – 90'
Scots pine	3	11 – 20"	50 – 75'
Bitter cherry	1	18 – 30"	45'
Douglas fir	14	11 – 30"	40 – 85'
Western hemlock	1	26 – 30"	85'
Potential Obstructions (157 Total)			
Big-leaf maple	51	4 – 30"	35 – 80'
Japanese maple	2	4-10"	20'
Red alder	31	4 – 20"	35 – 65'
Pacific madrone	1	4 – 10"	35'
Paper birch	1	21 – 25"	70'
Silver poplar	1	16 – 20"	90'
Black cottonwood	57	4 – 10"	30 – 60'
Bitter cherry	6	4 – 10"	45'
Douglas fir	2	11 – 15"	60'
Black locust	2	11 – 15"	45'
Mountain ash species	3	4 – 10"	35'

4.1.2.2 *Site Implementation Plan*

Access and Construction Staging (Figure 6)

The north portion of Site P-2 can be accessed via the lots and roads near the west side office via S 168th Street. The south portion of Site P-2 can be entered through the southbound ramp from SR 509.

An area suitable for construction staging to support work at Site P-2 is located within the Port's west side office parking area. Smaller staging and stockpile areas, may also be established within Scotch broom-infested portions of the site, though nearby retention ponds

must be protected. All staging areas would need to be restored to pre-project conditions following obstruction removal work.

Site Condition Review

1. Site P-2 hazards include steep slopes, with obstructions at the top of a 22-degree slope, and a number of obstructions located on engineered steep slopes—all of which are reasonably accessible. The site also has narrow access routes near stormwater retention basins, dense Himalayan blackberry brambles (potentially adding to the hazards within steep slopes), traffic hazards from entering the south portion of the site from SR 509, and congestion hazards while working near the office parking areas.
2. Sensitive areas that will be encountered and impacted through obstruction removal activities include wetland buffers, and steep slopes.
3. Overhead lighting and utility lines associated with the west side office must be protected.
4. The STIA fence line protecting the AOA must be protected.
5. Other STIA-related infrastructure to be protected includes two stormwater retention basins.

Site Preparation (See Figure 6)

1. **Sensitive area protection:** Install sediment controls downstream of work area and outside of wetland boundary.
2. **Public safety protection:** Fence off work and staging areas that abut publically accessible roads and parking areas.
3. **Geotechnical investigation:** Further geotechnical evaluation for stability may be needed prior to obstruction removal on steep slopes. This investigation may prescribe slope stability mechanisms that are more conservative (e.g., armoring) than the geotechnical fabric application presented below.

Obstruction Removal and Material Disposal (See Figure 7)

1. Clear all obstructions and potential obstructions (82 obstructions, 157 potential obstructions).

- a. Within steep slope and wetland buffer areas, remove trees and retain tree stumps (65 tree stumps). Accessibility of mechanical clearing equipment appears feasible within steep slopes, but should be verified in the field.
- b. Outside of steep slope and wetland buffer areas, remove trees and grind stumps (174 trees).
2. Clear invasive species (Scotch broom and Himalayan blackberry) within clearing limits shown in Figure 6.
3. Dispose of material off site, or chip and mulch material and place processed material on site (outside of the wetland).

Site Treatment (See Figure 8)

1. Drill and treat stumps that remain with broad-spectrum glyphosate or fungus (mycelia) tablets in order to discourage sprouting.
2. Install geotechnical fabric (jute) in all cleared areas with slopes greater than 4:1 prior to revegetation efforts.
3. Revegetate cleared areas per the planting plan and planting schedule (Figure 8). The planting categories allow for the following maximum heights for installed vegetation, though species selected for each category were selected to grow far below the following thresholds:
 - a. **Short to moderate height upland and buffer planting:** 100 to 140 feet
 - b. **Shrub upland and buffer planting:** 80 to 100 feet
 - c. **Groundcover upland planting:** 40 to 80 feet
4. The required tree replacement quantity associated with obstruction removal from Site P-2 is 290 trees, with 16 trees planted within the site, and 274 trees planted on other Port sites or another location within the drainage basin.
5. The estimated planting quantities on Site P-2 will include the following:
 - a. **Trees planted on site:** 16
 - b. **Shrubs:** 1,700
 - c. **Groundcovers:** 20,000
 - d. **Seeded areas:** 243,300 square feet

Monitoring

1. Monitor stumps and treat with broad-spectrum glyphosate or fungus (mycilia) tablets to control resprouting.
2. Monitor for future obstructions.
3. Monitor to ensure revegetation areas meet the following performance standards:
 - a. **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.
 - b. **Performance Standard 2:** Invasive plant species are maintained at levels below 20% cover averaged over the entire obstruction removal area.

4.1.2.3 Best Management Practices

The following BMPs are suitable measures for controlling sediment and erosion on Site P-2.

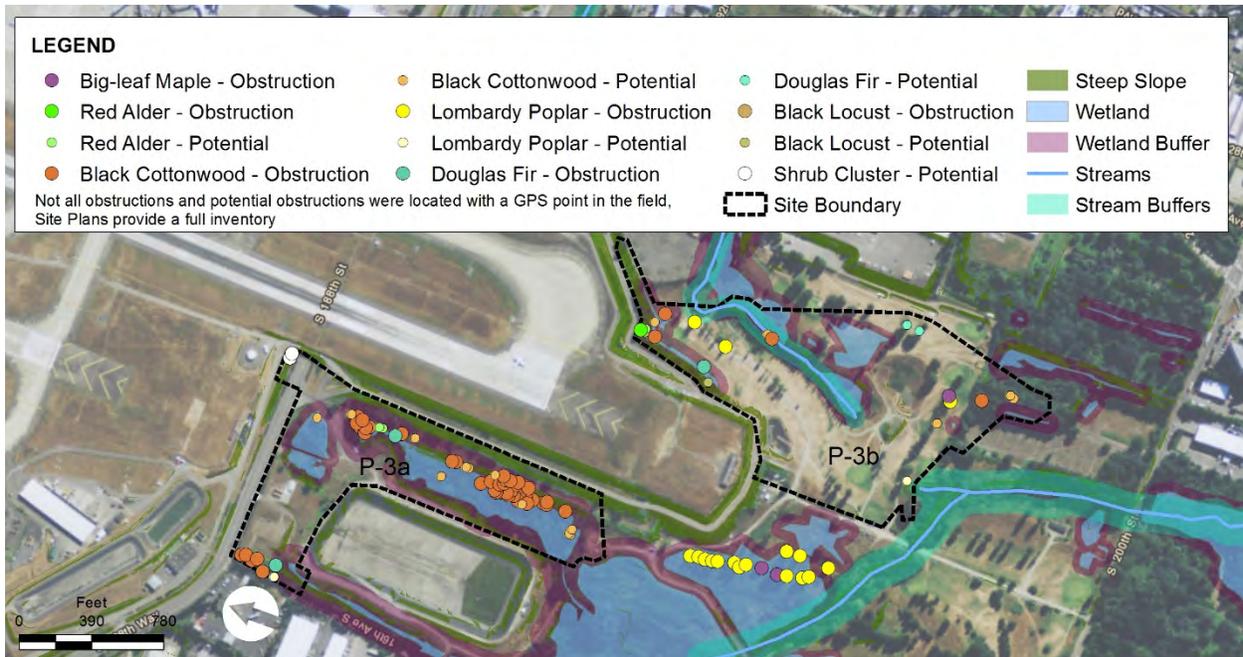
**Table 4.1-6
Port Site P-2 Best Management Practices**

BMP Category	BMP Numbers and Titles
Preserve Vegetation/Mark Clearing Limits	<ul style="list-style-type: none"> • BMP C101: Preserving Natural Vegetation • BMP C102: Buffer Zones • BMP C103: High Visibility Plastic, Metal, or Biodegradable Fence • BMP C103: Silt Fence
Establish Construction Access	<ul style="list-style-type: none"> • BMP C105: Stabilized Construction Entrance/Exit • BMP C107: Construction Road/Parking Area Stabilization
Install Sediment Controls	<ul style="list-style-type: none"> • BMP C235: Wattles • BMP C233: Silt Fence
Stabilize Soil and Protect Slopes	<ul style="list-style-type: none"> • BMP C120: Temporary and Permanent Seeding • BMP C121: Mulching
Maintain BMPs and Manage the Project	<ul style="list-style-type: none"> • BMP C160: Certified Erosion and Sediment Control Lead • BMP C162: Scheduling

4.1.3 Site P-3 (P-3a and P-3b)

4.1.3.1 Site Description

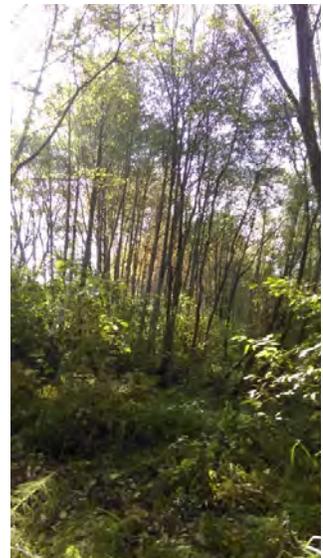
This site, located south of STIA and east of the Tyee mitigation site, includes Site P-3a (24 acres) to the north and Site P-3b (35 acres) to the south. Both sites include wetlands, wetland buffers, and steep slopes, though the wetland complexes within Site P-3a are much more contiguous than in Site P-3b. Site P-3b also contains a stream and stream buffer. Site P-3a contains 89 existing and 158 potential obstructions; Site P-3b contains 26 existing and 25 potential obstructions. Site P-3b also contains a fair amount of ornamental landscape areas that were once part of the Tyee Valley Golf Course. Site P-3a contains STIA’s Industrial Waste Treatment Plant’s Lagoon, which in part comprises the Des Moines Creek Basin Committee’s Regional Detention Facility and associated mitigation (located outside of the site)



Site P-3 Overview Diagram



Site P-3 (South) Representative Site Photographs



Site P-3 (North) Representative Site Photographs

**Table 4.1-7
Port Site P-3a Obstruction Summary**

Species	Quantity	Diameter at Breast Height	Estimated Height
Existing Obstructions (89 Total)			
Red alder	2	11 – 13"	40 – 60'
Black cottonwood	84	10 – 35"	55 – 110'
Douglas fir	2	17 – 20"	40 – 110'
Cluster of shrubs	1	Not applicable	35'
Potential Obstructions (158 Total)			
Red alder	36	4 – 16"	55 – 95'
Black cottonwood	120	4 – 25"	60 – 100'
Douglas fir	2	4 – 27"	60 – 95'

**Table 4.1-8
Port Site P-3b Obstruction Summary**

Species	Quantity	Diameter at Breast Height	Estimated Height
Existing Obstructions (26 Total)			
Big-leaf maple	1	26 – 28"	95 – 100'
Red alder	1	4 – 15"	40 – 60'
Black cottonwood	10	4 – 35"	55 – 110'
Lombardy poplar	5	16 – 35"	85 – 120'
Douglas fir	8	13 – 34"	40 – 110'
Black locust	1	8"	35'
Potential Obstructions (25 Total)			
Lombardy poplar	25	4 – 35"	60 – 120'

4.1.3.2 Site Implementation Plan

Access and Construction Staging (Figure 9)

Site P-3a can be accessed from the north via S 188th Street, which is a four-lane road with a center turning lane. To the east of Site P-3, 188th Street passes into a tunnel with a clearance height of 14 feet and 9 inches. Site P-3b can be accessed from the south via S 200th Street, which is a two-lane road with traffic in both directions. Both entrances are

controlled with gates. Between the north and south portion of the site is a wetland complex, which limits equipment accessibility between the two areas.

Site P-3a has a moderately sized area (20,000 square feet) suitable for construction staging near the entrance. Truck turn-around in this area must protect the stormwater retention basin and the wetland complex. Site P-3b has a large amount of space suitable for staging and stockpiling. Staging Sites P-4 and P-5 in this location is recommended. All staging areas would need to be restored to pre-project conditions following obstruction removal work.

Site Condition Review

1. Site P-3 hazards include non-critical slopes at the north portion of the site (16 degrees or 28.7%) and steep slopes along the north edge of the south portion of the site (greater than 24 degrees or 44.5%). Planned tree removal at the 24-degree slope area occurs at the base of the slope.
2. Sensitive areas that will be encountered in the site or while accessing the site include wetlands, wetland buffers, stream buffers, and steep slopes.
3. A culvert transports water from the south to north Wetland 28 complex underneath a narrow trail southeast of the nearby stormwater retention basin.
4. The two STIA 34C runway lighting guidance towers must be protected.
5. A concrete diversion dam at the north wetland complex must be protected.
6. Other STIA-related infrastructure to be protected includes one stormwater retention basin.

Site Preparation (See Figure 9)

1. **Secondary access improvements:** Near Site P-3a, secondary access roads are unpaved and located within wetland buffers. Portions of these unpaved roads may require modification (e.g., placement of a rock base) to facilitate large equipment and trucks.
2. **Sensitive area protection:** Install sediment controls downslope of work area and outside of wetland boundary.
3. **Infrastructure protection:** Protect stormwater discharge culvert and associated energy dissipation weir associated with the Wetland 28 complex by ensuring sediment control measures are in place prior to commencing obstruction removal site work,

and by placing flagging or high-visibility fencing materials around features to alert operators from damaging them with their equipment.

Obstruction Removal and Material Disposal (See Figure 10)

1. Selectively remove all obstruction trees in Site P-3a and also remove cluster of shrubs at the north boundary of the site (89 obstructions, 158 potential obstructions).
2. Within Site P-3b, selectively remove obstructions within or near sensitive areas (10 obstructions) and remove and grind stumps of remaining obstructions (16 obstructions, 25 potential obstructions).
3. Clear invasive species (Scotch broom and Himalayan blackberry) within clearing limits shown in Figure 9.
4. Dispose of material off site, or chip and mulch material and place processed material on site (outside of the wetland).

Site Treatment (See Figure 11)

1. Drill and treat stumps that remain with broad-spectrum glyphosate or fungus (mycelia) tablets in order to discourage sprouting.
2. Revegetate cleared areas per the planting plan and planting schedule (Figure 11). The planting categories allow for the following maximum heights for installed vegetation, though species selected for each category were selected to grow far below the following thresholds:
 - a. **Moderate height upland and buffer planting:** 140 to 200 feet
 - b. **Short height upland and buffer planting:** 100 to 140 feet
 - c. **Shrub upland and buffer planting:** 80 to 100 feet
 - d. **Upland hydroseed only:** less than 40 feet
3. The required tree replacement quantity associated with obstruction removal from Site P-3 (P-3a and P-3b combined) is 551 trees, with 310 trees planted within the site, and 241 trees planted on other Port sites or another location within the drainage basin.
4. The estimated planting quantities on Site P-3 will include the following:
 - a. **Trees:** 310
 - b. **Shrubs:** 12,000

- c. **Groundcovers:** 28,400
- d. **Seeded areas:** 512,500 square feet

Monitoring

1. Monitor stumps and treat with broad-spectrum glyphosate or fungus (mycilia) tablets to control resprouting.
2. Monitor for future obstructions.
3. Monitor to ensure revegetation areas meet the following performance standards:
 - a. **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.
 - b. **Performance Standard 2:** Invasive plant species are maintained at levels below 20% cover averaged over the entire obstruction removal area.

4.1.3.3 Best Management Practices

The following BMPs are suitable measures for controlling sediment and erosion on Site P-3.

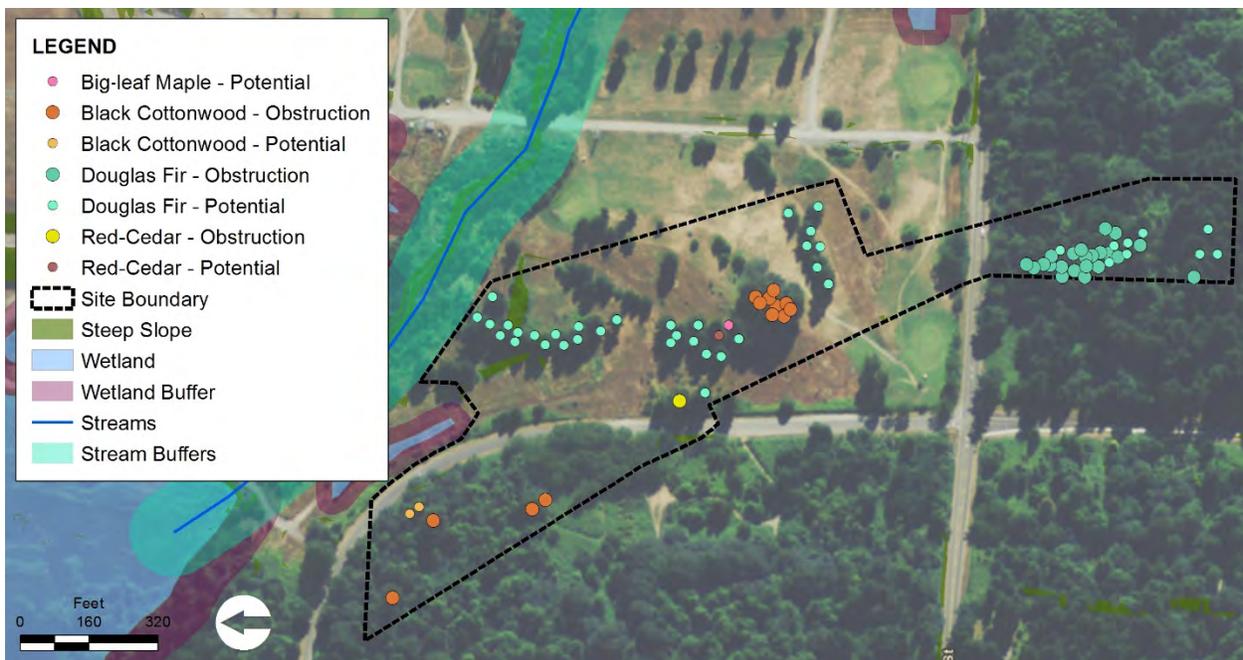
**Table 4.1-9
Port Site P-3 Best Management Practices**

BMP Category	BMP Numbers and Titles
Preserve Vegetation/Mark Clearing Limits	<ul style="list-style-type: none"> • BMP C101: Preserving Natural Vegetation • BMP C102: Buffer Zones • BMP C103: High Visibility Plastic, Metal, or Biodegradable Fence • BMP C103: Silt Fence
Establish Construction Access	<ul style="list-style-type: none"> • BMP C105: Stabilized Construction Entrance/Exit • BMP C107: Construction Road/Parking Area Stabilization
Install Sediment Controls	<ul style="list-style-type: none"> • BMP C235: Wattles • BMP C233: Silt Fence
Stabilize Soil and Protect Slopes	<ul style="list-style-type: none"> • BMP C120: Temporary and Permanent Seeding • BMP C121: Mulching
Maintain BMPs and Manage the Project	<ul style="list-style-type: none"> • BMP C160: Certified Erosion and Sediment Control Lead • BMP C162: Scheduling

4.1.4 Site P-4

4.1.4.1 Site Description

This 16-acre site is located to the south of STIA and adjacent to Site P-3. In addition to 38 tree obstructions and 57 potential tree obstructions, the northeast portion of the site contains ornamental species associated with a golf course; the remaining portions of the site contain dense invasive species including English ivy, common holly, and Himalayan blackberry. The south portion of the site has trails that are used by the public, predominately for walking/running. A parking area for this public access site is located to the east of Site P-4.



Site P-4 Overview Diagram



Site P-4 Representative Site Photographs

**Table 4.1-10
Port Site P-4 Obstruction Summary**

Species	Quantity	Diameter at Breast Height	Estimated Height
Existing Obstructions (38 Total)			
Black cottonwood	13	25 – 42"	130 – 160'
Douglas fir	24	30 – 40"	135 – 145'
Western red-cedar	1	34"	85'
Potential Obstructions (57 Total)			
Big-leaf maple	1	40"	40'
Black cottonwood	8	16 – 36"	100 – 110'
Douglas fir	47	16 – 37"	60 – 85'
Western red-cedar	1	32"	85'

4.1.4.2 Site Implementation Plan

Access and Construction Staging (Figure 12)

The northwest portion of Site P-4 can be accessed via 18th Avenue S, which is a two-lane road with a fairly substantial shoulder on the east side. The northeast portion of Site P-4 should be accessed via the same entrance for Site P-3b (from the south via S 200th Street, which is a two-lane road with traffic in both directions). The south portion of Site P-4 can be accessed from the north via S 200th Street. All portions of the site are fenced, though temporary fencing may be required to protect public recreation users in the southern portion of Site P-4. Accessing the south portion of the site will require fence removal and replacement in order to avoid impacting vegetation and walking trails.

Staging for Site P-4 should be located within the golf course portion of the site, which is also shared by Site P-3b. All staging areas would need to be restored to pre-project conditions following obstruction removal work.

Site Condition Review

1. Site P-4 hazards include dense Himalayan blackberry brambles, congestion hazards while working near public recreation area, and potentially biohazards (syringes).
2. No sensitive areas were identified within obstruction removal areas, but the site abuts a wetland and stream buffer at its north side.

Site Preparation (See Figure 12)

1. **Public safety protection:** Fence off work and staging areas that abut publically accessible roads and recreation areas.
2. **Fence removal:** The south portion of Site P-4 could be accessed directly off S 200th Street, but two to three panels of chain-link fencing would need to be removed (and replaced following completion of site work).

Obstruction Removal and Material Disposal (See Figure 13)

1. Clear and grub all conifer-dominant obstructions and potential obstruction areas (46 trees).
2. Remove and treat stumps of isolated black cottonwoods within the northwest portion of site. Leave cut material where it lays (6 trees).
3. Remove and grind stumps of remaining obstructions and potential obstructions (43 trees).
4. Clear invasive species (English ivy, common holly, and Himalayan blackberry) within clearing limits shown in Figure 12.
5. Dispose of material off site, or chip and mulch material and place processed material on site.

Site Treatment (See Figure 14)

1. Drill and treat stumps that remain with broad-spectrum glyphosate or fungus (mycilia) tablets in order to discourage sprouting.
2. Revegetate cleared areas per the planting plan and planting schedule (Figure 14). The planting categories allow for the following maximum heights for installed vegetation, though species selected for each category were selected to grow far below the following thresholds:
 - a. **Moderate height upland planting:** 140 to 200 feet
 - b. **Short height upland planting:** 100 to 140 feet
 - c. **Shrub upland planting:** 80 to 100 feet
3. The required tree replacement quantities associated with obstruction removal from Site P-4 is 95 trees; however, 198 trees will be replanted on this site, resulting in an additional 103 trees to help fulfill tree replacement requirements from other Port sites.

4. The estimated planting quantities on Site P-4 will include the following:
 - a. **Trees:** 198 (a surplus of 103 trees)
 - b. **Shrubs:** 8,200
 - c. **Groundcovers:** 13,800
 - d. **Seeded areas:** 182,163 square feet

Monitoring

1. Monitor for future obstructions.
2. Monitor to ensure revegetation areas meet the following performance standards:
 - a. **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.
 - b. **Performance Standard 2:** Invasive plant species are maintained at levels below 20% cover averaged over the entire obstruction removal area.

4.1.4.3 Best Management Practices

The following BMPs are suitable measures for controlling sediment and erosion on Site P-4.

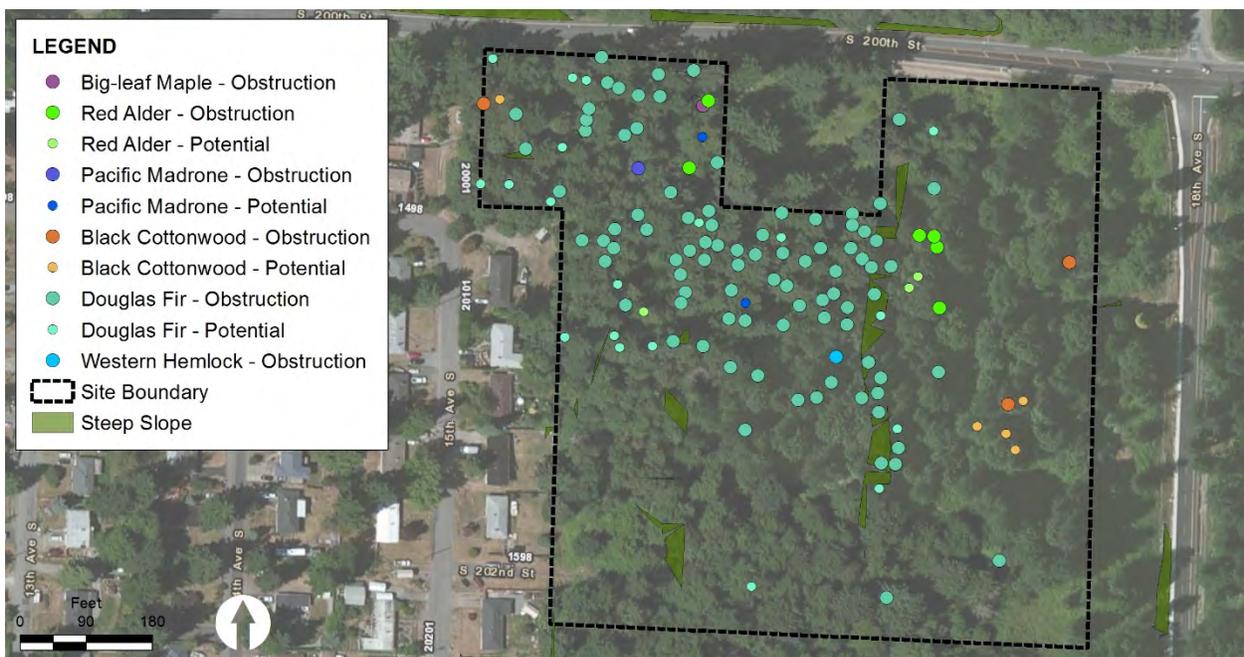
Table 4.1-11
Port Site P-4 Best Management Practices

BMP Category	BMP Numbers and Titles
Preserve Vegetation/Mark Clearing Limits	<ul style="list-style-type: none"> • BMP C101: Preserving Natural Vegetation • BMP C102: Buffer Zones • BMP C103: High Visibility Plastic, Metal, or Biodegradable Fence • BMP C103: Silt Fence
Establish Construction Access	<ul style="list-style-type: none"> • BMP C105: Stabilized Construction Entrance/Exit • BMP C107: Construction Road/Parking Area Stabilization
Install Sediment Controls	<ul style="list-style-type: none"> • BMP C235: Wattles • BMP C233: Silt Fence
Stabilize Soil and Protect Slopes	<ul style="list-style-type: none"> • BMP C120: Temporary and Permanent Seeding • BMP C121: Mulching
Maintain BMPs and Manage the Project	<ul style="list-style-type: none"> • BMP C160: Certified Erosion and Sediment Control Lead • BMP C162: Scheduling

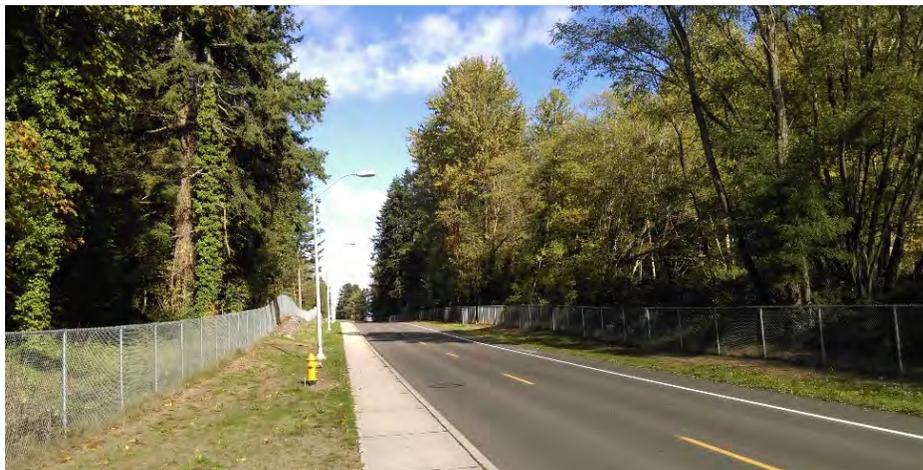
4.1.5 Site P-5

4.1.5.1 Site Description

This 12-acre site is located to the south of STIA and to the west of Port Site P-3. In addition to 104 tree obstructions and 30 potential tree obstructions, the site contains dense invasive species including English ivy, common holly, and Himalayan blackberry. The site includes steep slopes and has trails that are used by the public. There is no parking area adjacent to this area.



Site P-5 Overview Diagram



Site P-5 Representative Site Photographs

An inventory of the understory within Site P-5 was conducted to identify trees (non-obstructions) that could also be removed from the site during obstruction removal. Table 4.1-12 provides information on these 327 trees identified within the understory, as well as the existing and potential obstructions.

Table 4.1-12
Port Site P-5 Obstruction Summary

Species	Quantity	Diameter at Breast Height	Estimated Height
Existing Obstructions (104 Total)			
Big-leaf maple	1	30"	85'
Red alder	6	30"	80 – 100'
Pacific madrone	1	20	110'
Black cottonwood	4	30 – 34"	125 – 145'
Douglas fir	91	17 – 47"	85 – 150'
Western hemlock	1	27"	115
Potential Obstructions (30 Total)			
Red alder	3	16 – 21"	90 – 95'
Pacific madrone	2	20 – 24"	110 – 130'
Black cottonwood	5	17 – 34"	95 – 140'
Douglas fir	20	13 – 37"	80 – 145'
Understory Species (327 Total)			
Big-leaf maple	43	5 – 30"	20 – 50'
Red alder	96	5 – 25"	10 – 60'
Pacific madrone	28	5 – 25"	20 – 70'
Common holly	13	5 – 25"	15 – 30'
Common laurel	14	5 – 15"	20 – 25'
Apple	1	5"	20'
Black cottonwood	16	5"	20 – 25'
Bitter cherry	7	5 – 20"	15 – 40'
Douglas fir	91	5 – 30"	20 – 80'
Snags	13	5 – 30"	15-30'
Western red-cedar	4	20 – 30"	30'
Western hemlock	1	5"	20'

4.1.5.2 *Site Implementation Plan*

Access and Construction Staging (Figure 15)

Site P-5 can be accessed from the north via S 200th Street. Access will require fence removal and replacement in order to avoid impacting vegetation and public walking/biking trails.

Staging for Site P-5 should be located within the golf course site (also shared by Sites P-3b and P-4). All staging areas would need to be restored to pre-project conditions following obstruction removal work.

Site Condition Review

1. Site P-5 hazards include dense Himalayan blackberry brambles, congestion hazards while working near trails used for mountain biking, and potentially biohazards (syringes).
2. Critical areas that will be encountered in the site include steep slopes.

Site Preparation (See Figure 15)

1. **Public safety protection:** Fence off work and staging areas that abut publically accessible roads and trails.
2. **Fence removal:** Site P-5 can be accessed directly off S 200th Street but two to three panels of chain-link fencing will need to be removed (and replaced following completion of site work).

Obstruction Removal and Material Disposal (See Figure 16)

1. Clear and grub all obstructions and potential obstructions within the interior of the site (120 obstruction/overstory trees and 327 understory trees).
2. Selectively remove and grind stumps of trees found within residential and street buffer areas (11 trees).
3. Selectively remove and grind stumps of three isolated Douglas fir trees at the south end of site.
4. Clear invasive species (English ivy, common holly and Himalayan blackberry) within clearing limits shown in Figure 15.

5. Dispose of material off site, or chip and mulch material and place processed material on site.

Site Treatment (See Figure 17)

1. Install geotechnical fabric (jute) in all cleared areas with slopes greater than 4:1 prior to revegetation efforts.
2. Revegetate cleared areas per the planting plan and planting schedule (Figure 17). The planting categories allow for the following maximum heights for installed vegetation, though species selected for each category were selected to grow far below the following thresholds:
 - a. **Short height upland planting:** 100 to 140 feet
 - b. **Shrub upland planting:** 80 to 100 feet
 - c. **Groundcover upland planting:** 40 to 80 feet
3. The required tree replacement quantity associated with obstruction removal from Site P-5 is 461 trees, with 92 trees planted within the site, and 369 trees planted on other Port sites or another location within the drainage basin..
4. The estimated planting quantities on Site P-5 will include the following:
 - a. **Trees:** 92
 - b. **Shrubs:** 1,200
 - c. **Groundcovers:** 2,500
 - d. **Seeded areas:** 30,000 square feet

Monitoring

1. Monitor for future obstructions.
2. Monitor to ensure revegetation areas meet the following performance standards:
 - a. **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.
 - b. **Performance Standard 2:** Invasive plant species are maintained at levels below 20% cover averaged over the entire obstruction removal area.

4.1.5.3 Best Management Practices

The following BMPs are suitable measures for controlling sediment and erosion on Site P-5.

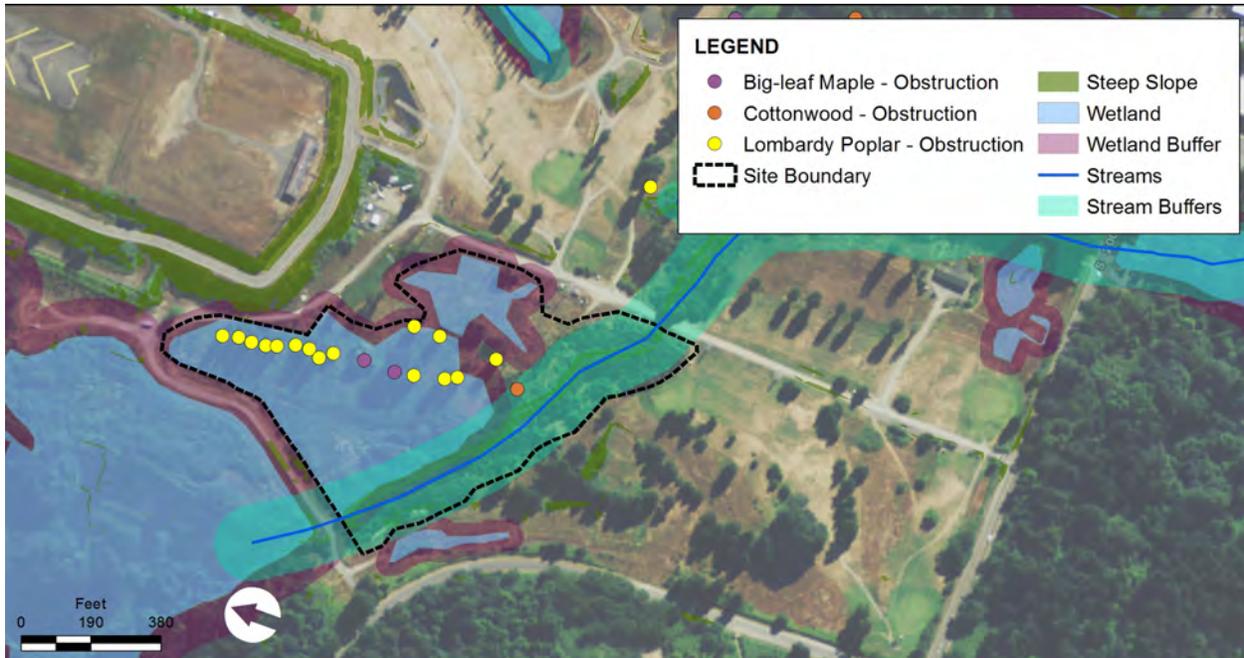
Table 4.1-13
Port Site P-5 Best Management Practices

BMP Category	BMP Numbers and Titles
Preserve Vegetation/Mark Clearing Limits	<ul style="list-style-type: none"> • BMP C101: Preserving Natural Vegetation • BMP C102: Buffer Zones • BMP C103: High Visibility Plastic, Metal, or Biodegradable Fence • BMP C103: Silt Fence
Establish Construction Access	<ul style="list-style-type: none"> • BMP C105: Stabilized Construction Entrance/Exit • BMP C107: Construction Road/Parking Area Stabilization
Install Sediment Controls	<ul style="list-style-type: none"> • BMP C235: Wattles • BMP C233: Silt Fence
Stabilize Soil and Protect Slopes	<ul style="list-style-type: none"> • BMP C120: Temporary and Permanent Seeding • BMP C121: Mulching
Maintain BMPs and Manage the Project	<ul style="list-style-type: none"> • BMP C160: Certified Erosion and Sediment Control Lead • BMP C162: Scheduling

4.1.6 Site P-6

4.1.6.1 Site Description

This 16-acre site is located to the south of STIA and to the west of Sites P-3a and P-3b; the site contains 18 existing obstructions. This site is within the Tyee mitigation area that is under restrictive covenant.



Site P-6 Overview Diagram

**Table 4.1-14
Port Site P-6 Obstruction Summary**

Species	Quantity	Diameter at Breast Height	Estimated Height
Existing Obstructions (18 Total)			
Big-leaf maple	2	26"	95'
Black cottonwood	1	12 – 24"	less than 85'
Lombardy poplar	15	16 – 35"	85 – 120'

4.1.6.2 *Site Implementation Plan*

Access and Construction Staging (Figure 18)

Site P-6 can be accessed from the south via S 200th Street, which is a two-lane road with traffic in both directions. This entrance is controlled with a gate.

Site P-6 has a large amount of space suitable for staging and stockpiling; this area is also used by Sites P-3b, P-4, and P-5. All staging areas would need to be restored to pre-project conditions following obstruction removal work.

Site Condition Review

1. Critical areas that will be encountered in the site or near the site include wetlands, wetland buffers, a stream, and stream buffers.
2. Mitigation planting areas will be protected to the west of all obstruction removal activities.

Site Preparation (See Figure 18)

1. **Sensitive area protection:** Install sediment controls downslope of work area and outside of wetland and stream boundaries.

Obstruction Removal and Material Disposal (See Figure 19)

1. Selectively remove all obstructions (18 trees) and dispose of material off site.

Site Treatment (See Figure 20)

1. Install geotechnical fabric (jute) in all cleared areas with slopes greater than 4:1 prior to revegetation efforts.
2. Revegetate cleared areas per the planting plan and planting schedule (Figure 20). The planting categories allow for the following maximum heights for installed vegetation, though species selected for each category were selected to grow far below the following threshold:
 - a. **Short height upland planting:** 100 to 140 feet

3. The required tree replacement quantities associated with obstruction removal from Site P-6 is 36 trees; however, 48 trees will be replanted on this site, resulting in an additional 12 trees to help fulfill tree replacement requirements from other Port sites.
4. The estimated planting quantities on Site P-6 will include the following:
 - a. **Trees:** 48 (a surplus of 12 trees)
 - b. **Shrubs:** 950
 - c. **Groundcovers:** 1,800
 - d. **Seeded areas:** 90,000 square feet

Monitoring

1. Monitor for future obstructions.
2. Monitor to ensure revegetation areas meet the following performance standards:
 - a. **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.
 - b. **Performance Standard 2:** Invasive plant species are maintained at levels below 20% cover averaged over the entire obstruction removal area.

4.1.6.3 Best Management Practices

The following BMPs are suitable measures for controlling sediment and erosion on Site P-6.

Table 4.1-15
Port Site P-6 Best Management Practices

BMP Category	BMP Numbers and Titles
Preserve Vegetation/Mark Clearing Limits	<ul style="list-style-type: none"> • BMP C101: Preserving Natural Vegetation • BMP C102: Buffer Zones • BMP C103: High Visibility Plastic, Metal, or Biodegradable Fence • BMP C103: Silt Fence
Establish Construction Access	<ul style="list-style-type: none"> • BMP C105: Stabilized Construction Entrance/Exit • BMP C107: Construction Road/Parking Area Stabilization
Install Sediment Controls	<ul style="list-style-type: none"> • BMP C235: Wattles • BMP C233: Silt Fence
Stabilize Soil and Protect Slopes	<ul style="list-style-type: none"> • BMP C120: Temporary and Permanent Seeding • BMP C121: Mulching
Maintain BMPs and Manage the Project	<ul style="list-style-type: none"> • BMP C160: Certified Erosion and Sediment Control Lead • BMP C162: Scheduling

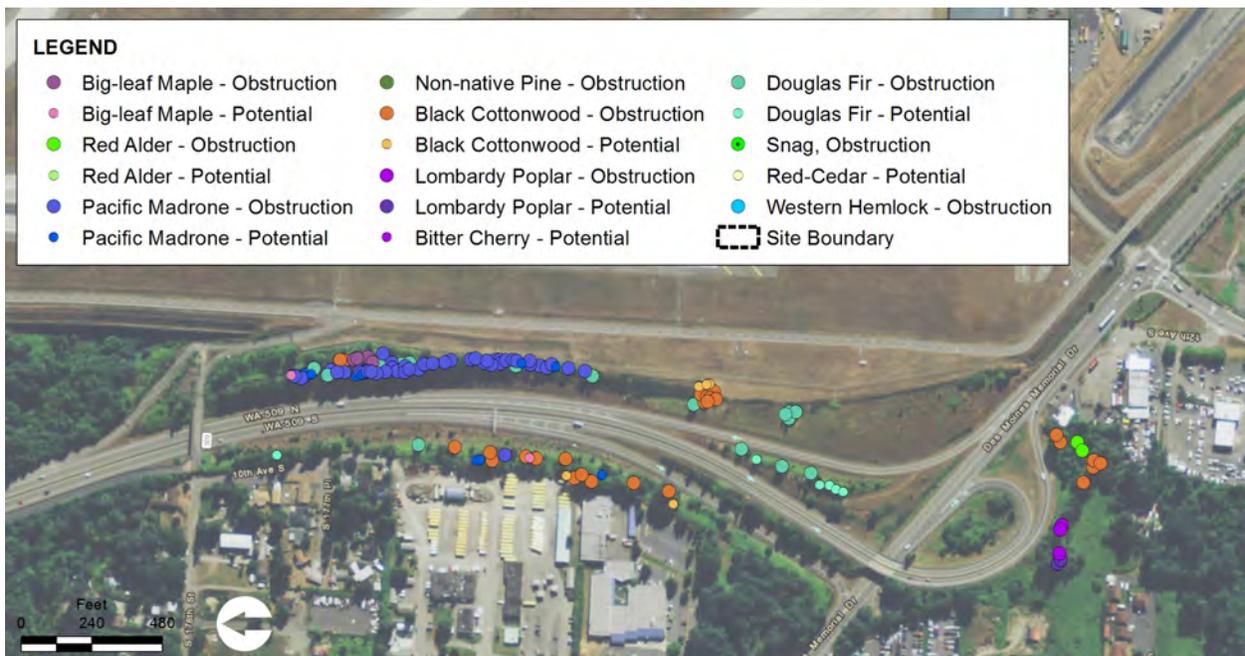
4.2 Public Properties

Public properties with obstructions and potential obstructions include state-, city-, and school district-owned lots, some of which span multiple cities properties. The largest group of obstructions on public land are on WSDOT properties that are slated for redevelopment through the SR 509 extension project.

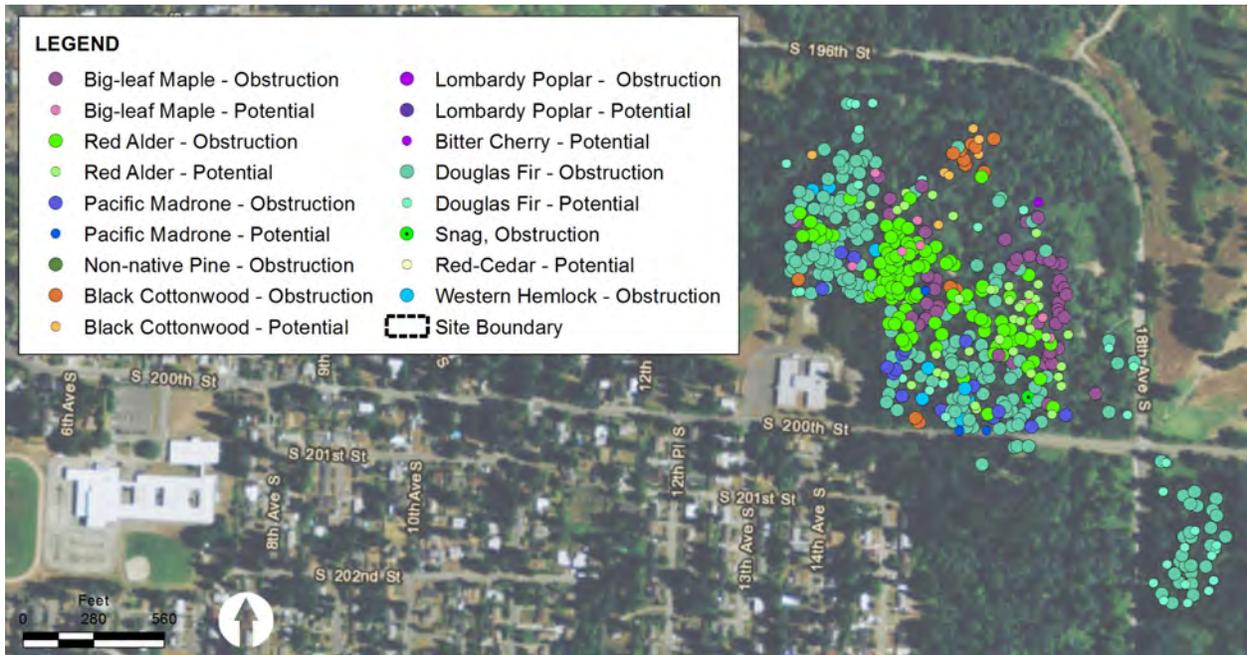
4.2.1 Site WP-1 (WSDOT Property)

4.2.1.1 Site Description

This 68-acre site is on three parcels located just south and west of the STIA property, with the two locations within the Aviation Operations (north parcel) or Aviation Commercial (south parcel) zoning designations. There are no critical areas on WSDOT property. The site has two locations, one area is located directly west of the STIA, and the other is located southwest of STIA and is surrounded by Sites P-4 and P-5. There are no critical areas on these sites. In addition to 484 tree obstructions and 119 potential tree obstructions, the sites contain invasive species including Himalayan blackberry common and hawthorn. The south area has signs of encampments and illegal dumping, as well as informal hiking trails.



Site WP-1 Overview Diagram (1 of 2)



Site WP-1 Overview Diagram (2 of 2)

**Table 4.2-1
WSDOT Site WP-1 Obstruction Summary**

Species	Quantity	Diameter at Breast Height	Estimated Height
Existing Obstructions (484 Total)			
Big-leaf maple	51	12 – 60"	65 – 145'
Red alder	109	4 – 35"	75 – 120'
Pacific madrone	61	10 – 60"	25 – 130'
Black cottonwood	40	4 – 42"	25 – 165'
Lombardy poplar	3	30"	145 – 150'
Bitter cherry	2	12"	55 – 60'
Douglas fir	208	11 – 45"	35 – 165'
Snag	1	29"	135'
Western hemlock	9	17 – 41"	100 – 155'
Potential Obstructions (119 Total)			
Big-leaf maple	10	9 – 30"	60 – 120'
Red alder	39	12 – 30"	70 – 115'
Pacific madrone	13	6 – 30"	20 – 110'
Pine species	1	13"	70'
Black cottonwood	12	5 – 41"	25 – 155'

Species	Quantity	Diameter at Breast Height	Estimated Height
Lombardy poplar	2	18 – 30"	145'
Bitter cherry	1	11"	75'
Douglas fir	40	13 – 40"	60 – 160'
Western hemlock	1	37"	135'

In addition to the obstructions and potential obstructions identified to the south of Site WP-1, a number of understory species will likely require removal during the obstruction removal process. A desktop analysis using high-resolution aerial photography was performed to estimate this quantity as 621 trees.

4.2.1.2 *Site Implementation Plan*

The Port has met with WSDOT regarding the need for removal of obstructions on WSDOT property in two locations adjacent to STIA. The first location is along the roadside of an active segment of SR 509. The second location is a forested parcel north of S 200th Street, which is designated as unconstructed ROW. WSDOT does not have objections to removal of trees from either of these locations for the purposes of meeting STIA's flight corridor safety requirements.

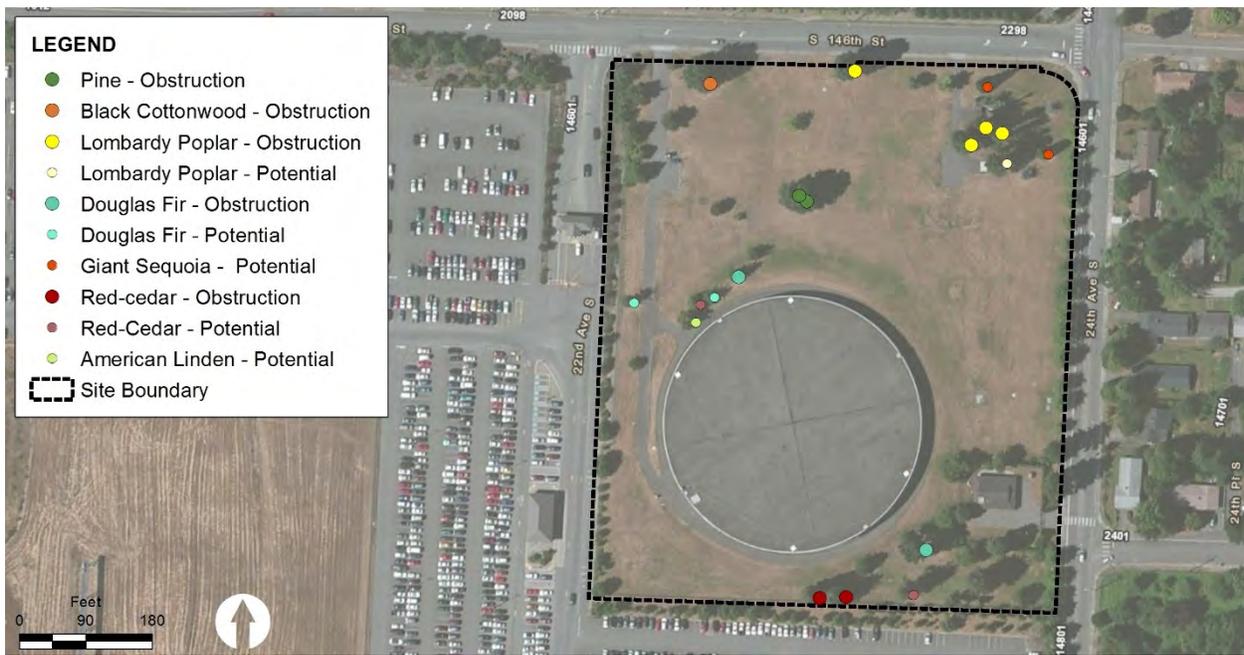
WSDOT has provided the Port with the relevant sections of the WSDOT Roadside Policy Manual so the Port can determine requirements for tree replacement within the WSDOT ROW. WSDOT may not require tree replacement on these sites; however, the Port is committed to a minimum 1:1 ratio for the Program. Therefore, tree replacement associated with WSDOT parcels may occur off site.

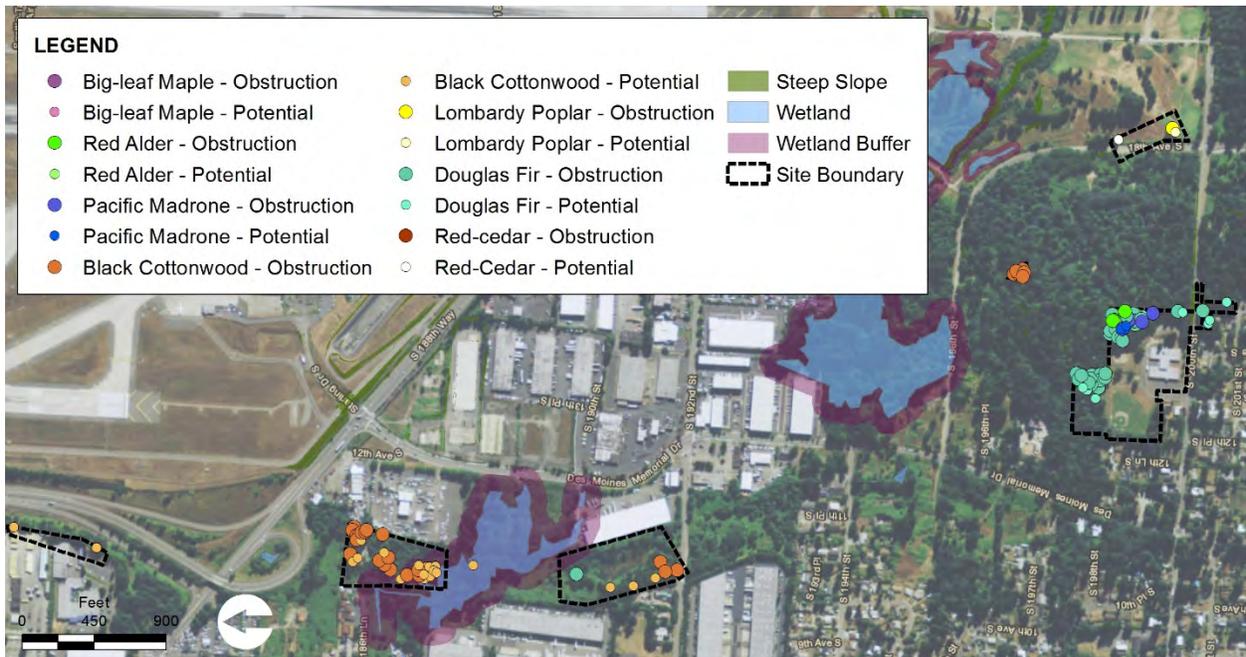
The Port will provide the detailed tree inventory, field data, and relevant municipal code reviews to WSDOT to support WSDOT's regulatory compliance efforts.

4.2.2 SeaTac Site (SP-1)

4.2.2.1 Site Description

This 63-acre site has two locations includes an area north of STIA on a Seattle Public Utility water reservoir site that is publically used as a park, as well as parcels located on City of SeaTac ROWs, and on parcels owned by the Department of Natural Resources, Highline School District, or City of SeaTac. One portion of the site contains a wetland and wetland buffer. There are 87 obstructions and 41 potential obstructions within Site SP-1.





Site SP-1b Overview Diagram

**Table 4.2-2
SeaTac Site SP-1 Obstruction Summary**

Species	Quantity	Diameter at Breast Height	Estimated Height
Existing Obstructions (87 Total)			
Big-leaf maple	1	20"	120'
Red alder	4	12 – 20"	80 – 120'
Pacific madrone	5	14 – 35"	90 – 125'
Pine species	2	28 – 42"	80'
Black cottonwood	29	16 – 55"	85 – 160'
Lombardy poplar	5	24 – 50"	58 – 120'
Douglas fir	39	13 – 37"	35 – 140'
Western red-cedar	2	30 – 38"	105'
Potential Obstructions (41 Total)			
Pacific madrone	3	12 – 16"	85 – 90'
Black cottonwood	20	19 – 40"	100 – 145'
Lombardy poplar	2	30 – 46"	100 – 110'
Douglas fir	10	13 – 24"	40 – 135'
Giant sequoia	2	26 – 36"	90 – 100'
Western red-cedar	3	21 – 30"	65 – 105'
American linden	1	15"	40'

4.2.2.2 *Site Implementation Plan*

Access and Construction Staging

Access and staging areas to be determined following coordination with property owners.

Site Condition Review

1. Utility locates will be required for all obstruction and potential obstruction removal areas.
2. Sensitive areas that will be encountered in the site include a wetland and wetland buffer.

Site Preparation

1. **Public safety protection:** Fence off work and staging areas that abut publically accessible roads and recreation areas.
2. **Verify trees for removal:** Mark all trees for removal to be inspected by engineer prior to commencing removal activities.

Obstruction Removal and Material Disposal

1. Clear and grub all obstructions and potential obstructions (87 obstructions, 41 potential obstructions).
2. If conditions are found that prohibit full grubbing (e.g., protection of existing facilities), cut and grind stumps to meet finished grade and treat with broad-spectrum glyphosate or fungus (mycilia) tablets. Grinding stumps can lead to sinkholes and grade irregularities when the remaining root systems decompose overtime; therefore, grinding stumps should be a last resort over grubbing and only used where grubbing would damage facilities (e.g., structural foundations).
3. Dispose of material off site.

Site Treatment

1. Parcel owners may choose from the plant list in Appendix A for landscape vegetation replacement.

Monitoring

1. Monitor for future obstructions.

4.2.3 Burien Site (BP-1)

4.2.3.1 Site Description

This 0.5-acre site is located northwest of STIA on a City of Burien ROW. There are six obstructions within Site BP-1. No sensitive areas have been identified on this site.



Site BP-1 Overview Diagram

**Table 4.2-3
Burien Site BP-1 Obstruction Summary**

Species	Quantity	Diameter at Breast Height	Estimated Height
Existing Obstructions (6 Total)			
Black cottonwood	4	30 – 34"	130 – 140'
Douglas fir	2	26 – 27"	130'

4.2.3.2 Site Implementation Plan

Access and Construction Staging

Access and staging areas to be determined following coordination with property owners.

Site Condition Review

1. Utility locates will be required for all obstruction and potential obstruction removal areas.

Site Preparation

1. **Public safety protection:** Fence off work and staging areas that abut publically accessible roads and parking areas.
2. **Verify trees for removal:** Mark all trees for removal to be inspected by engineer prior to commencing removal activities.

Obstruction Removal and Material Disposal

1. Clear and grub all obstructions (6 total).
2. If conditions are found that prohibit full grubbing, cut and grind stumps to meet finished grade and treat with broad-spectrum glyphosate or fungus (mycilia) tablets. Grinding stumps can lead to sinkholes and grade irregularities when the remaining root systems decompose overtime; therefore, grinding stumps should be a last resort over grubbing, only used where grubbing would damage facilities (e.g., structural foundations).
3. Dispose of material off site.

Site Treatment

1. Parcel owners may choose from the plant list in Appendix A for landscape vegetation replacement.

Monitoring

1. Monitor for future obstructions.

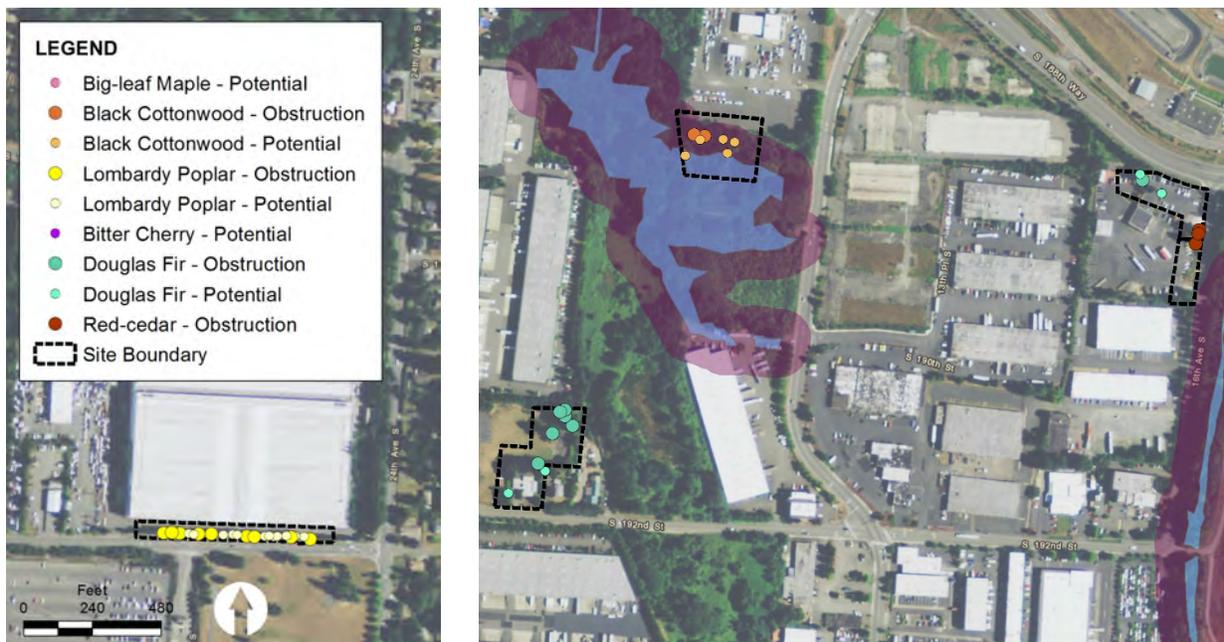
4.3 Private Properties

Private properties with obstructions and potential obstructions are primarily found in residential areas, though SeaTac includes sites that are found on commercial or institutional sites as well.

4.3.1 SeaTac Commercial/Institution (SC-1)

4.3.1.1 Site Description

This 4-acre site has two locations, one to the northeast of STIA and one to the southwest of STIA. These locations include parcels owned by Boeing (left diagram), and parcels owned by car rental companies (Hertz and Avis), and a church (right diagram). One portion of the site includes a wetland and wetland buffer sensitive areas. There are 22 obstructions and 22 potential obstructions within Site SC-1.



Site SC-1 Overview Diagrams

**Table 4.3-1
SeaTac Site SC-1 Obstruction Summary**

Species	Quantity	Diameter at Breast Height	Estimated Height
Existing Obstructions (22 Total)			
Black cottonwood	2	34"	135'
Lombardy poplar	10	13 – 21"	55'
Douglas fir	7	20 – 26"	100 – 130'
Western red-cedar	3	18 – 34"	75 – 90'
Potential Obstructions (22 Total)			
Black cottonwood	5	30 – 36"	135 – 145'
Lombardy poplar	12	12 – 17"	55'
Douglas fir	4	16 – 22"	70 – 100'
Giant sequoia	1	24"	55'

4.3.1.2 *Site Implementation Plan*

Access and Construction Staging

Access and staging areas to be determined following coordination with property owners.

Site Condition Review

1. Utility locates will be required for all obstruction and potential obstruction removal areas.
2. Sensitive areas that will be encountered in the site include a wetland and wetland buffer.

Site Preparation

1. **Public safety protection:** Fence off work and staging areas that abut publically accessible roads and parking areas.
2. **Verify trees for removal:** Mark all trees for removal to be inspected by engineer prior to commencing removal activities.

Obstruction Removal and Material Disposal

1. Clear and grub all obstructions and potential obstructions (22 obstructions, 22 potential obstructions).

2. If conditions are found that prohibit full grubbing, cut and grind stumps to meet finished grade and treat with broad-spectrum glyphosate or fungus (mycelia) tablets. Grinding stumps can lead to sinkholes and grade irregularities when the remaining root systems decompose overtime; therefore, grinding stumps should be a last resort over grubbing and only used where grubbing would damage facilities (e.g., structural foundations).
3. Dispose of material off site.

Site Treatment

1. Parcel owners may choose from the plant list in Appendix A for landscape vegetation replacement.

Monitoring

1. Monitor for future obstructions.

**Table 4.3-2
SeaTac Site SR-1 Obstruction Summary**

Species	Quantity	Diameter at Breast Height	Estimated Height
Existing Obstructions (46 Total)			
Pine species	1	46"	115'
Lombardy poplar	1	30"	120'
Douglas fir	42	16 – 57"	85 – 160'
Western red-cedar	1	38"	130'
Western hemlock	1	36"	150'
Potential Obstructions (22 Total)			
Red alder	1	24"	100'
Paper birch	1	30"	75'
Black cottonwood	3	17 – 18"	85 – 90'
Douglas fir	17	16 – 35"	85 – 150'

4.3.2.2 *Site Implementation Plan*

Access and Construction Staging

Access and staging areas to be determined following coordination with property owners.

Site Condition Review

1. Utility locates will be required for all obstruction and potential obstruction removal areas.

Site Preparation

1. **Public safety protection:** Fence off work and staging areas that abut publically accessible roads and parking areas.
2. **Verify trees for removal:** Mark all trees for removal to be inspected by engineer prior to commencing removal activities.
3. **Place steel plates or mats to provide access while protecting the ground:** Provide barricades between structures and/or resident access routes and obstruction removal areas for safety and structure protection.

Obstruction Removal and Material Disposal

1. Clear and grub all obstructions and potential obstructions (46 obstructions, 22 potential obstructions).
2. If conditions are found that prohibit full grubbing, cut and grind stumps to meet finished grade and treat with broad-spectrum glyphosate or fungus (mycilia) tablets. Grinding stumps can lead to sinkholes and grade irregularities when the remaining root systems decompose overtime; therefore, grinding stumps should be a last resort over grubbing and only used where grubbing would damage facilities (e.g., structural foundations).
3. Dispose of material off site.

Site Treatment

1. Parcel owners may choose from the plant list in Appendix A for landscape vegetation replacement.

Monitoring

1. Monitor for future obstructions.

4.3.3 Burien Residential (BR-1)

4.3.3.1 Site Description

This 17-parcel site has two locations to the northwest (left diagram) and southwest (right diagram) of STIA within private residential properties. A total of 58 existing obstructions and 14 potential obstructions have been identified on these parcels. No sensitive areas have been identified on the parcels within Site BR-1.



Site BR-1 Overview Diagrams

**Table 4.3-3
Burien Site BR-1 Obstruction Summary**

Species	Quantity	Diameter at Breast Height	Estimated Height
Existing Obstructions (58 Total)			
Big-leaf maple	1	33"	115'
Black cottonwood	20	20 – 34"	120 – 140'
Douglas fir	36	17 – 30"	115 – 130'
Western hemlock	1	22"	120'
Potential Obstructions (14 Total)			
Pacific madrone	2	25 – 30"	65 – 100'
Deodar cedar	2	25 – 27"	115 – 125'
Black cottonwood	4	22 – 31"	130 – 135'
Douglas fir	6	22 – 26"	125 – 130'

4.3.3.2 *Site Implementation Plan*

Access and Construction Staging

Access and staging areas to be determined following coordination with property owners.

Site Condition Review

1. Utility locates will be required for all obstruction and potential obstruction removal areas.

Site Preparation

1. **Public safety protection:** Fence off work and staging areas that abut publically accessible roads and parking areas.
2. **Verify trees for removal:** Mark all trees for removal to be inspected by engineer prior to commencing removal activities.
3. **Place steel plates or mats to provide access while protecting the ground:** Provide barricades between structures and/or resident access routes and obstruction removal areas for safety and structure protection.

Obstruction Removal and Material Disposal

1. Clear and grub all obstructions and potential obstructions (58 obstructions, 14 potential obstructions).
2. If conditions are found that prohibit full grubbing, cut and grind stumps to meet finished grade and treat with broad-spectrum glyphosate or fungus (mycilia) tablets. Grinding stumps can lead to sinkholes and grade irregularities when the remaining root systems decompose overtime; therefore, grinding stumps should be a last resort over grubbing and only used where grubbing would damage facilities (e.g., structural foundations).
3. Dispose of material off site.

Site Treatment

1. Parcel owners may choose from the plant list in Appendix A for landscape vegetation replacement.
2. Site restoration may include grading, seeding, replacing and installing plants to compensate for damaged landscape areas, and filling ruts caused by equipment.

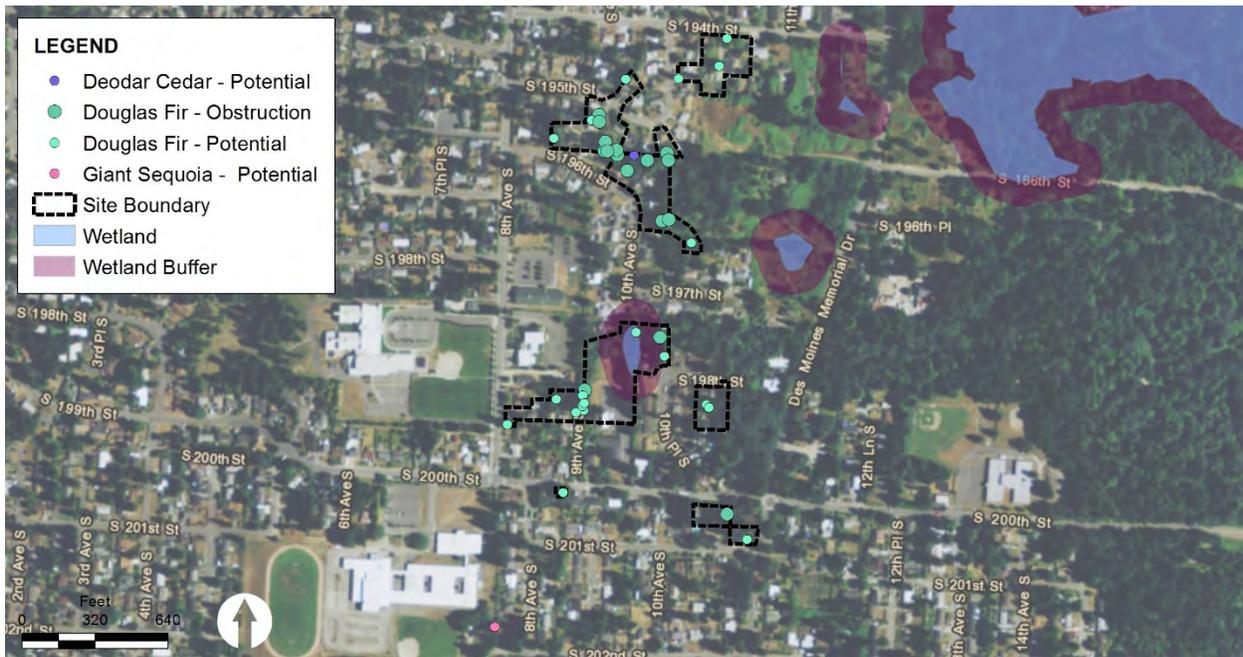
Monitoring

1. Monitor for future obstructions.

4.3.4 Des Moines Residential (DR-1)

4.3.4.1 Site Description

This 25-parcel site is located to the southwest of STIA within private residential properties. A total of 16 existing obstructions and 22 potential obstructions occur within parcels on this site. One obstruction and one potential obstruction are located within a wetland and wetland buffer.



Site DR-1 Overview Diagram

Table 4.3-4
Des Moines Site DR-1 Obstruction Summary

Species	Quantity	Diameter at Breast Height	Estimated Height
Existing Obstructions (16 Total)			
Douglas fir	16	14 – 31"	80 – 130'
Potential Obstructions (22 Total)			
Deodar cedar	1	30"	105'
Douglas fir	20	13 – 46"	80 – 130'
Giant sequoia	1	30"	130'

4.3.4.2 *Site Implementation Plan*

Access and Construction Staging

Access and staging areas to be determined following coordination with property owners.

Site Condition Review

1. Utility locates will be required for all obstruction and potential obstruction removal areas.

Site Preparation

1. **Public safety protection:** Fence off work and staging areas that abut publically accessible roads and parking areas.
2. **Verify trees for removal:** Mark all trees for removal to be inspected by engineer prior to commencing removal activities.
3. **Place steel plates or mats to provide access while protecting the ground:** Provide barricades between structures and/or resident access routes and obstruction removal areas for safety and structure protection.

Obstruction Removal and Material Disposal

1. Clear and grub all obstructions and potential obstructions (16 obstructions, 22 potential obstructions).
2. If conditions are found that prohibit full grubbing, cut and grind stumps to meet finished grade. Grinding stumps can lead to sinkholes and grade irregularities when the remaining root systems decompose overtime; therefore, grinding stumps should be a last resort over grubbing and only used where grubbing would damage facilities (e.g., structural foundations).
3. Dispose of material off site.

Site Treatment

1. Parcel owners may choose from the plant list in Appendix A for landscape vegetation replacement.

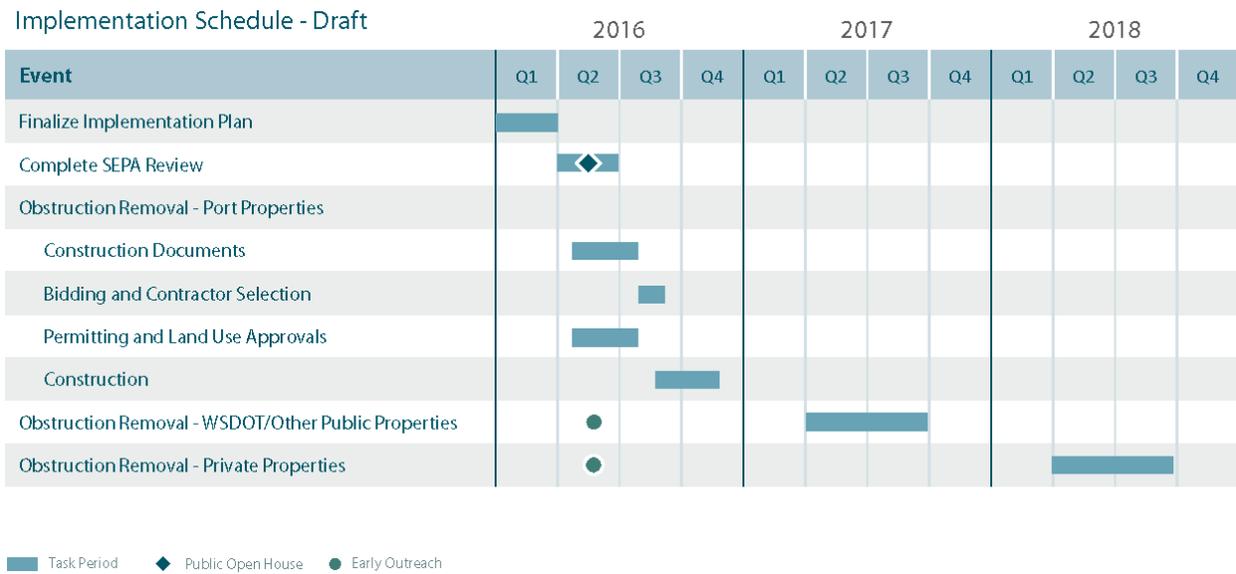
Monitoring

1. Monitor for future obstructions.

5 SCHEDULE

5.1 Overall Schedule

The schedule for the overall Program is presented below. The overall process will include permitting obstruction removal for the entire project, coordination with public agencies and outreach and coordination with private property owners, and finally implementation of obstruction management.



5.2 Sequencing by Site

Sequencing of obstruction management will begin with Port sites in 2016. In 2017, obstruction management on public sites, and then private sites, will be implemented. Figure 21 illustrates these three separate phases.

6 REFERENCES

Ecology (Washington State Department of Ecology), 2012. *Stormwater Management Manual for Western Washington*. Publication Number 12-10-030. August.

USDA (U.S. Department of Agriculture), 2016. Danger Tree Mitigation Guidelines for Managers. Cited February 15, 2016. Available from: <http://www.fs.fed.us/t-d/pubs/htmlpubs/htm11512815/page05.htm>.

FIGURES



Q:\Jobs\PortofSeattle_0003\SD21-ObstructionRemoval\Maps\2016_04\Report_Figures\Figure 01 - Project Vicinity Map.mxd bsevertsen 4/25/2016 10:56:02 AM

Sites by ownership

- Port
- Public
- Private
- City Boundary

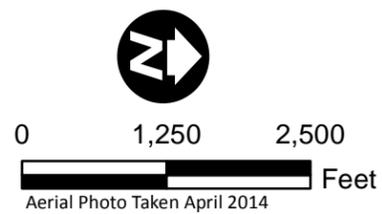


Figure 1
 Project Vicinity Map
 Flight Corridor Safety Program
 Port of Seattle



Obstruction points based on 2015 LiDAR data; trees identified during field reconnaissance are shown on site maps

Q:\Jobs\PortofSeattle_0003\SD21-ObstructionRemoval\Maps\2016_04\Report_Figures\Figure 02 - Location of Existing and Potential Obstructions.mxd bsevertsen 4/25/2016 11:02:30 AM

Sites by ownership

- Port
- Public
- Private
- Existing Obstructions
- Potential Obstructions



0 1,000 2,000 Feet
Aerial Photo Taken April 2014



Figure 2
Location of Obstructions
Flight Corridor Safety Program
Port of Seattle



Q:\Jobs\PortofSeattle_0003\SD21-ObstructionRemoval\Maps\2016_04\Report_Figures\Figure 03 - Site P-1 Site Preparation Plan.mxd bsevertsen 4/25/2016 11:14:32 AM

- | | | |
|---|--|--|
|  Site Boundary |  Clearing Limits |  Steep Slopes (Slope >=40%) |
|  Staging Area |  Temporary Erosion and Sediment Control |  Wetlands |
|  Access Routes |  Culvert to Protect |  Wetland Buffers |

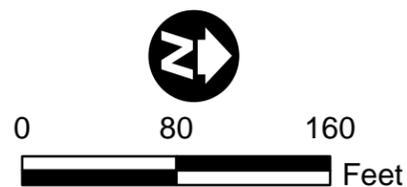


Figure 3
 Site P-1 Access, Staging, and Site Preparation Plan
 Flight Corridor Safety Program
 Port of Seattle



- List of species acronyms:**
- ACER: Japanese maple
 - ACMA: Big-leaf maple
 - ALRU: Red alder
 - ARME: Pacific madrone
 - PINE: Non-native pine
 - PISI: Scots pine
 - POAL: Silver poplar
 - POBA: Black cottonwood
 - POLO: Lombardy poplar
 - PREM: Bitter cherry
 - PSME: Douglas fir
 - ROPS: Black locust
 - Sorbus: Mountain ash
 - THPL: Western red-cedar
 - TSHE: Western hemlock

Q:\Jobs\PortofSeattle_0003\SD21-ObstructionRemoval\Maps\2016_04\Report_Figures\Figure 04 - Site P-1 Obstruction Removal and Material Disposal Plan.mxd bsevertsen 4/25/2016 11:47:10 AM

-  Site Boundary
-  Disposal Area
-  Obstruction Removal / Invasive Species Clearing Extent

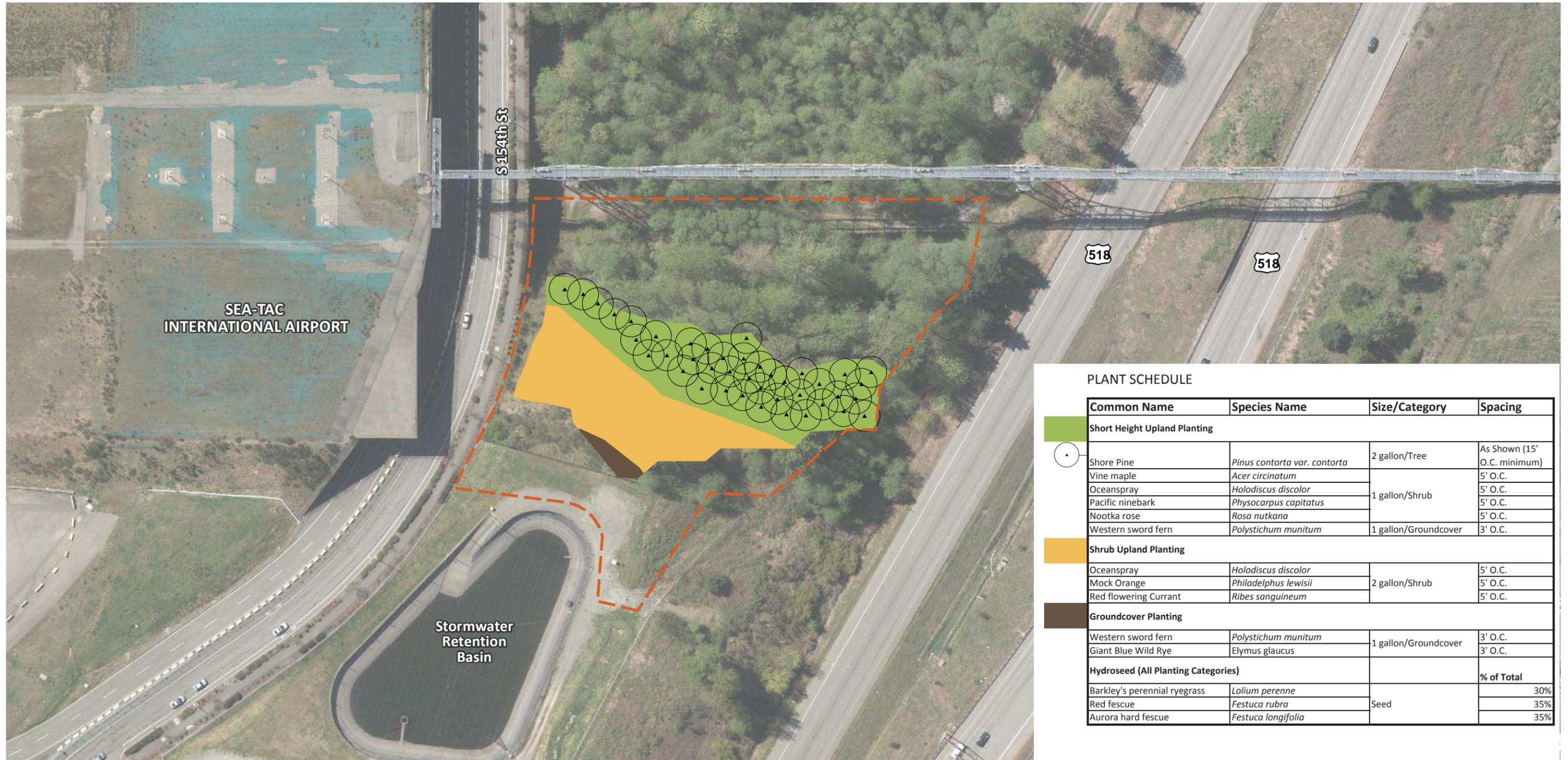
Tree Removal Summary (56 Total)

POBA: 31
ALRU: 25

  Feet
Aerial Photo Taken April 2014



Figure 4
Site P-1 Obstruction Removal and Disposal Plan
Flight Corridor Safety Program
Port of Seattle



PLANT SCHEDULE

Common Name	Species Name	Size/Category	Spacing
Short Height Upland Planting			
Shore Pine	<i>Pinus contorta var. contorta</i>	2 gallon/Tree	As Shown (15' O.C. minimum)
Vine maple	<i>Acer circinatum</i>	1 gallon/Shrub	5' O.C.
Oceanspray	<i>Holodiscus discolor</i>		5' O.C.
Pacific ninebark	<i>Physocarpus capitatus</i>		5' O.C.
Nootka rose	<i>Rosa nutkana</i>		5' O.C.
Western sword fern	<i>Polystichum munitum</i>	1 gallon/Groundcover	3' O.C.
Shrub Upland Planting			
Oceanspray	<i>Holodiscus discolor</i>	2 gallon/Shrub	5' O.C.
Mock Orange	<i>Philadelphus lewisii</i>		5' O.C.
Red flowering Currant	<i>Ribes sanguineum</i>		5' O.C.
Groundcover Planting			
Western sword fern	<i>Polystichum munitum</i>	1 gallon/Groundcover	3' O.C.
Giant Blue Wild Rye	<i>Elymus glaucus</i>		3' O.C.
Hydroseed (All Planting Categories)			% of Total
Barkley's perennial ryegrass	<i>Lolium perenne</i>	Seed	30%
Red fescue	<i>Festuca rubra</i>		35%
Aurora hard fescue	<i>Festuca longifolia</i>		35%

Q:\Jobs\PortofSeattle_0003\SD21-ObstructionRemoval\Maps\2016_04\Report_Figures\Figure 05 - Site P-1 Revegetation.mxd bsevertsen 4/21/2016 11:58:30 AM

 Site Boundary

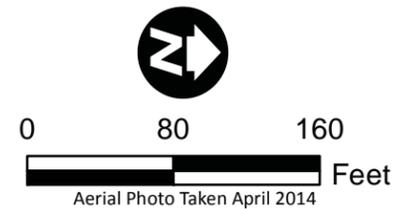
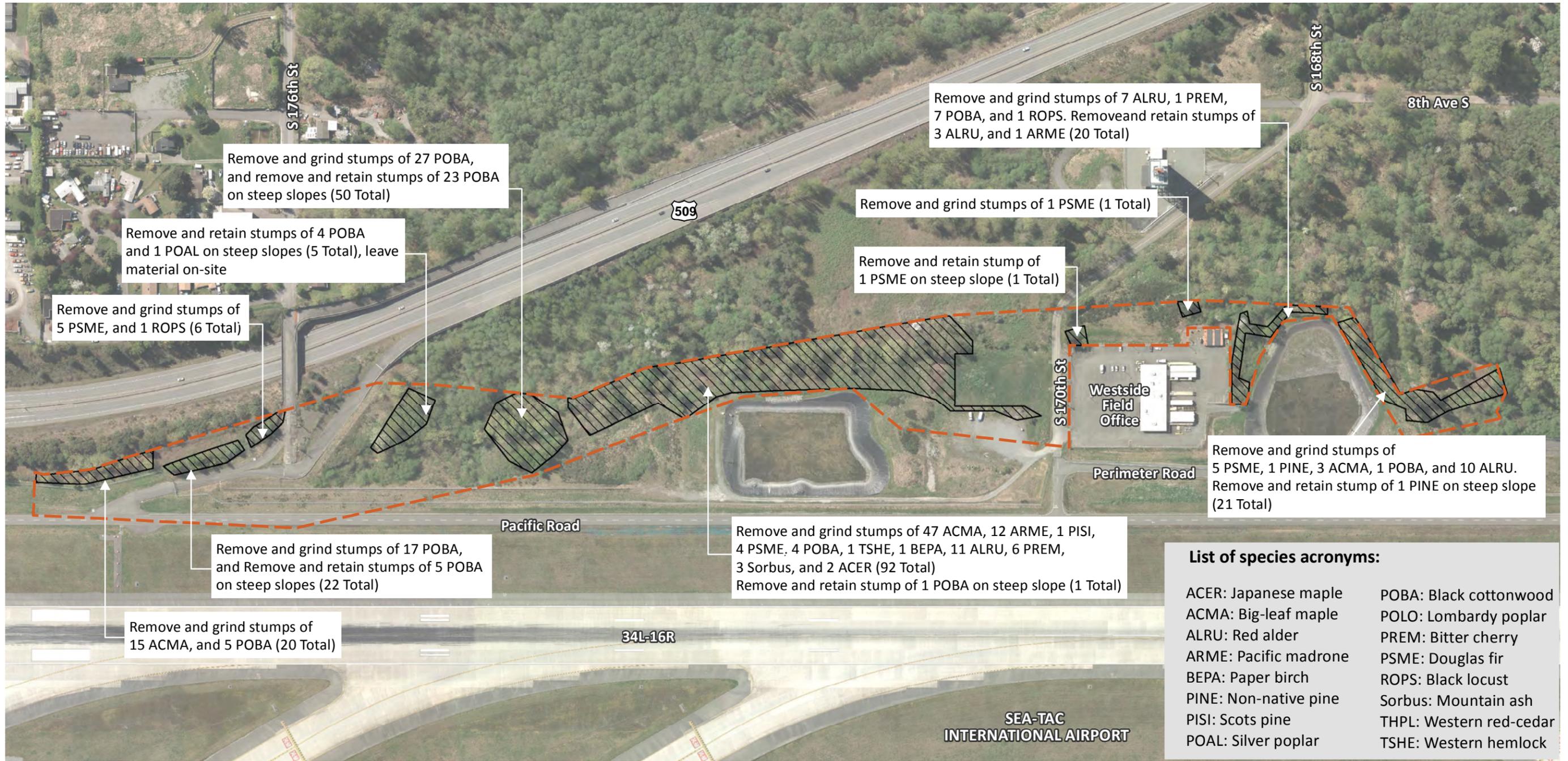


Figure 5
 Site P-1 Planting Plan
 Flight Corridor Safety Program
 Port of Seattle



List of species acronyms:

ACER: Japanese maple	POBA: Black cottonwood
ACMA: Big-leaf maple	POLO: Lombardy poplar
ALRU: Red alder	PREM: Bitter cherry
ARME: Pacific madrone	PSME: Douglas fir
BEPA: Paper birch	ROPS: Black locust
PINE: Non-native pine	Sorbus: Mountain ash
PISI: Scots pine	THPL: Western red-cedar
POAL: Silver poplar	TSHE: Western hemlock

Q:\Jobs\PortofSeattle_0003\SD21-ObstructionRemoval\Maps\2016_04\Report_Figures\Figure 07 - Site P-2 Obstruction Removal and Material Disposal Plan.mxd bsevertsen 4/25/2016 11:51:04 AM

- Site Boundary
- Obstruction Removal / Invasive Species Clearing Extent

Tree Removal Summary (239 Total)

ACER: 2	PINE/PISI: 3	ROPS: 2
ACMA: 65	POAL: 1	Sorbus: 3
ALRU: 31	POBA: 94	TSHE: 1
ARME: 13	PREM: 7	
BEPA: 1	PSME: 16	

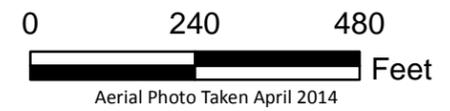


Figure 7
 Site P-2 Obstruction Removal Plan
 Flight Corridor Safety Program
 Port of Seattle



PLANT SCHEDULE

Common Name	Species Name	Size/Category	Spacing
Short Height Upland Planting			
Shore Pine	<i>Pinus contorta var. contorta</i>	2 gallon/Tree	As Shown (15' O.C. minimum)
Vine maple	<i>Acer circinatum</i>	1 gallon/Shrub	5' O.C.
Oceanspray	<i>Holodiscus discolor</i>		5' O.C.
Pacific ninebark	<i>Physocarpus capitatus</i>	1 gallon/Shrub	5' O.C.
Nootka rose	<i>Rosa nutkana</i>		5' O.C.
Western sword fern	<i>Polystichum munitum</i>	1 gallon/Groundcover	3' O.C.
Short Height Buffer Planting			
Shore Pine	<i>Pinus contorta var. contorta</i>	2 gallon/Tree	As Shown (15' O.C. minimum)
Pacific willow	<i>Salix lucida lasiandra</i>	Livestake (3 per cluster, spaced 5' O.C)	As Shown (15' O.C. between clusters)
Pacific ninebark	<i>Physocarpus capitatus</i>	1 gallon/Shrub	5' O.C.
Wild clustered rose	<i>Rosa pisocarpa</i>		5' O.C.
Western sword fern	<i>Polystichum munitum</i>	1 gallon/Groundcover	3' O.C.

Common Name	Species Name	Size/Category	Spacing
Shrub Upland Planting			
Oceanspray	<i>Holodiscus discolor</i>	2 gallon/Shrub	5' O.C.
Mock Orange	<i>Philadelphus lewisii</i>		5' O.C.
Red flowering Currant	<i>Ribes sanguineum</i>		5' O.C.
Shrub Buffer Planting			
Oceanspray	<i>Holodiscus discolor</i>	2 gallon/Shrub	5' O.C.
Pacific ninebark	<i>Physocarpus capitatus</i>		5' O.C.
Wild clustered rose	<i>Rosa pisocarpa</i>		5' O.C.
Groundcover Planting			
Western sword fern	<i>Polystichum munitum</i>	1 gallon/Groundcover	3' O.C.
Giant Blue Wild Rye	<i>Elymus glaucus</i>		3' O.C.

Common Name	Species Name	Size/Category	% of Total
Wetland Planting			
Blue wildrye	<i>Elymus glaucus</i>	Seed	25%
Western mannagrass	<i>Glyceria occidentalis</i>		8%
Glyceria elata	<i>Tall mannagrass</i>		10%
Tufted hairgrass	<i>Deschampsia cespitosa</i>		10%
Annual ryegrass	<i>Lolium multiflorum</i>		15%
Chewings red fescue	<i>Festuca rubra</i>		10%
Meadow foxtail	<i>Alopecurus pratensis</i>		10%
Bentgrass	<i>Agrostis tenuis</i>		10%
Alsike clover	<i>Trifolium hybridum</i>		2%
Upland Hydroseed (All Upland Planting Categories)			
Barkley's perennial ryegrass	<i>Lolium perenne</i>	Seed	30%
Red fescue	<i>Festuca rubra</i>		35%
Aurora hard fescue	<i>Festuca longifolia</i>		35%

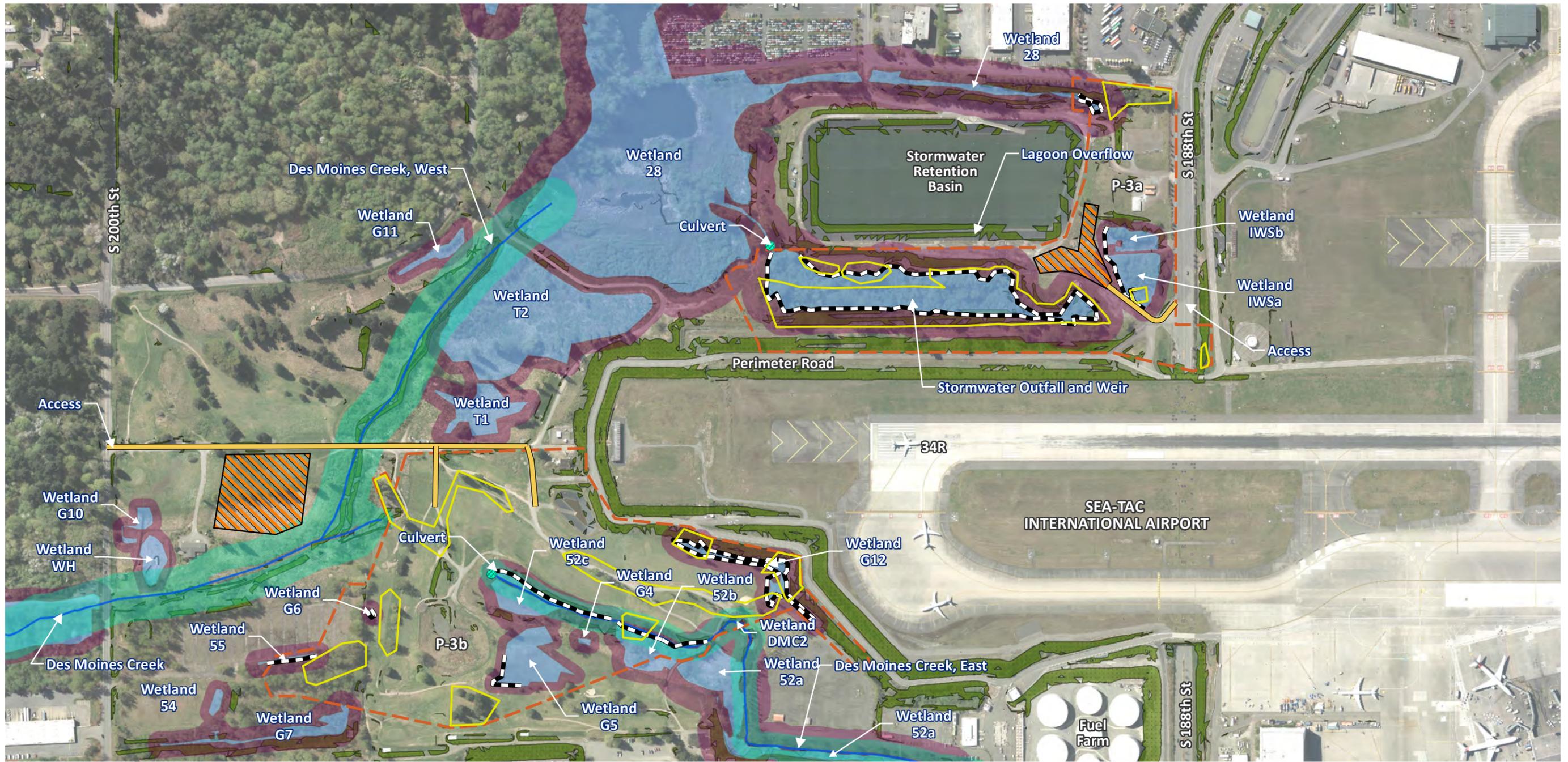


Q:\Jobs\PortofSeattle_0003\SD21-ObstructionRemoval\Maps\2016_04\Report_Figures\Figure 08 - Site P-2 Revegetation.mxd bsevertsen 4/21/2016 12:03:57 PM

Site Boundary



Figure 8
 Site P-2 Planting Plan
 Flight Corridor Safety Program
 Port of Seattle



Q:\Jobs\PortofSeattle_0003\SD21-ObstructionRemoval\Maps\2016_04\Report_Figures\Figure 09 - Site P-3 Site Preparation Plan.mxd bsevertsen 4/25/2016 11:57:44 AM

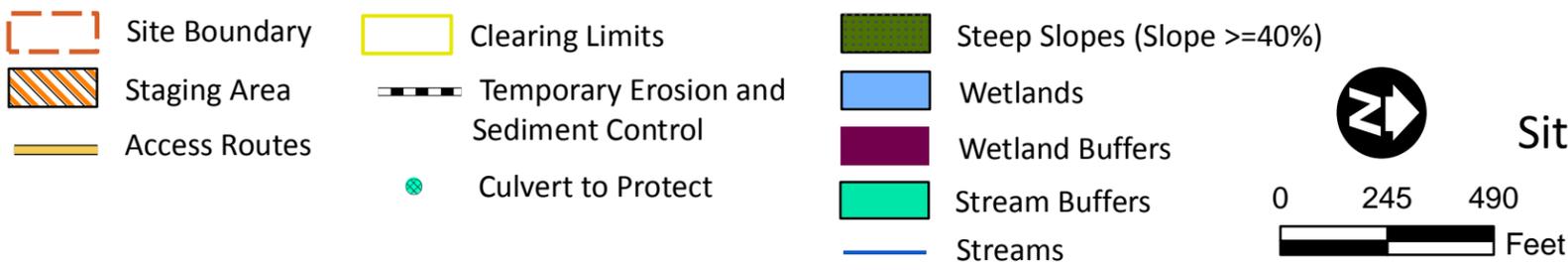
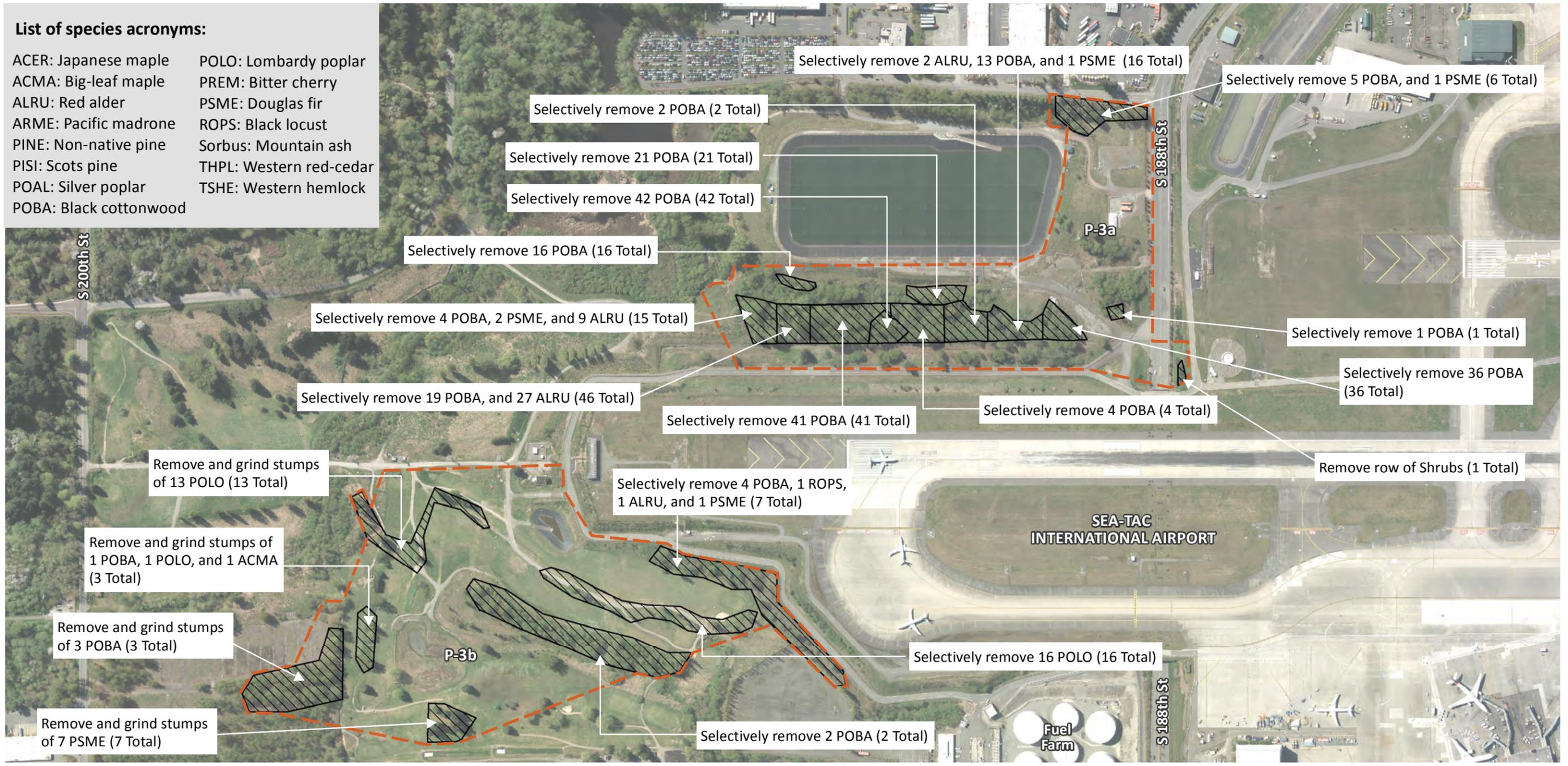


Figure 9

Sites P-3a & P-3b Access, Staging, and Site Preparation Plan
 Flight Corridor Safety Program
 Port of Seattle

List of species acronyms:

- | | |
|------------------------|-------------------------|
| ACER: Japanese maple | POLO: Lombardy poplar |
| ACMA: Big-leaf maple | PREM: Bitter cherry |
| ALRU: Red alder | PSME: Douglas fir |
| ARME: Pacific madrone | ROPS: Black locust |
| PINE: Non-native pine | Sorbus: Mountain ash |
| PISI: Scots pine | THPL: Western red-cedar |
| POAL: Silver poplar | TSHE: Western hemlock |
| POBA: Black cottonwood | |



Q:\Jobs\PortofSeattle_0003\SD21-ObstructionRemoval\Maps\2016_04\Report_Figures\Figure 10 - Site P-3 Obstruction Removal and Material Disposal Plan.mxd bsevertsen 4/25/2016 12:25:10 PM

-  Site Boundary
-  Obstruction Removal / Invasive Species Clearing Extent

Tree Removal Summary (298 Total)

ACMA: 1	PSME: 12
ALRU: 39	ROPS: 1
POBA: 214	Shrubs: 1
POLO: 30	

Retain stumps for all obstructions and future obstructions removed on steep slopes or within wetlands.

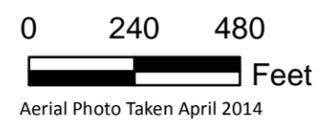


Figure 10
Sites P-3a & 3b Obstruction Removal Plan
Flight Corridor Safety Program
Port of Seattle

PLANT SCHEDULE

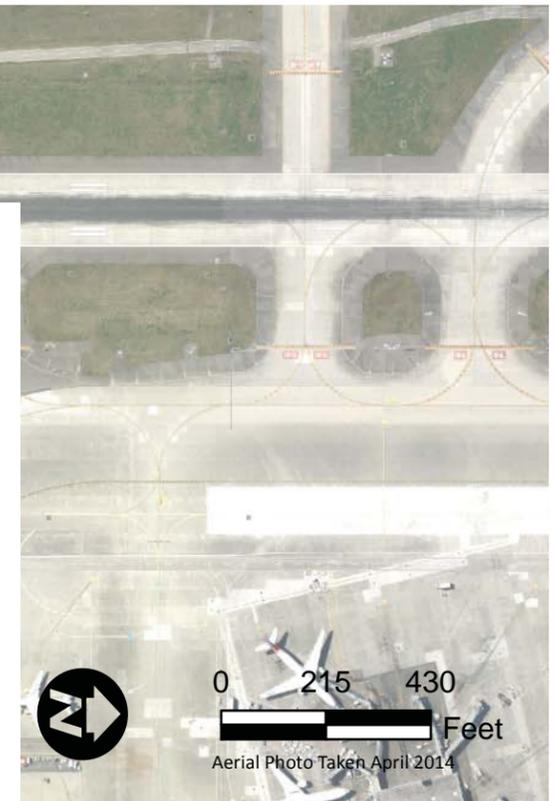
Common Name	Species Name	Size/Category	Spacing
Moderate Height Buffer Planting			
Red Alder	<i>Alnus rubra</i>	2 gallon/Tree	As Shown (15' O.C. minimum)
Oregon Ash	<i>Fraxinus latifolia</i>	1 gallon/Shrub	5' O.C.
Vine maple	<i>Acer circinatum</i>		5' O.C.
Oceanspray	<i>Holodiscus discolor</i>		5' O.C.
Pacific ninebark	<i>Physocarpus capitatus</i>		5' O.C.
Wild clustered rose	<i>Rosa pisocarpa</i>		5' O.C.
Western sword fern	<i>Polystichum munitum</i>	1 gallon/Groundcover	3' O.C.
Short Height Upland Planting			
Shore Pine	<i>Pinus contorta var. contorta</i>	2 gallon/Tree	As Shown (15' O.C. minimum)
Vine maple	<i>Acer circinatum</i>	1 gallon/Shrub	5' O.C.
Oceanspray	<i>Holodiscus discolor</i>		5' O.C.
Pacific ninebark	<i>Physocarpus capitatus</i>		5' O.C.
Nootka rose	<i>Rosa nutkana</i>		5' O.C.
Western sword fern	<i>Polystichum munitum</i>	1 gallon/Groundcover	3' O.C.



Common Name	Species Name	Size/Category	Spacing
Short Height Buffer Planting			
Shore Pine	<i>Pinus contorta var. contorta</i>	2 gallon/Tree	As Shown (15' O.C. minimum)
Pacific willow	<i>Salix lucida lasiandra</i>	Livestake (3 per cluster, spaced 5' O.C)	As Shown (15' O.C. between clusters)
Pacific ninebark	<i>Physocarpus capitatus</i>	1 gallon/Shrub	5' O.C.
Wild clustered rose	<i>Rosa pisocarpa</i>		5' O.C.
Western sword fern	<i>Polystichum munitum</i>	1 gallon/Groundcover	3' O.C.
Shrub Upland Planting			
Mock Orange	<i>Philadelphus lewisii</i>	2 gallon/Shrub	5' O.C.
Red flowering Currant	<i>Ribes sanguineum</i>		5' O.C.
Shrub Buffer Planting			
Pacific ninebark	<i>Physocarpus capitatus</i>	2 gallon/Shrub	5' O.C.
Wild clustered rose	<i>Rosa pisocarpa</i>		5' O.C.
Groundcover Planting			
Western sword fern	<i>Polystichum munitum</i>	1 gallon/Groundcover	3' O.C.
Giant Blue Wild Rye	<i>Elymus glaucus</i>		3' O.C.



Common Name	Species Name	Size/Category	Spacing
Wetland Planting			
Red Alder	<i>Alnus rubra</i>	2 gallon/Tree	As Shown (15' O.C.)
Oregon Ash	<i>Fraxinus latifolia</i>		As Shown (15' O.C. between clusters)
Pacific willow	<i>Salix lucida lasiandra</i>	Seed	As Shown (15' O.C. between clusters)
Blue wildrye	<i>Elymus glaucus</i>		25%
Western manna grass	<i>Glyceria occidentalis</i>		8%
Glyceria elata	<i>Tall manna grass</i>		10%
Tufted hairgrass	<i>Deschampsia cespitosa</i>		10%
Annual ryegrass	<i>Lolium multiflorum</i>		15%
Chewings red fescue	<i>Festuca rubra</i>		10%
Meadow foxtail	<i>Alopecurus pratensis</i>		10%
Bentgrass	<i>Agrostis tenuis</i>		10%
Alsike clover	<i>Trifolium hybridum</i>		2%
Upland Hydroseed (All Upland Planting Categories)			
Barkley's perennial ryegrass	<i>Lolium perenne</i>	Seed	30%
Red fescue	<i>Festuca rubra</i>		35%
Aurora hard fescue	<i>Festuca longifolia</i>		35%

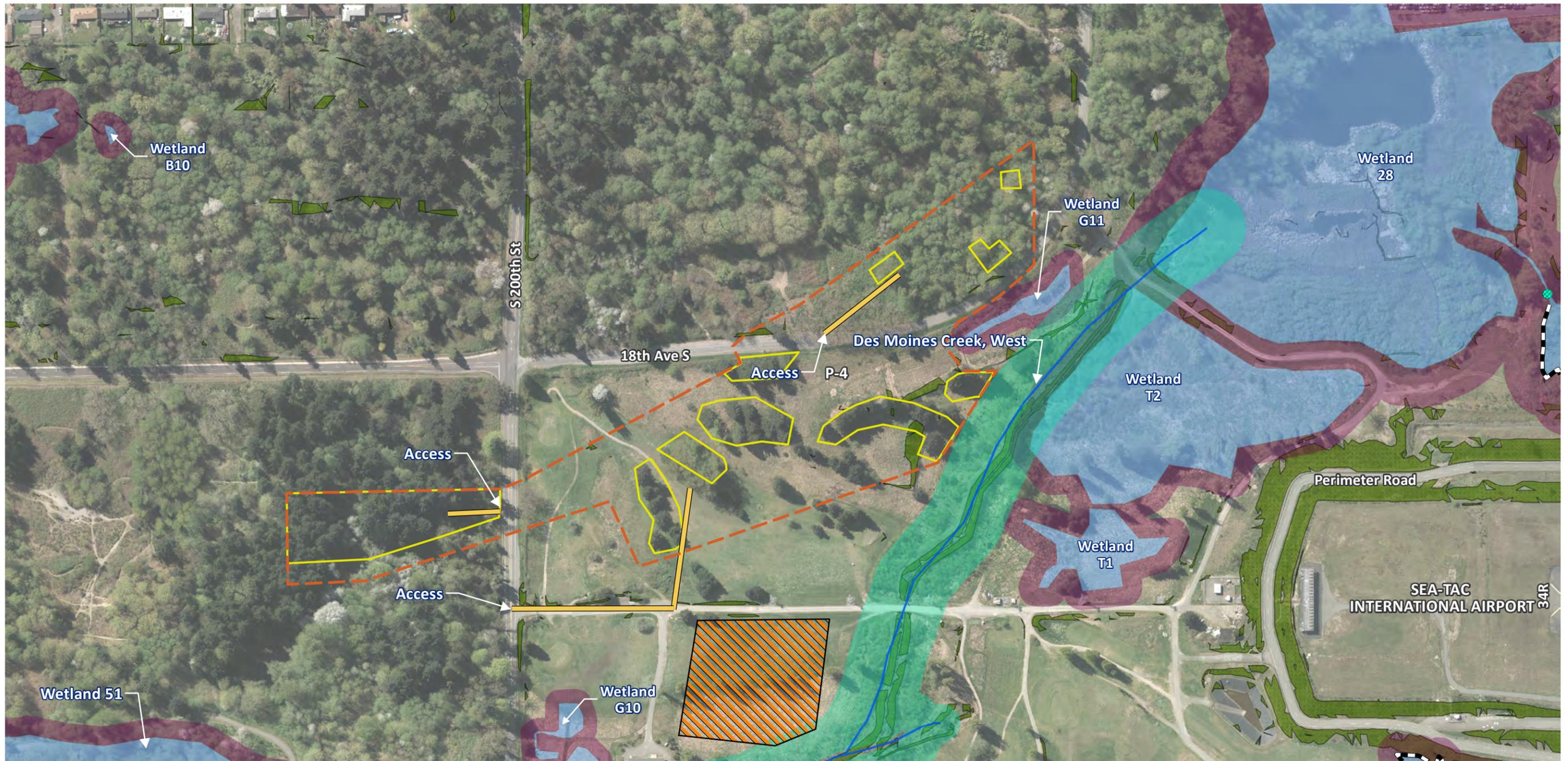


Q:\Jobs\PortofSeattle_0003\SD21-ObstructionRemoval\Maps\2016_04\Report_Figures\Figure 11 - Site P-3 Revegetation.mxd bsevertsen 4/21/2016 12:06:16 PM

 Site Boundary



Figure 11
 Sites P-3a & 3b Planting Plan
 Flight Corridor Safety Program
 Port of Seattle



Q:\Jobs\PortofSeattle_0003\SD21-ObstructionRemoval\Maps\2016_04\Report_Figures\Figure 12 - Site P-4 Site Preparation Plan.mxd bsevertsen 4/25/2016 12:22:32 PM

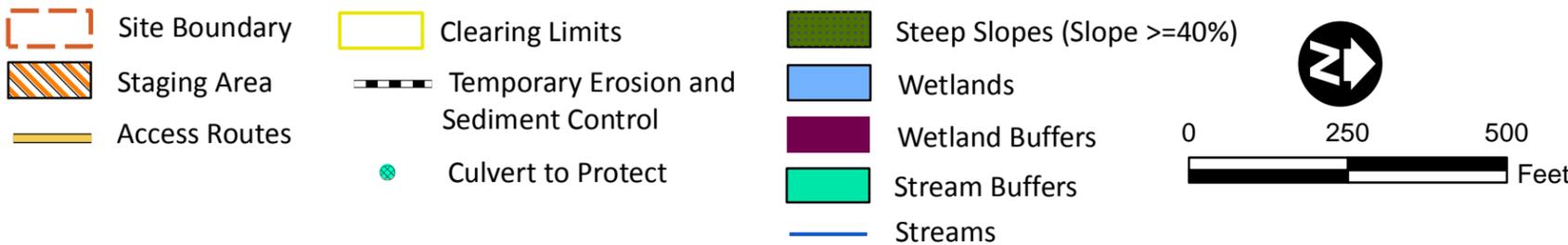
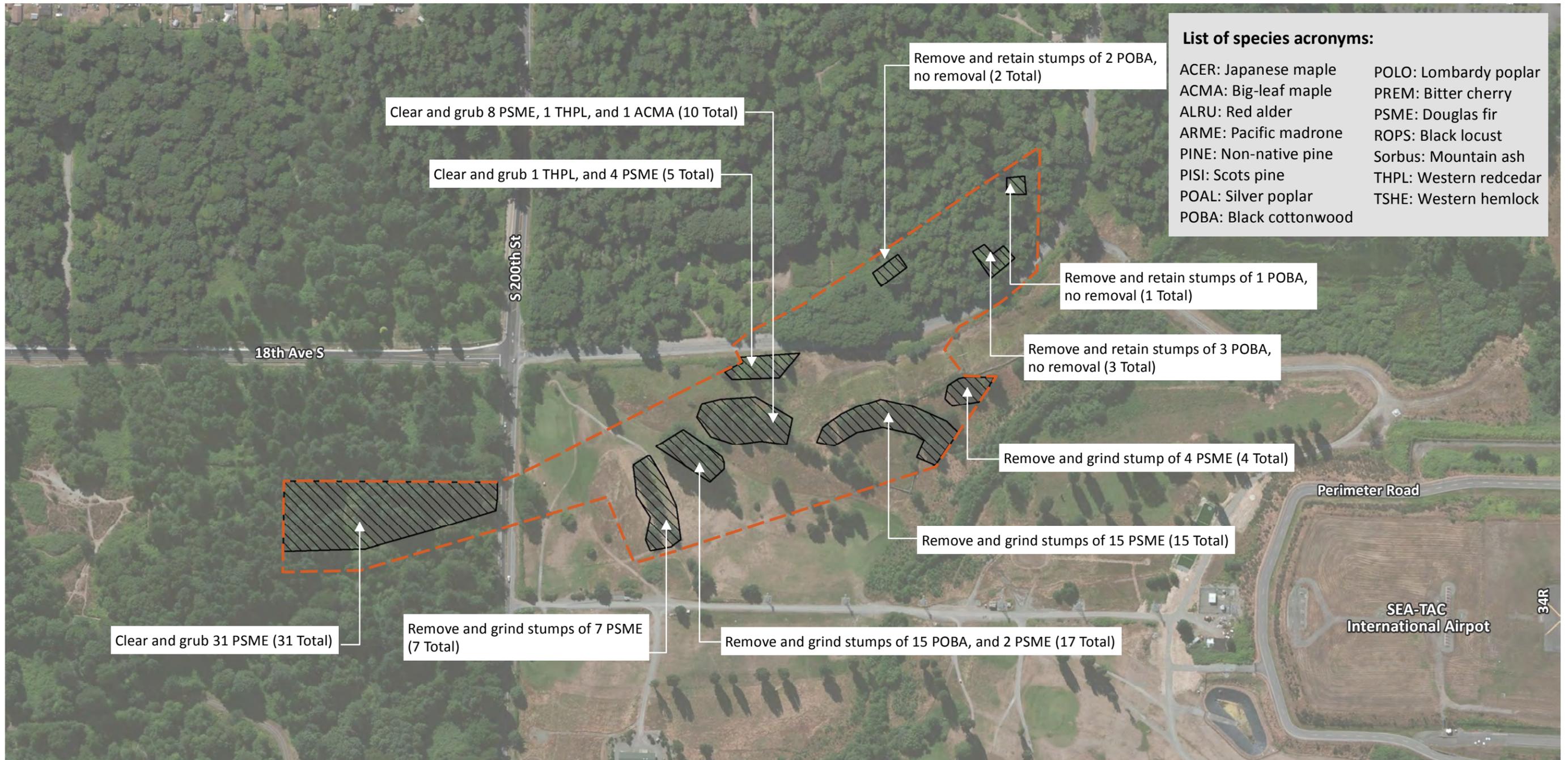


Figure 12

Site P-4 Access, Staging, and Site Preparation Plan
 Flight Corridor Safety Obstruction Management
 Port of Seattle



- List of species acronyms:**
- | | |
|------------------------|------------------------|
| ACER: Japanese maple | POLO: Lombardy poplar |
| ACMA: Big-leaf maple | PREM: Bitter cherry |
| ALRU: Red alder | PSME: Douglas fir |
| ARME: Pacific madrone | ROPS: Black locust |
| PINE: Non-native pine | Sorbus: Mountain ash |
| PISI: Scots pine | THPL: Western redcedar |
| POAL: Silver poplar | TSHE: Western hemlock |
| POBA: Black cottonwood | |

Q:\Jobs\PortofSeattle_0003\SD21-ObstructionRemoval\Maps\2016_04\Report_Figures\Figure 13 - Site P-4 Obstruction Removal and Material Disposal Plan.mxd bsevertsen 4/25/2016 12:43:28 PM

- Site Boundary
- Disposal Area
- Obstruction Removal / Invasive Species Clearing Extent

Tree Removal Summary (95 Total)

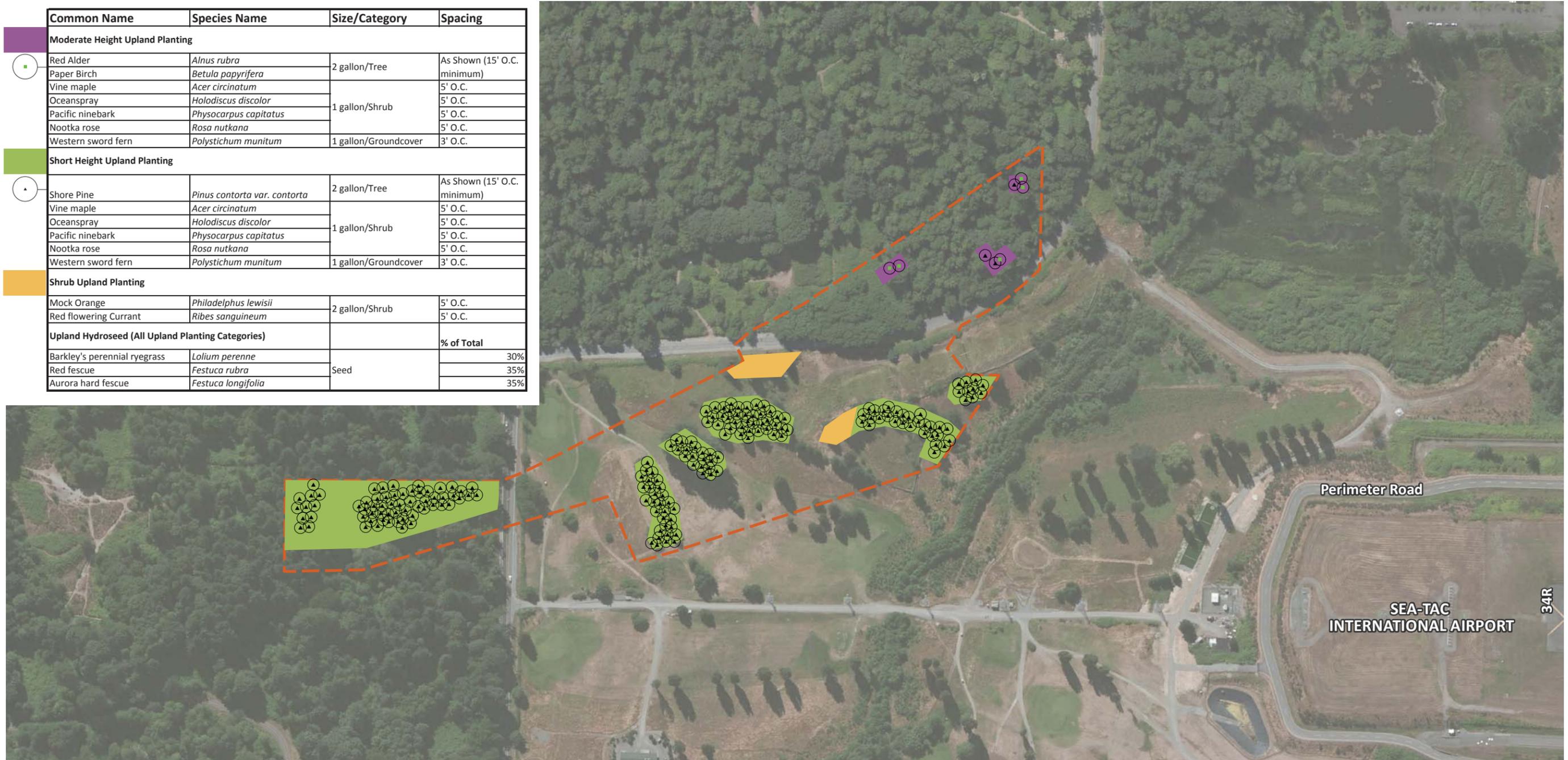
ACMA: 1
POBA: 21
PSME: 71
THPL: 2



Figure 13
 Site P-4 Obstruction Removal and Disposal Plan
 Flight Corridor Safety Obstruction Management
 Port of Seattle

PLANT SCHEDULE

Common Name	Species Name	Size/Category	Spacing
Moderate Height Upland Planting			
Red Alder	<i>Alnus rubra</i>	2 gallon/Tree	As Shown (15' O.C. minimum)
Paper Birch	<i>Betula papyrifera</i>		
Vine maple	<i>Acer circinatum</i>		5' O.C.
Oceanspray	<i>Holodiscus discolor</i>	1 gallon/Shrub	5' O.C.
Pacific ninebark	<i>Physocarpus capitatus</i>		5' O.C.
Nootka rose	<i>Rosa nutkana</i>		5' O.C.
Western sword fern	<i>Polystichum munitum</i>	1 gallon/Groundcover	3' O.C.
Short Height Upland Planting			
Shore Pine	<i>Pinus contorta var. contorta</i>	2 gallon/Tree	As Shown (15' O.C. minimum)
Vine maple	<i>Acer circinatum</i>		5' O.C.
Oceanspray	<i>Holodiscus discolor</i>	1 gallon/Shrub	5' O.C.
Pacific ninebark	<i>Physocarpus capitatus</i>		5' O.C.
Nootka rose	<i>Rosa nutkana</i>		5' O.C.
Western sword fern	<i>Polystichum munitum</i>	1 gallon/Groundcover	3' O.C.
Shrub Upland Planting			
Mock Orange	<i>Philadelphus lewisii</i>	2 gallon/Shrub	5' O.C.
Red flowering Currant	<i>Ribes sanguineum</i>		5' O.C.
Upland Hydroseed (All Upland Planting Categories)			% of Total
Barkley's perennial ryegrass	<i>Lolium perenne</i>		30%
Red fescue	<i>Festuca rubra</i>	Seed	35%
Aurora hard fescue	<i>Festuca longifolia</i>		35%



Q:\Jobs\PortofSeattle_0003\SD21-ObstructionRemoval\Maps\2016_04\Report_Figures\Figure 14 - Site P-4 Revegetation.mxd bsevertsen 4/21/2016 12:09:08 PM

 Site Boundary

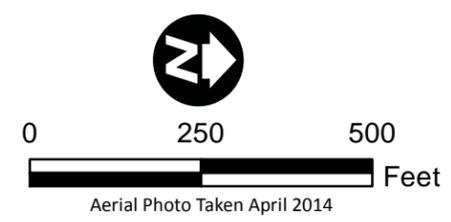


Figure 14
 Site P-4 Planting Plan
 Flight Corridor Safety Program
 Port of Seattle



Q:\Jobs\PortofSeattle_0003\SD21-ObstructionRemoval\Maps\2016_04\Report_Figures\Figure 15 - Site P-5 Site Preparation Plan.mxd bsevertsen 4/25/2016 12:47:06 PM

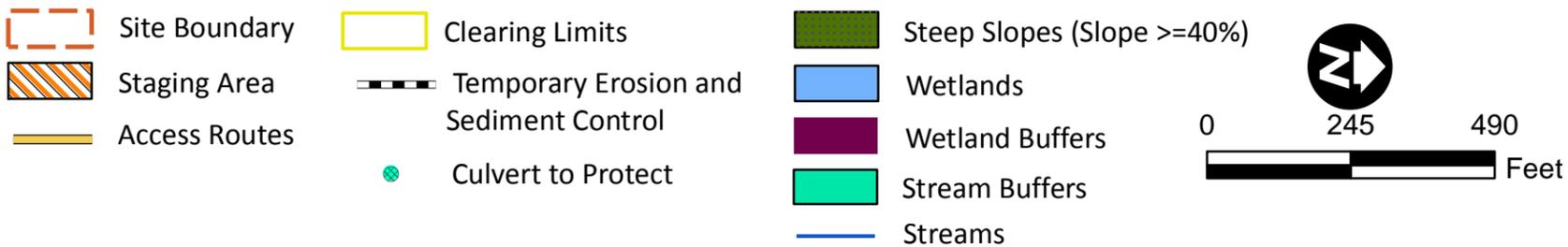
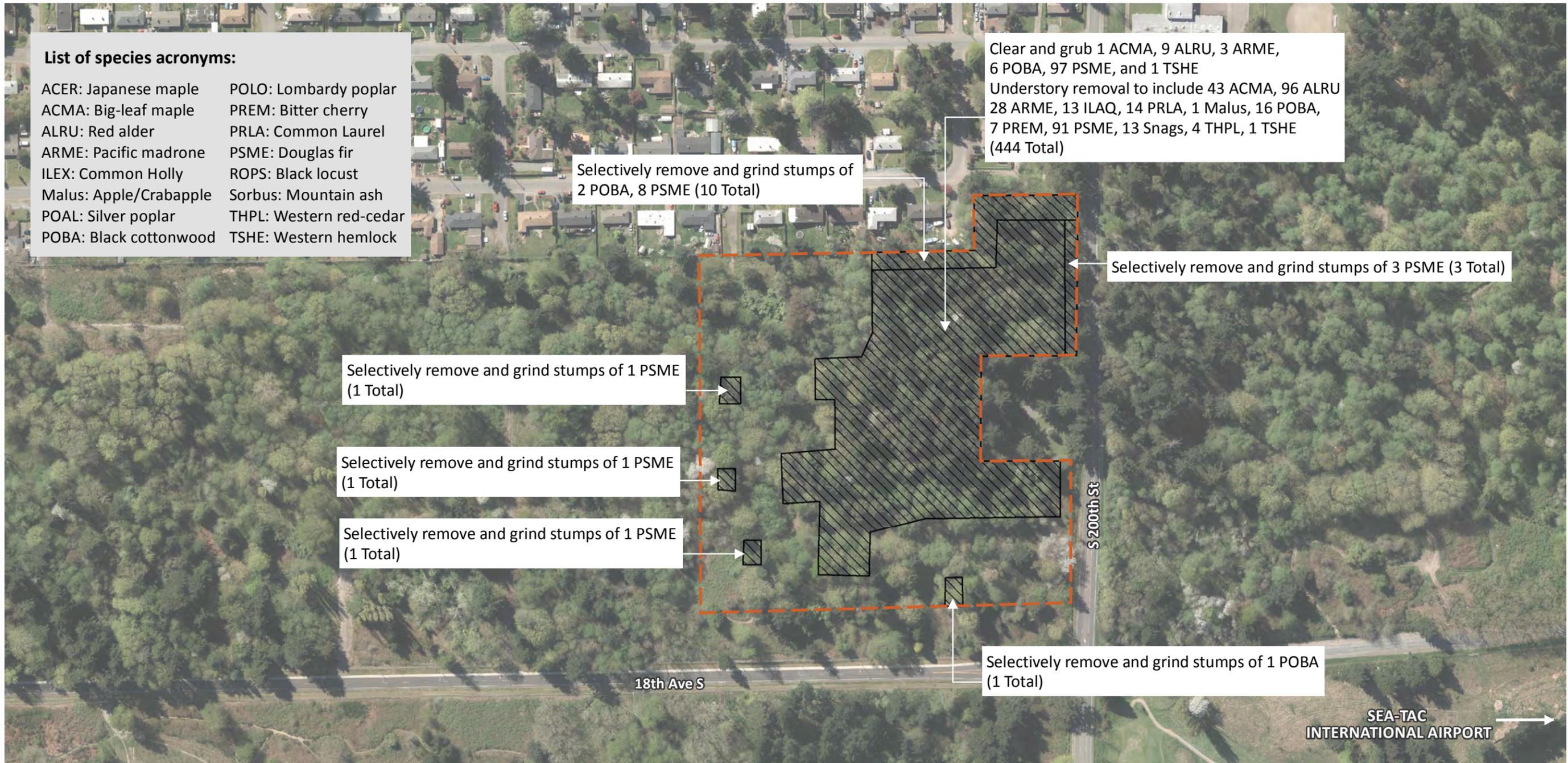


Figure 15
 Site P-5 Access, Staging, and Site Preparation Plan
 Flight Corridor Safety Program
 Port of Seattle



List of species acronyms:

- ACER: Japanese maple
- ACMA: Big-leaf maple
- ALRU: Red alder
- ARME: Pacific madrone
- ILEX: Common Holly
- Malus: Apple/Crabapple
- POAL: Silver poplar
- POBA: Black cottonwood
- POLO: Lombardy poplar
- PREM: Bitter cherry
- PRLA: Common Laurel
- PSME: Douglas fir
- ROPS: Black locust
- Sorbus: Mountain ash
- THPL: Western red-cedar
- TSHE: Western hemlock

Clear and grub 1 ACMA, 9 ALRU, 3 ARME, 6 POBA, 97 PSME, and 1 TSHE
 Understory removal to include 43 ACMA, 96 ALRU, 28 ARME, 13 ILAQ, 14 PRLA, 1 Malus, 16 POBA, 7 PREM, 91 PSME, 13 Snags, 4 THPL, 1 TSHE (444 Total)

Selectively remove and grind stumps of 2 POBA, 8 PSME (10 Total)

Selectively remove and grind stumps of 3 PSME (3 Total)

Selectively remove and grind stumps of 1 PSME (1 Total)

Selectively remove and grind stumps of 1 PSME (1 Total)

Selectively remove and grind stumps of 1 PSME (1 Total)

Selectively remove and grind stumps of 1 POBA (1 Total)

SEA-TAC INTERNATIONAL AIRPORT

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- Site Boundary
- Obstruction Removal / Invasive Species Clearing Extent

Tree Removal Summary (461 Total)

ACMA: 44	POBA: 25	THPL: 4
ALRU: 105	PREM: 7	TSHE: 2
ARME: 31	PRLA: 14	
ILEX: 13	PSME: 202	
Malus: 1	Snag: 13	

Implementation subject to removal of restrictive covenant.

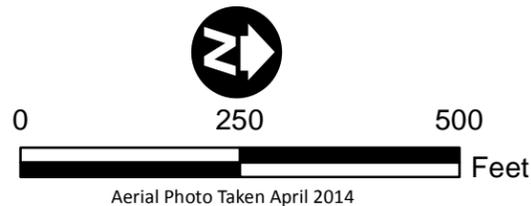


Figure 16
 Site P-5 Obstruction Removal Plan
 Flight Corridor Safety Program
 Port of Seattle

PLANT SCHEDULE

Common Name	Species Name	Size/Category	Spacing
Short Height Upland Planting			
Shore Pine	<i>Pinus contorta var. contorta</i>	2 gallon/Tree	As Shown (12' O.C. minimum)
Vine maple	<i>Acer circinatum</i>	1 gallon/Shrub	5' O.C.
Oceanspray	<i>Holodiscus discolor</i>		5' O.C.
Pacific ninebark	<i>Physocarpus capitatus</i>		5' O.C.
Nootka rose	<i>Rosa nutkana</i>	1 gallon/Groundcover	5' O.C.
Western sword fern	<i>Polystichum munitum</i>		3' O.C.
Shrub Upland Planting			
Mock Orange	<i>Philadelphus lewisii</i>	2 gallon/Shrub	5' O.C.
Red flowering Currant	<i>Ribes sanguineum</i>		5' O.C.
Groundcover Planting			
Western sword fern	<i>Polystichum munitum</i>	1 gallon/Groundcover	3' O.C.
Giant Blue Wild Rye	<i>Elymus glaucus</i>		3' O.C.
Upland Hydroseed (All Upland Planting Categories)			% of Total
Barkley's perennial ryegrass	<i>Lolium perenne</i>	Seed	30%
Red fescue	<i>Festuca rubra</i>		35%
Aurora hard fescue	<i>Festuca longifolia</i>		35%



Q:\Jobs\PortofSeattle_0003\SD21-ObstructionRemoval\Maps\2016_04\Report_Figures\Figure 17 - Site P-5 Revegetation.mxd bsevertsen 4/21/2016 12:11:23 PM

 Site Boundary

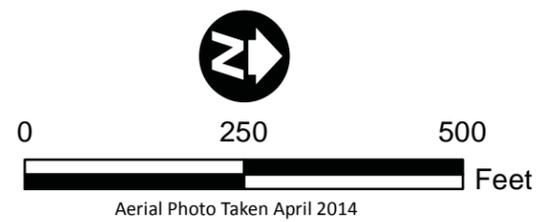
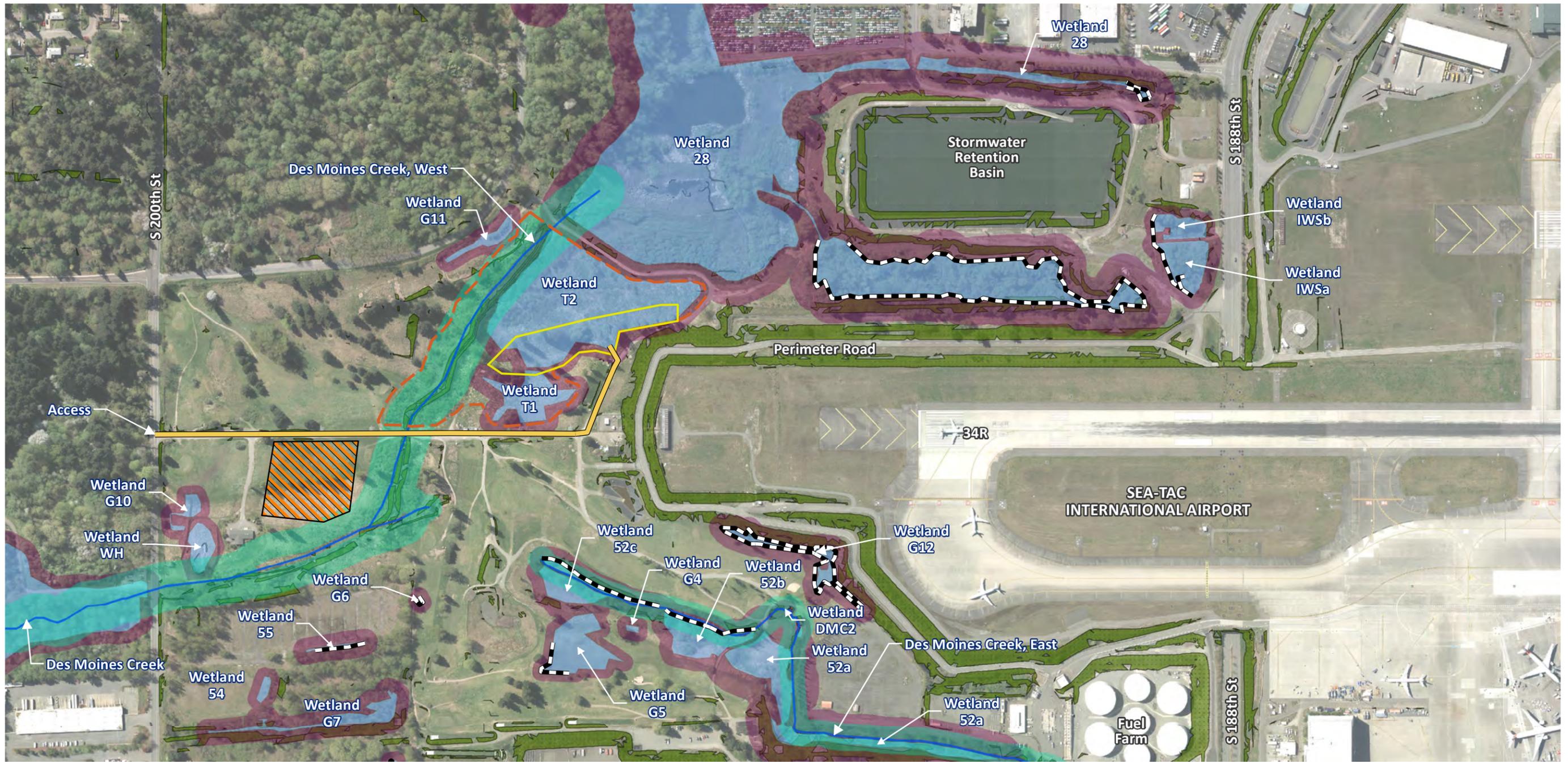


Figure 17
 Site P-5 Planting Plan
 Flight Corridor Safety Program
 Port of Seattle



Q:\Jobs\PortofSeattle_0003\SD21-ObstructionRemoval\Maps\2016_04\Report_Figures\Figure 18 - Site P-6 Site Preparation Plan.mxd bsevertsen 4/25/2016 2:10:00 PM

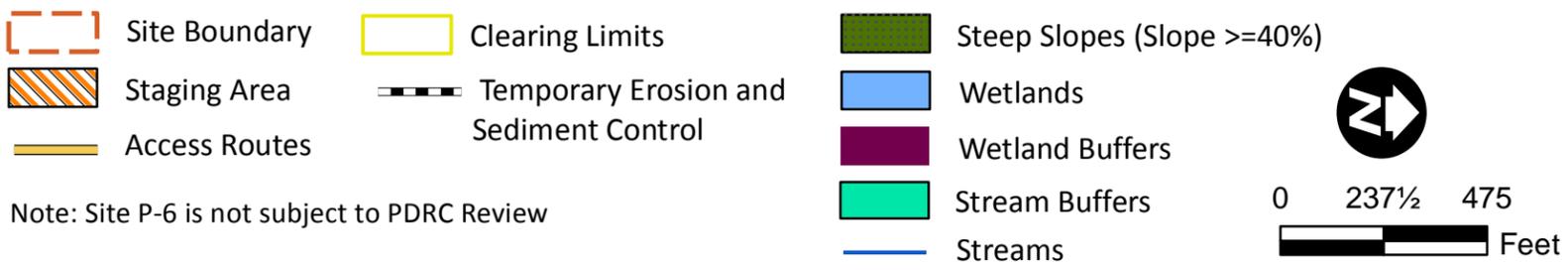


Figure 18
 Site P-6 Access, Staging, and Site Preparation Plan
 Flight Corridor Safety Program
 Port of Seattle

List of species acronyms:

- | | |
|------------------------|-------------------------|
| ACER: Japanese maple | POLO: Lombardy poplar |
| ACMA: Big-leaf maple | PREM: Bitter cherry |
| ALRU: Red alder | PSME: Douglas fir |
| ARME: Pacific madrone | ROPS: Black locust |
| PINE: Non-native pine | Sorbus: Mountain ash |
| PISI: Scots pine | THPL: Western red-cedar |
| POAL: Silver poplar | TSHE: Western hemlock |
| POBA: Black cottonwood | |



Q:\Jobs\PortofSeattle_0003\SD21-ObstructionRemoval\Maps\2016_04\Report_Figures\Figure 19 - Site P-6 Obstruction Removal and Material Disposal Plan.mxd bsevertsen 4/25/2016 2:15:07 PM

-  Site Boundary
-  Obstruction Removal / Invasive Species Clearing Extent

Note: Site P-6 is not subject to PDRC Review

Tree Removal Summary (18 Total)

- ACMA: 2
- POBA: 1
- POLO: 15

Retain stumps for all obstructions and future obstructions removed on steep slopes or within wetlands.

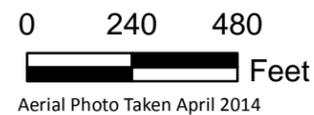


Figure 19

**Site P-6 Obstruction Removal and Disposal Plan
Flight Corridor Safety Program
Port of Seattle**

PLANT SCHEDULE

Common Name	Species Name	Size/Category	Spacing
Short Height Buffer Planting			
Shore Pine	<i>Pinus contorta var. contorta</i>	2 gallon/Tree	As Shown (15' O.C. minimum)
Pacific willow	<i>Salix lucida lasiandra</i>	Livestake (3 per cluster, spaced 5' O.C)	As Shown (15' O.C. between clusters)
Oceanspray	<i>Holodiscus discolor</i>		
Pacific ninebark	<i>Physocarpus capitatus</i>	1 gallon/Shrub	5' O.C.
Wild clustered rose	<i>Rosa pisocarpa</i>		
Western sword fern	<i>Polystichum munitum</i>	1 gallon/Groundcover	3' O.C.
Wetland Planting			% of Total
Pacific willow	<i>Salix lucida lasiandra</i>	Livestake (3 per cluster, spaced 5' O.C)	As Shown (15' O.C. between clusters)
Blue wildrye	<i>Elymus glaucus</i>		
Western mangrass	<i>Glyceria occidentalis</i>	Seed	25%
Glyceria elata	<i>Tall mannagrass</i>		8%
Tufted hairgrass	<i>Deschampsia cespitosa</i>		10%
Annual ryegrass	<i>Lolium multiflorum</i>		10%
Chewings red fescue	<i>Festuca rubra</i>		15%
Meadow foxtail	<i>Alopecurus pratensis</i>		10%
Bentgrass	<i>Agrostis tenuis</i>		10%
Alsike clover	<i>Trifolium hybridum</i>		2%



Q:\Jobs\PortofSeattle_0003\SD21-ObstructionRemoval\Maps\2016_04\Report_Figures\Figure 20 - Site P-6 Revegetation.mxd bsevertsen 4/21/2016 12:16:52 PM

Site Boundary

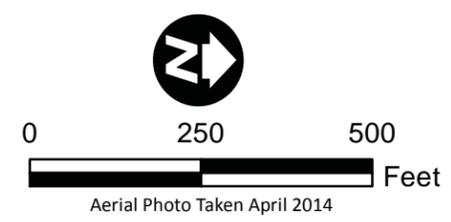


Figure 20
 Site P-6 Planting Plan
 Flight Corridor Safety Program
 Port of Seattle



Q:\Jobs\PortofSeattle_0003\SD21-ObstructionRemoval\Maps\2016_04\Report_Figures\Figure 21 - Obstruction Management Phasing Plan.mxd bsevertsen 4/21/2016 1:07:44 PM

- Phase 1
- Phase 2
- Phase 3
- City Boundary



0 1,125 2,250
 Feet
 Aerial Photo Taken April 2014



Figure 21
 Obstruction Management Phasing Plan
 Flight Corridor Safety Program
 Port of Seattle

APPENDIX A
APPROVED VEGETATION LIST

Appendix A
Approved Vegetation List

Common Name	Scientific Name	Max. Height	Canopy Width	Preferred Site Conditions
Moderately Tall Conifer Trees				
Northern Japanese Hemlock	<i>Tsuga diversifolia</i>	35-60'	25'	Moist but well drained soils, shade to part shade (not in sun)
Weeping Giant Sequoia	<i>Sequoiadendron giganteum</i> 'Pendulum'	45-60'	4'	Sun, well-drained soil
Korean Fir	<i>Abies koreana</i>	30-50'	5'	Full sun, well drained soil, slower growing
Golden Japanese Cedar	<i>Cryptomeria japonica</i> 'Sekkan-sugi'	25-40'	10'	Full sun to dappled shade, prefers well-drained soils but will tolerate clay
Serbian Spruce	<i>Picea omorika</i>	45-60'	10'	Grows best in full sun, prefers well-drained soils but will tolerate clay
Limber Pine	<i>Pinus flexilis</i> 'Vanderwolf's Pyramid'	25-40'	10'	Grows best in full sun, prefers well-drained soils, tolerates restricted root zones (good near patios)
Shore Pine	<i>Pinus contorta</i> var. <i>contorta</i>	40-50'	25'	Grows best in full sun, prefers well-drained soils, tolerates restricted root zones (good near patios)
Irish Yew	<i>Taxus baccata</i> 'Fastigiata'	30-50'	4'	Full sun or shade, prefers well-drained soils, works well as a hedge
Moderately Tall Deciduous Trees				
Trident Maple	<i>Acer buergerianum</i>	30-50'	30'	Full sun to open shade in well-drained soil
Japanese Maple	<i>Acer palmatum</i>	30-40'	30'	Full sun to open shade, tolerant of many soil conditions
Pagoda Dogwood	<i>Cornus alternifolia</i>	30-40'	30'	Prefers light or open shade sites with moist or well-drained soils
Kobus Magnolia	<i>Magnolia kobus</i>	30-50'	15'	Easy to grow, plant in sheltered areas to protect flowers
Hybrid White Dogwood	<i>Cornus</i> 'Eddie's White Wonder'	40-50'	20'	Prefers rich well-drained soil but tolerant of clay, prefers full sun to light shade and good circulation
Sweet Bay Magnolia	<i>Magnolia virginiana</i>	30-40'	18'	Easy to grow, plant in sheltered areas to protect flowers
Persian Ironwood	<i>Parrotia persica</i> 'Vanessa'	40-50'	20'	Grows in full sun to dappled shade, fall color is best in sun, grows best in well-drained soils but will tolerate moisture/clay
Orangebark Stewartia	<i>Stewartia monadelphica</i>	50-60'	15'	Grows best in light to open shade, in rich well-drained or sandy soils, prefers irrigation in summer
Japanese Stewartia	<i>Stewartia pseudocamellia</i>	50-60'	12'	Grows best in light to open shade, in rich well-drained or sandy soils, prefers irrigation in summer
Hybrid Serviceberry	<i>Amelanchier</i> × <i>grandiflora</i> 'Autumn Brilliance'	30-40'	25'	Prefers full sun but tolerates light shade, prefers well-drained soils but tolerates clay
Goldenrain Tree	<i>Koelreuteria paniculata</i>	30-40'	25'	Prefers full sun and well-drained soils but tolerant of clay
Black Gum	<i>Nyssa sylvatica</i>	50-60'	20'	Prefers full sun to light or open shade, adaptable to many soil conditions from wet to well-drained

EXHIBIT 9

APPENDIX C

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	Phase 1 will remove 1,167 trees on 27 acres.	Removal of existing trees will cause a temporary release of sequestered carbon, but this carbon will be sequestered again by re-planting more than double the number of removed trees plus additional shrubs. Therefore a lifecycle net reduction in carbon emissions is expected from this project	After the removal of obstructions, approximately 2,400 trees will be replanted - 2,492 trees. Shrubs and hydro seeding are intended to revegetate areas where ground vegetation or understory impacts occur during removal activity in densely treed areas.
Purchased Electricity and Steam	Not Applicable	Not Applicable	
Construction	Phase 1 will remove 1,167 trees on 27 acres. After the removal of obstructions, new trees and vegetation will be replanted - 2,492 trees and 6,379 shrubs.	Temporary/short-term use associated with construction related emissions is not expected to be significant.	Contractor performing construction/demolition would be required to maintain and repair all equipment in a manner that reasonably minimizes emissions.
Extraction 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?
Processing of Purchased Materials	Not Applicable	Not Applicable	
Transportation of Purchased Materials	Not Applicable	Not Applicable	
Employee Commute	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	Not Applicable	Not Applicable	

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

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

EXHIBIT 10

December 2015

PORT OF SEATTLE



Conceptual Plan Seattle-Tacoma International Airport Flight Corridor Safety Obstruction Management Program

Prepared by

Anchor QEA

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CONCEPTUAL PLAN

SEATTLE-TACOMA INTERNATIONAL AIRPORT FLIGHT CORRIDOR SAFETY OBSTRUCTION MANAGEMENT PROGRAM

Prepared for

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720 Olive Way, Suite 1900

Seattle, Washington 98101

Graphics prepared by Port of Seattle

December 2015

TABLE OF CONTENTS

1	OBSTRUCTION MANAGEMENT PROGRAM OVERVIEW AND PURPOSE.....	1
2	BACKGROUND.....	3
3	GUIDING OBJECTIVES	4
4	EXISTING SITE CONDITIONS	6
4.1	Property Ownership.....	6
4.2	Site Characteristics	7
4.2.1	Port-owned Properties.....	7
4.2.2	WSDOT Properties.....	10
4.2.3	Other Public Properties	11
4.2.4	Private Properties.....	11
4.3	Critical Areas	11
4.4	Site Access.....	12
5	OBSTRUCTION REMOVAL METHODS.....	13
6	RECOMMENDED APPROACH TO OBSTRUCTION REMOVAL	21
6.1	Steps to Implementing the Obstruction Removal Plan.....	22
7	REFERENCES	23

List of Tables

Table 1	Number of Obstructions by Jurisdiction	6
Table 2	Suitability and Comparison of Potential Methods for Obstruction Removal.....	14
Table 3	Suitability and Comparison of Potential Methods for Material Disposal from Obstruction Removal Activities.....	16
Table 4	Suitability and Comparison of Methods for Site Treatment (Minimizing Potential Future Obstructions, Stabilizing Site)	18
Table 5	Suitability and Comparison of Methods for Monitoring.....	20

List of Figures

- Figure 1 Project Vicinity
- Figure 2 Port-Owned Site Locations
- Figure 3 Obstructions Outside Port Property

List of Appendices

- Appendix A Potential Environmental Approvals and Permit Matrix

LIST OF ACRONYMS AND ABBREVIATIONS

ACM	Airport Certification Manual
CFR	Code of Federal Regulations
FAA	Federal Aviation Administration
ILA	Interlocal Agreement
LiDAR	Light Detection and Ranging
Port	Port of Seattle
SR	State Route
STIA	Seattle-Tacoma International Airport
WSDOT	Washington State Department of Transportation

1 OBSTRUCTION MANAGEMENT PROGRAM OVERVIEW AND PURPOSE

As a condition of the Federal Aviation Administration (FAA)-issued Airport Operating Certificate, the Port of Seattle is required to ensure there are no obstacles or obstructions on or around the Seattle-Tacoma International Airport (STIA) that could affect aviation safety. 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 Code of Federal Regulations [CFR] Part 77).

In addition to the CFR Part 77 obstruction standards, the following regulations and guidance documents require the Port of Seattle (Port) to address the obstruction removal:

- STIA Airport Certification Manual (ACM), especially with respect to the Port’s compliance with 14 CFR Part 139.331 – Certification of Airports: “each object in each area within its authority... is removed, marked, or lighted...”
- FAA Engineering Brief 91 – Management of Vegetation in the Airport Environment: “...it is recommended to protect terminal airspace by clearing bushes and trees that penetrate or have the potential to penetrate any applicable navigable surfaces.”
- FAA Airport Grant Assurance 20: “It [the airport] will take appropriate action to assure that such terminal airspace as is required to protect instrument and visual operations to the airport (including established minimum flight altitudes) will be adequately cleared and protected by removing, lowering, relocating, marking, or lighting or otherwise mitigating existing airport hazards and by preventing the establishment or creation of future airport hazards.”
- FAA Airport Grant Assurance 21: “It [the airport] will take appropriate action, to the extent reasonable, including the adoption of zoning laws, to restrict the use of land adjacent to or in the immediate vicinity of the airport to activities and purposes compatible with normal airport operations, including landing and takeoff of aircraft.”
- FAA Advisory Circular 150/5300.13A – Maintenance of obstacle clearance surfaces: “The airport operator has an ongoing obligation to review the surface(s) for obstructions...”
- Revised Code of Washington Section 14.12.020 – Airport hazards contrary to public interest

- STIA Strategic Goals and Objectives – Goal 1: “Ensuring safe and secure operations” (Port of Seattle 2015a)
- STIA Landscape Design Standards XII(3)c (page 29): “Trees shall be removed ... when [they] exceed the maximum allowable height requirements imposed by the FAA”. These 2006 landscape standards are part of the City of SeaTac and Port of Seattle Interlocal Agreement (ILA).

The purpose of this Conceptual Plan is to identify and compare alternatives for removing existing obstructions at STIA, both on and off Port-owned properties, and to recommend an approach to obstruction removal. This Conceptual Plan provides the background and guiding objectives for the flight corridor safety obstruction management program. It also summarizes the existing site conditions and how these conditions affect obstruction removal strategies. This Conceptual Plan provides the basis for communication with Port leadership and the FAA. It can also aid preliminary discussions with the community, regulators, and agency representatives concerning the planning, environmental review, and permitting that may be necessary during implementation.

2 BACKGROUND

In 2014, the Port conducted a comprehensive obstruction analysis that used Light Detection and Ranging (LiDAR) remote sensing and imaging technology to identify obstructions that extend into, or very near (within a 6-foot threshold of), navigable airspace. The imaging process identified more than 1,600 obstructions. These obstructions are primarily trees or stands of trees that are located on Port-owned properties, other public properties (owned by the Washington State Department of Transportation [WSDOT], the City of SeaTac, or the City of Burien), and commercial and private lands in the cities of Burien, SeaTac, and Des Moines. Figure 1 illustrates the project vicinity, including the airport properties and surrounding jurisdictions.

Following the LiDAR survey, the Port mapped the location of the obstructions, including 23 individual sites on Port-owned property (Figure 2). An estimated three-fourths of the mapped obstructions are on Port-owned properties and other public properties, and the remaining obstructions are on private and commercial properties. With this information, the Port is now evaluating options for removing the obstructions.

3 GUIDING OBJECTIVES

The objectives of the obstruction management program will be used to evaluate the suitability of obstruction removal alternatives. The objectives are as follows:

1. **Comply with FAA Operating Rules and Guidelines.** The Port will demonstrate to the FAA that obstruction standards, vegetation management, grant assurances, and wildlife hazard management requirements are being met. Failure to meet these requirements may result in changes to operations including higher approach category minima, loss of approaches, departure restrictions, (FAA 2014); failure to meet the intent of the STIA ACM and its associated Wildlife Hazard Management Plan; and potential forfeiture of FAA funds.
2. **Provide Consistency with Airport Policies.** The Port will follow airport policies in the planning and implementation of the obstruction management program. Certain airport rules and regulations relate (or may relate) to obstruction removal, including Environmental (Section 4) and Landscaping and Water Management (Section 5G), which define best management practices for work in critical areas, planting requirements, emergency removal of aviation hazards, and work within restricted areas, including mitigation sites (Port of Seattle 2015b). The STIA Century Agenda strategic objectives that may relate to the implementation details of this program include using the Port's influence to promote small business growth and workforce development, and being the greenest, most energy-efficient port in North America (Port of Seattle 2015c). The Environmental Strategy Plan for STIA includes a number of goals, under the Managing Natural Resources priority, that may relate to obstruction removal; these include: increasing the solid waste recycling rate (Goal 10), reducing land clearing and construction debris generated by the airport and its contractors (Goal 11), achieving and maintaining best management practices for water quality treatment and flow control (Goal 14), improving habitat and protection for native species not in conflict with aviation safety, and managing hazardous wildlife with biologically sound approaches (Goal 15; Port of Seattle 2009).

3. **Prioritize Port-owned Properties.** The Port will consider land ownership in prioritizing obstructions for removal. The process to remove obstructions on properties that are not Port-owned will likely take additional time for coordination with local jurisdictions and property owners (Appendix A).

4. **Comply with Federal, State, and Local Laws and Land Use Requirements.** Through the obstruction management program, the Port will avoid and minimize impacts to critical areas and will comply with federal laws, state laws, and local land use requirements. Where impacts to critical areas may be unavoidable, the Port will ensure consistency with development standards for tree and vegetation removal and revegetation.

5. **Provide Revegetation Benefits.** The Port recognizes that replacing obstructions with native vegetation provides a number of benefits, including the following:
 - Generation and retention of soil, as well as protection of slopes from erosion and land movement
 - Water quality improvements to slow stormwater movement and filter toxins
 - Aesthetic qualities
 - Control of non-native plant establishment

Port Commissioners have requested no net loss of trees will occur through the obstruction management program (Port of Seattle 2015d); revegetation efforts to achieve this goal will comply with all Port policies.

6. **Minimize Costs for Removal and Long-term Monitoring.** The Port will seek to minimize costs for obstruction removal and ongoing maintenance. This will guide the removal techniques, revegetation, sequencing of construction, and identification of opportunities for material reuse. This effort may also include the proactive removal of vegetation that is nearing obstruction status and is in the vicinity of current obstructions.

4 EXISTING SITE CONDITIONS

4.1 Property Ownership

King County parcel data were overlaid with the preliminary obstruction points derived from the Port's 2014 LiDAR analysis. As shown in Figure 3 and Table 1 these obstructions are located in the cities of Burien, SeaTac, and Des Moines. The identified obstructions are found on Port-owned properties, other public properties, and commercial and private lands.

Table 1
Number of Obstructions by Jurisdiction

Jurisdiction	Obstruction Counts from LiDAR Survey
City of Burien	78
City of Des Moines	57
City of SeaTac	1301 ¹

Notes:

1. This total includes 387 obstructions on Port-owned property.
LiDAR = Light Detection and Ranging

The obstructions found on public property include a City of Seattle reservoir parcel and WSDOT-managed rights-of-way. Some of the obstructions on WSDOT property occur within areas planned for the State Route (SR) 509 extension project.

Obstructions on airport property lie within the city of SeaTac; the Port and the City of SeaTac currently have an ILA in place that provides for complementary land use, landscaping, zoning, and surface water management provisions that were agreed upon by both parties (City of SeaTac and Port of Seattle 2006). Obstruction removal on Port-owned property will be consistent with the provisions of the ILA.

Implementation of the flight corridor safety obstruction management program on non-Port-owned property will require coordination between the Port, local jurisdictions, and property owners to ensure safe navigable airspace and compatible land uses.

4.2 Site Characteristics

While most of the obstructions have been identified as trees, the height, health, species, number of trees per obstruction, and associated land use vary by site. The following sections provide a general description of the known site conditions. Fieldwork is currently underway to fully characterize each obstruction and the site conditions. The Port-owned obstruction sites are shown in Figure 2. The locations of obstructions on non-Port-owned properties are shown in Figure 3.

4.2.1 Port-owned Properties

The Port-owned obstruction sites (numbered 1 through 23) are located around the north, west, and south sides of STIA.

Site 1 contains steep slopes with an adjacent wetland and regulatory buffer; it is located at the north end and is adjacent to a stormwater detention pond situated upslope of the site. The tree species in this area include large cottonwoods (*Populus balsamifera* ssp. *trichocarpa*) and moderately dense stands of alder (*Alnus rubra*). The groundcover within the interior sections of the site includes English ivy (*Hedera helix*), which has been controlled by Port maintenance and is found mostly on the ground rather than climbing up tree trunks.



Site 1 located north of STIA

Sites 2 through 10 are found near the Port's west-side office, to the west of the airport and to the east of SR 509 and Des Moines Memorial Drive. This area includes two stormwater ponds, one wetland complex, a number of steep slope areas, and is adjacent to restrictive covenant lands to the north. Sites 5 and 10, which are near the wetland area and steep slopes, mostly contain deciduous maple (*Acer macrophyllum*), alder, and cottonwood trees (though some conifer species are also present).



Site 5 looking north with nearby stormwater pond, Airport Operating Area in the background

The steep slope areas here have Himalayan blackberry (*Rubus armeniacus*) growing in dense brambles. The areas around the stormwater ponds (Sites 5C and 9) have mown turf groundcover, and the ponds are covered with nets to deter waterfowl. Sites 2, 3, and 4 include former residential parcels that were purchased by the Port as part of the third runway project. These areas contain a number of large conifer trees and remnant ornamental (possibly fruit-bearing) plantings from the historical residential uses that occurred here.

Sites 11 through 23 are south of the airport. Site 11 includes a windrow (single row of trees planted very closely together) of Lombardy poplars (*Populus nigra 'Italica'*). There are trees near this site that, given their proximity to the airport runways, will likely become obstructions in the next few years.



**Looking west with Site 11 in the background
and potential future obstructions in the foreground**

Site 13 contains a relatively intact wetland and stream complex. This site contains alder stands and relatively diverse, native shrub and groundcover layers, including healthy stands of red-osier dogwood (*Cornus sericea*). The remaining obstructions in this area are within a former golf course.

Site 23 contains a large tract of forested land, which includes publicly accessible walking trails that are well used by the community. This site contains a number of non-native species (e.g., English ivy, holly [*Ilex aquifolium*]). The tree species on the site include native vegetation and ornamental landscaping, which indicates the historical residential use of the property. Site 24, located to the east of the prison access road, contains a similar mix of species, but is not accessible to the public.



Looking north at Site 23 (left) and obstructions on WSDOT property (right; Section 4.2.2)

4.2.2 WSDOT Properties

Sites that contain obstructions on WSDOT-owned land include the vegetated shoulder of SR 509, located to the west of STIA, and a large parcel south of the airport that is planned to be used in the SR 509 extension project. The existing SR 509 shoulders near the airport are elevated between 20 and 35 feet above the highway. While fieldwork has not been completed in this area, analyses of street view and aerial imagery suggest that the obstructions in this area are predominately deciduous trees, though some of the larger obstructions (e.g., 60 feet tall) are conifer, Douglas fir (*Pseudotsuga menziesii*) species. The WSDOT area south of the airport is located across South 200th Street from the Port-owned

Site 23. This parcel, similar to the Port-owned site, contains a large tract of forested land with a mix of native and non-native species.

4.2.3 Other Public Properties

Obstructions found on municipal land occur predominately within city rights-of-way. In addition, one vacant parcel within the city of SeaTac contains two obstructions per the LiDAR analysis. From analyses of street view imagery, these obstructions appear to be conifers. Seattle Public Utilities' water reservoir, located northeast of the airport, contains a number of obstructions. The parcel appears to be parkland, with obstructions that are a mix of deciduous and conifer trees. Finally, the City of Burien's Highline School District has two parcels containing obstructions. One site is located to the west of the airport along the western shoulder of SR 509; the obstructions are at the edge of a school bus parking lot. The second parcel is located to the south of the airport and northwest of the Port-owned Site 23. This parcel contains an old school building, which appears to be used as offices and storage space for the school district.

4.2.4 Private Properties

Obstructions on private land are found on parcels zoned for commercial, institutional and worship, and residential uses. Within the city of SeaTac, obstructions are found within a number of small residential parcels east of the Seattle Public Utilities' water tower (northeast of the airport), and also within isolated residential properties southwest of STIA. Other obstruction locations in SeaTac include two commercial car rental sites, a cemetery, isolated vacant parcels, and a church.

Private parcels with obstructions in the cities of Burien and Des Moines appear to consist entirely of residential uses. One of the larger sites in the city of Des Moines appears to be vacant, but is owned by a real estate developer.

4.3 Critical Areas

Several obstructions occur within or adjacent to a critical area, including wetlands, streams, and steep slopes, as well as their regulatory buffers. Data on obstructions within or near critical areas are currently available for obstruction sites on Port-owned properties and other properties

within the city of SeaTac. The obstruction counts presented are based on the LiDAR analysis. Because ground truthing fieldwork is not yet complete, these are estimated counts.

Approximately 25% of the identified obstructions on Port-owned properties and within the city of SeaTac are found within a critical area or adjacent areas as follows:

- Approximately 90 obstructions are located within wetlands or wetland buffers, and 30 more obstructions are within 50 feet of these areas.
- Approximately 2 obstructions are located within stream buffers, and 2 additional obstructions are within 50 feet of these areas.
- Approximately 40 obstructions are located on a steep slope area, and 240 more obstructions are within 50 feet of a steep slope area; however, many of the steep slope areas include engineered slopes, which are more stable than naturally occurring steep slopes and will therefore have less restrictions for obstruction removal.

The Port will obtain critical areas data for other obstruction within the cities of Des Moines and Burien in early December, and the forthcoming Implementation Plan will confirm and report the number of obstructions within critical areas for the entire program area. This critical areas data will be verified during upcoming (early 2016) field characterizations of obstructions and site conditions for private properties.

4.4 Site Access

The majority of the identified obstructions occur within easily accessible sites. The site characteristics that contribute to more difficult access by personnel and/or equipment include narrow access routes, vegetative brambles (i.e., Himalayan blackberry) that require clearing for site access, soft and/or saturated soils, and sites that have traffic hazards for access. Potential sites with access issues on Port-owned properties include Sites 5f and 5d, which are located, or partially located, on steep slopes and within a bramble-filled wetland buffer that may also contain soft soils. Traffic hazards may be an issue for access to obstruction sites along SR 509, particularly if access via the highway is the only option. Detailed plans for site access will be developed through the Implementation Plan. Clearing additional vegetation, and placing and removing access route materials (angular rock and base courses) may require further site restoration following obstruction removal.

5 OBSTRUCTION REMOVAL METHODS

This section presents methods for each step of completing the obstruction management program as follows:

1. Obstruction removal
2. Material processing and disposal
3. Site treatment (to minimize future obstructions and stabilize the site)
4. Monitoring

The various methods are identified in Tables 2 through 5, along with the suitability of these methods under certain site conditions and property ownership. The methods are also evaluated against the guiding principles of the flight corridor safety obstruction management program as they relate to FAA policies, Port policies, and overall cost. When the data collection for each site is complete, the Port will select a preferred removal plan for each site, which will be included in the Implementation Plan. A few examples showing how these approaches could be combined into a preferred removal plan are provided in Tables 1 through 4.

Table 2
Suitability and Comparison of Potential Methods for Obstruction Removal

Potential Method	Suitability		Other Considerations	
	Site Conditions	Property Ownership	Consistent with FAA and Port Policies	Cost per Obstruction
Clearing, tree removal in congested area (hand work)	Suitable where isolated obstructions occur particularly on congested sites; may also include cordoning off the removal area to protect the public	Suitable for all ownership types	All options are consistent with FAA rules and Port policies.	High. This option would likely be the most expensive for tree removal, however because the operation may have less unintentional vegetation removal and disturb less of the site overall, the material disposal and site treatment costs may be lower.
Clearing, tree removal without stump removal	Suitable where isolated or small groupings of obstructions occur and retaining stumps is used to protect steep slopes	May not be suitable for private owners and public entities who require or prefer stump removal		Moderate. Somewhat lower than selective clearing, grubbing, and grading
Selective clearing, grubbing, and grading	Suitable where isolated or small groupings of obstructions occur and retaining stumps is not needed to protect steep slopes	Suitable for all ownership types		Moderate. Somewhat higher than selective clearing and grubbing without stump removal
Clearing, grubbing, and grading	Suitable for areas with dense obstruction groupings where adjacent areas are not congested or major traffic corridors; sites without firm, level terrain would be more difficult to clear using standard equipment (e.g., 300-horsepower bulldozer)	May not be suitable for private owners and public entities who may require protection of non-obstruction features and vegetation		Low to Moderate. The cost of removal per unit obstruction would likely be the lowest of all methods. However, because many understory features would also be removed during clearing, the disposal cost per obstruction may be higher. Additionally, treatment for sites not slated for development would require a larger investment as the removal operation would likely cause more site disturbance.

Potential Method	Suitability		Other Considerations	
	Site Conditions	Property Ownership	Consistent with FAA and Port Policies	Cost per Obstruction
Topping trees	Topping is no longer regarded as a suitable pruning practice because it affects tree health, potentially creating a hazard tree, and stimulates undesirable growth, triggering ongoing maintenance.	While topping could be possible on Port-owned property where regular maintenance could occur, it would require much more maintenance and re-topping over time. In addition, this approach is not consistent with Port policies related to wildlife management.	The airport's <i>Wildlife Hazard Management Plan</i> prohibits tree topping adjacent to the airport.	Moderate, though this option is not feasible. While the cost of the initial topping would be low, additional recurring costs would be required to maintain trees below the obstruction level

Table 3
Suitability and Comparison of Potential Methods for Material Disposal from Obstruction Removal Activities

Potential Method	Suitability		Other Considerations	
	Site Conditions	Property Ownership	Consistent with FAA and Port Policies	Cost
Leave material on site with little or no processing	Problematic except in open space areas; leaving obstructions where they lay may be interpreted as discharging fill within wetland or stream critical areas	May not be suitable for private owners and public entities who may require removal of materials	Consistent with policies, provided felled logs are monitored for resprouting to avoid future obstructions	Low.
Process material for use on site (wood chips, restoration features)	Suitable for sites that are large enough to contain these materials	May not be suitable for private owners and public entities who may require removal of materials	These options are acceptable. Reuse of materials contributes to the goals of the <i>Environmental Strategy Plan</i> (e.g., waste reduction) and are cost effective.	Moderate. Slightly higher cost than leaving material on site with little or no processing
Process material for Port use off site (wood chips, lumber, restoration features)	Suitable for all site conditions	Suitable for all ownership types		Moderate. Slightly higher cost than processing material for on-site use, as work includes trucking material off site; potential cost savings for receiving project by eliminating the need to purchase this material elsewhere
Salvage understory plant materials and replant following obstruction removal				Costs associated with salvaging plant material would be minimal given that this work would likely be provided by volunteers. This option would provide cost savings through lowering the costs associated with purchasing plants for site revegetation.

Potential Method	Suitability		Other Considerations	
	Site Conditions	Property Ownership	Consistent with FAA and Port Policies	Cost
Dispose off site(no reuse conditions)	Suitable for all site conditions	Suitable for all ownership types	This option is acceptable, though does not contribute to Port waste reduction goals.	High.
Engage materials exchange network for beneficial reuse by other parties			This option is acceptable.	Low, provided a receiving property or party is available to take materials immediately following removal

Table 4
Suitability and Comparison of Methods for Site Treatment (Minimizing Potential Future Obstructions, Stabilizing Site)

Potential Method	Suitability		Other Considerations	
	Site Conditions	Property Ownership	Consistent with FAA and Port Policies	Cost
Revegetate site with shrubs and groundcovers	Best suited for sites with the closest proximity to safe navigable airspace surface	Suitable for all ownership conditions	Consistent with policies, provided species selected are part of the Port's approved plant palette	Low to moderate for plant installation; however, compared to not revegetating disturbed areas, these methods would lower costs of King County noxious weed management and maintenance activities
Revegetate site using low-growing trees, shrubs, and groundcovers	Suitable for most site conditions	Suitable for all ownership conditions		
Develop site	Most feasible for sites outside of critical areas where the development proposal complies with airport safety land use requirements	Suitable for sites slated for development; if time frame for development is further out, temporary site treatment for erosion and sediment control would be required	Consistent with policies, provided development proposal complies with airport safety land use requirements	Low. This option includes the potential that the developing agency will cover the obstruction removal work from their development budget.
Implement tree removal and site treatment in adjacent areas with near-term obstruction potential	Best suited for sites where repeated disturbance through obstruction removal is ill-advised (critical areas, congested areas)	Best suited for private ownership conditions where repeat entry for obstruction removal will be time-consuming and/or difficult	Consistent with policies	High. Highest cost in the short term through additional obstruction removal; however, this is a cost-saving approach for overall obstruction management because this option eliminates future access planning, permitting, and crew and equipment mobilization to a site

Potential Method	Suitability		Other Considerations	
	Site Conditions	Property Ownership	Consistent with FAA and Port Policies	Cost
Erosion control best management practices (geotextiles, armoring slopes)	May be necessary for certain steep slope sites, particularly those where soft armoring through revegetation may not be feasible or be sufficient towards slope protection; may be required on private sites where grading following obstruction removal is required, but the space for grading requires retaining structures to meet grades while protecting nearby infrastructure	Suitable for all ownership conditions	Consistent with policies	Low to moderate. This cost depends on the methods required for erosion control.

Table 5
Suitability and Comparison of Methods for Monitoring

Potential Method	Suitability		Other Considerations	
	Site Conditions	Property Ownership	Consistent with FAA and Port Policies	Cost
Treat stumps to control resprouting¹ (applicable only in sites where stumps were left in place during obstruction removal)	To avoid future obstruction development, this approach would be required where stumps of fast-growing species are resprouting. Herbicide or fungicide treatment of stumps in or near aquatic areas would need to comply with water quality policies.	Not well suited for private ownership conditions where repeat entry for obstruction removal would be time-consuming and/or difficult.	Consistent with policies	Moderate, however this method provides cost savings because it removes the future obstruction potential of a feature, and thus eliminates future access planning, permitting, and crew and equipment mobilization to a site.
Monitor areas with high near-term obstruction potential	Suitable for sites where recurring obstruction removal (i.e., 5-year cycle) is possible.	Suitable for all ownership conditions, though permission to enter private or public parcels may be required if obstructions cannot be monitored from rights-of-way or Port-owned property.	Consistent with policies	Low.

Note:

1. Species of concern for stump resprouting include cottonwoods, maples, and willows

6 RECOMMENDED APPROACH TO OBSTRUCTION REMOVAL

Port staff have determined that the approach to obstruction management should proceed in the following general sequence: 1) Port-owned properties; 2) other public-owned properties and commercial properties; and 3) private properties. Within this sequence, the phasing of obstruction removal should prioritize those sites that pose the greatest safety risk. An evaluation examining the degree to which an obstruction is penetrating the approach and departure surface, as well as species-specific tree growth rates, will provide a better understanding of the priority for removal. The current field efforts that include ground truthing the LiDAR analysis through site surveys and GPS data collection will also provide the species details necessary to establish these growth rates. Further detail of this phasing will be provided through the Implementation Plan.

The Port has identified 24 specific sites within their ownership that are in need of clearing. Grouping these sites into logical bid packages through the Implementation Plan will streamline the complexity inherent with this number of sites. While combining Port-owned sites that are geographically near each other may make sense in some instances, the means and methods of obstruction removal, as well as specific site characteristics (e.g., critical areas, difficult site access, congested areas), are important factors in making sure the right crew and equipment are working on the right site.

Communication with WSDOT and local jurisdictions at the conceptual stage of the obstruction management program can provide an introduction to the project and early identification of coordination or permitting needs, including agency guidance and land use code requirements related to tree removal and revegetation. Further communications could include site visits with agency representatives to describe the program in more detail, the site conditions, and the safety issues guiding the program. In addition, this outreach can provide an opportunity for local jurisdictions to identify potential mitigation needs associated with tree removal.

Based on the existing information and range of alternatives, the following approach to obstruction removal is recommended.

6.1 Steps to Implementing the Obstruction Removal Plan

<p>STEP 1: Confirm existing conditions at each obstruction removal site</p>	<p>Complete tree surveys to confirm tree numbers, size, and species. The site visits can also be used to confirm the presence of any critical areas and other important site conditions (e.g., access restrictions) that may affect obstruction removal. This work is ongoing.</p>
<p>STEP 2: Confirm degree of intrusion for each obstruction removal site</p>	<p>Use LiDAR information combined with tree species and site conditions to confirm existing degree of intrusion and predict risk of increased intrusion.</p>
<p>STEP 3: Identify preferred removal method for each site</p>	<p>Identify preferred removal method for each site based on the site conditions, species, height, and degree of intrusion.</p>
<p>STEP 4: Develop grouping of sites for bid packages</p>	<p>Prepare an obstruction management implementation plan that prioritizes removal in the following general sequence: 1) Port-owned properties; 2) other publicly owned properties and commercial properties; and 3) private properties. Within each element, adjustments can be made as necessary to remove high-priority obstructions that have greater degrees of intrusion.</p>
<p>STEP 5: Coordinate with local jurisdictions and regulatory agencies</p>	<p>Assimilate summaries of site information and obstruction removal plans for each reviewing agency and confirm which approvals are required. Prepare environmental review and permitting documents as necessary.</p>
<p>STEP 6: Complete obstruction removals</p>	<p>Remove obstructions and revegetate the site. Implement monitoring of sites for future obstructions as well as performance monitoring for revegetation as required by permit conditions.</p>

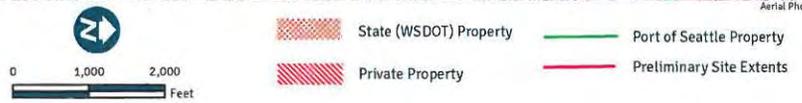
7 REFERENCES

- City of SeaTac and Port of Seattle, 2006. *2005 Interlocal Agreement (ILA-2)*.
February 16, 2006. Cited: October 29, 2015. Available
from: <http://www.ci.seatac.wa.us/Modules/ShowDocument.aspx?documentid=512>.
- FAA (Federal Aviation Administration), 2007. Advisory Circular 150/5200-33B.
August 27, 2007. Cited: November 3, 2015. Available
from: http://www.faa.gov/documentLibrary/media/advisory_circular/150-5200-33B/150_5200_33b.pdf.
- FAA (Federal Aviation Administration), 2014. Advisory Circular 150/5300-13A.
February 26, 2014. Cited: October 26, 2015. Available from:
<http://www.faa.gov/documentLibrary/media/150-5300-13A-ch1-interactive.pdf>.
- Port of Seattle, 2006. *Seattle-Tacoma International Airport Landscaping Design Standards*.
February 8, 2006. Available
from: <https://www.portseattle.org/Business/Construction-Projects/Airport-Tenants/Pages/Reference-Documents.aspx>.
- Port of Seattle, 2009. *Environmental Strategy Plan 2009*. Cited December 15, 2015.
Available from: https://www.portseattle.org/Environmental/Environmental-Documents/Documents/09_Env_Strategy_Plan.pdf.
- Port of Seattle, 2015a. *2016 Aviation Division Business Plan*. May 20, 2015. Cited:
October 29, 2015. Available
from: http://www.portseattle.org/about/commission/meetings/2015/2015_05_26_RM_7b_attach.pdf.
- Port of Seattle, 2015b. *Schedule of Rules and Regulations No. 5. Seattle Tacoma International Airport*. February 12, 2015. Cited: October 26, 2015. Available from:
<https://www.portseattle.org/Business/Documents/Rulereg.pdf>.
- Port of Seattle, 2015c. *Century Agenda*. Cited: December 15, 2015. Available
from: <http://www.portseattle.org/about/commission/pages/century-agenda.aspx>.
- Port of Seattle, 2015d. *Commission Meeting*, November 24, 2015. Video available
from: <https://www.portseattle.org/About/Commission/Meetings/Pages/default.aspx>.

FIGURES



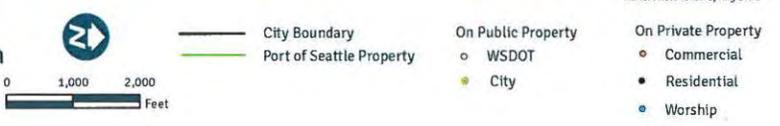
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Figure 2: Port-Owned Site Locations
Flight Corridor Safety Obstruction Management Program
Conceptual Plan



Aerial Photo Taken Spring 2012



Figure 3: Obstructions Outside Port Property
 Flight Corridor Safety Obstruction Management Program
 Conceptual Plan



APPENDIX A
POTENTIAL ENVIRONMENTAL
APPROVALS AND PERMIT MATRIX

Permit/Approval	Agency	Trigger	Notes
Federal Jurisdiction: Permits			
CWA Section 404 (Section 404 permit)	USACE	Discharge of dredged or fill material into waters of the United States, including adjacent special aquatic sites such as wetlands	No new permits are anticipated at this time; however, obstruction removal on existing mitigation sites will require permit modifications per the provisions of restrictive covenants.
Migratory Bird Treaty Act	USFWS	Actions that results in the harming a migratory bird, its eggs, or nest	No permits are anticipated if the tree removal is done before March 1 and after July 15.
Rivers and Harbor Act Section 10 (Section 10 Permit)	USACE	Any proposed work in, over, or under navigable waters of the United States that affects navigable capacity	See Section 404 above.
Federal Jurisdiction: Associated Approvals			
NEPA Compliance	Lead federal agency	Projects with a federal nexus (e.g., led by a federal agency, receiving federal funding, located on federal lands, or requiring a federal permit)	Would apply to USACE permits, FAA decision and/or federal funding
ESA Section 7 Consultation	NMFS and USFWS	All projects with federal nexus are subject to Section 7 of the ESA, which requires federal agencies to ensure that projects they authorize, permit, or fund do not jeopardize the continued existence of any threatened or endangered species, or destroy or adversely modify critical habitat.	The federal nexus for the project would be associated with USACE permit and/or federal funding for project; a biological assessment will be prepared for the project to support the USACE permit process.
Magnuson-Stevens Fishery Conservation and Management Act EFH Consultation	NMFS	Consultation is required to ensure that federal actions adequately avoid, minimize, or mitigate any activity that may affect EFH	EFH consultation occurs concurrently with ESA consultation.

Permit/Approval	Agency	Trigger	Notes
NHPA Section 106 Consultation	Federal lead agency in coordination with the DAHP	Projects with a federal nexus are subject to Section 106 of NHPA, which evaluates actions that have the potential to affect cultural, archaeological, or historical properties	No effects to historic properties are anticipated at this time.
State Jurisdiction: Permits			
CWA Section 401 WQC	Ecology	Applying for a federal permit or license to conduct any activity that might result in a discharge of dredge or fill material into water or non-isolated wetlands or excavation in water or non-isolated wetlands	Not anticipated at this time
Coastal Zone Management Act Federal Consistency Determination	Ecology	Projects that contain a federal nexus proposed within any of Washington's 15 coastal counties	Not anticipated at this time
CWA Section 402 National Pollutant Discharge Elimination System Construction Stormwater General Permit	Ecology	Required for all soil-disturbing activities where 1 or more acres will be disturbed and have a discharge of stormwater to a receiving water or storm drains that discharge into a receiving water (i.e., wetland, creek, river, marine water, ditch, or estuary)	Not anticipated at this time
Hydraulic Project Approval	WDFW	Proposed activity that uses, diverts, obstructs, or changes the natural flow or bed of any of the saltwaters or freshwaters of the state	Not anticipated at this time
Class IV General Forest Practices Permit	DNR or authorized local jurisdiction	Required when more than 5,000 board feet of merchantable timber (approximately one logging truck) is harvested from an area or property	Would be processed as part of local agency critical areas review and/or clearing and grading permitting
Tree Removal Authorization	WSDOT	Tree or vegetation removal on WSDOT property	Includes requirements/ratios for revegetation

Permit/Approval	Agency	Trigger	Notes
Local Agencies			
SEPA Compliance	Local jurisdiction	Any proposal that requires a state or local agency decision to license, fund, or undertake a project; or the proposed adoption of a policy, plan, or program can trigger environmental review under SEPA	Propose SEPA review of obstruction removal plan for each jurisdiction
Substantial Shoreline Development Permit	Local jurisdiction	Proposed activities occurring within the Shoreline Management Act Jurisdiction (generally within 200 feet of mean higher high water)	Not anticipated at this time
Critical Area Review	Local jurisdiction	Triggered by proposed activities occurring within sensitive areas or their buffers (e.g., landslide-prone areas, steep slopes, wetlands)	
Other Local Permits and Approvals (e.g., Building, Fill/Grade, Land Use, Noise)	Local jurisdiction	Required for proposed activities within a city or county jurisdiction	

Notes:

This list of permits and approvals is based on Anchor QEA's experience of resource agency review time frames and is subject to change based on project complexity and locale.

CWA = Clean Water Act

DAHP = Department of Archeology and Historic Preservation

DNR = Washington Department of Natural Resources

Ecology = Washington State Department of Ecology

EFH = Essential Fish Habitat

ESA = Endangered Species Act

FAA = Federal Aviation Administration

NEPA = National Environmental Policy Act

NHPA = National Historic Preservation Act

NMFS = National Marine Fisheries Service

SEPA = State Environmental Policy Act

USACE = U.S. Army Corps of Engineers

USFWS = U.S. Fish and Wildlife Service

WDFW = Washington Department of Fish and Wildlife

WQC = Water Quality Certification

WSDOT = Washington Department of Transportation

EXHIBIT 11

Steve Pilcher

From: Milanese, Marco [Milanese.M@portseattle.org]
Sent: Wednesday, July 20, 2016 3:55 PM
To: Joseph Scorcio; kamurong@burienwa.gov; Piasecki, Tony - City Manager (Des Moines); Scott.Logan@highlineschools.org
Cc: Rybolt, Steven; del Fierro, Sally; Gallagher, Clare; Jeff Robinson
Subject: Information on the SEPA Process for Sea-Tac Airport's Flight Corridor Safety Program
Attachments: SEPA_Flight_Corridor_Safety_Program_Ph1_ThresholdDetermination_SIGNED.pdf

Dear Joe, Kamuron, Tony and Scott:

Friday marks the official start date for the State Environment Policy Act (SEPA) public comment period for Sea-Tac Airport's Flight Corridor Safety Program – Phase 1. The two week public comment period begins on July 22 and ends at 4:00 PM on August 5.

Phase 1 of the program is restricted just to obstructions on Port property. Phase 2, publicly owned and commercial properties, and Phase 3, residential properties, will have separate SEPA processes in the years to follow.

The Mitigated Determination of Non-Significance (MDNS) and SEPA checklist for Phase 1 of the Program will be available on Friday on the Port of Seattle's SEPA/NEPA [webpage](#). SEPA designees, or other individuals you've self-identified in [Port email updates](#), within each of your jurisdictions will receive information about the SEPA process by email on Friday.

In addition to the SEPA webpage, the Port has a [webpage](#) dedicated to the Flight Corridor Safety Program which includes additional information about the program including the Implementation Plan. An advanced copy of the Implementation Plan was provided to all of you for early agency comment on May 18.

Comments on Phase 1 of the Flight Corridor Safety Program can be submitted to SEPA.p@portseattle.org. Any questions about the process, contact Steve Rybolt at the Port at (206) 787-5527.

Over 1900 property owners within SeaTac, Burien and Des Moines will soon begin receiving letters notifying them about the SEPA process, where they can find additional information and how they can offer comments. The over 1900 property owners are receiving letters because they are all within a quarter mile of one of the identified obstructions scheduled for removal. An advanced copy of that letter is attached. Letters will be post marked today, Wednesday. Additionally, anyone who expressed the desire to be kept informed about the program or any Port SEPA/NEPA processes will receive a notification email from the Port on Friday.

After reviewing all the comments on the SEPA MDNS, the Port will issue a final SEPA determination in August.

Marco Milanese
Community Relations Manager
Port of Seattle
Seattle-Tacoma International Airport
PO Box 68727
Seattle, WA 98168
P: 206-787-7734
C: 206-225-6081
E: milanese.m@portseattle.org



EXHIBIT 12



August 4, 2016

4800 South 188th Street
SeaTac, WA 98188-8605

City Hall: 206.973.4800
Fax: 206.973.4809
TDD: 206.973.4808

Elizabeth Leavitt, SEPA Responsible Official
Senior Director, Environment and Sustainability
Port of Seattle
P.O. Box 1209
Seattle, WA 98111

Steve Rybolt
Environment and Sustainability Dept.
Port of Seattle
P.O. Box 68727
Seattle, WA 98168

Re: MDNS for Sea-Tac Airport Flight Corridor Safety Program – Phase 1

Ms. Leavitt and Mr. Rybolt:

City of SeaTac staff has reviewed the July 15, 2016 SEPA Mitigated Determination of Non-significance for Phase 1 of the Flight Corridor Safety Program, together with the accompanying SEPA checklist and supporting documentation. We appreciate past communications and materials that have been provided regarding this project, as that allowed us to more quickly perform our review of the environmental documents that are currently provided.

We have several comments, as follows:

1. Both information that has been previously provided and the SEPA checklist itself indicate that the Port has determined the full scope of this project, which will be implemented in three phases. However, this MDNS only reflects the initial phase (“Phase 1”) of tree removal and replanting.

The State SEPA guidelines (WAC 197-11-055(2)) indicate that “the lead agency shall prepare its threshold determination.....at the earliest possible point in the planning and decision-making process, when the principal features of a proposal and its environmental impacts can be reasonably identified.” Since the Port is fully aware of the overall scope of the Flight Corridor Safety Program, it is appropriate that the entire project be evaluated in its totality, rather than in a phase-by-phase manner. In fact, the environmental checklist makes reference to the upcoming phases and information provided in the checklist indicates that the scope of the future phases are known to a sufficient degree of specificity to allow SEPA analysis to occur at this time. For example, the response to Section A.7 states that approx. “2,750 trees...will be removed in the next three years ending in 2019.” Therefore, the environmental impact of removing 2,750 trees should be evaluated at this time, not just the 1,800 trees proposed for removal in Phase 1.

2. The threshold determination is identified as a Mitigated Determination of Non-Significance; however, no mitigation measures are listed. Please clarify what mitigation measures are being proposed for this action.

Mayor
Michael J. Siefkes

Deputy Mayor
Pam Fernald

Councilmembers
Rick Forschler
Kathryn Campbell
Peter Kwon
Tony Anderson
Erin Sitterley

Acting City Manager
Joseph Scorcio

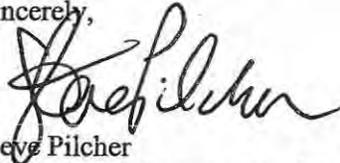
City Attorney
Mary Mirante Bartolo

City Clerk
Kristina Gregg

3. In Section A.8 of the checklist, various staff briefings with outside agencies are listed. While these are admirable outreach efforts regarding the project, they do not qualify as “environmental information.....that has been prepared....related to this proposal” and should be removed from this section.
4. Please clarify what approval or permit is referenced in RCW 14.12.020 and also in the Port’s Interlocal Agreement with the City of SeaTac.
5. Section B.4.d states that re-planting will occur at a minimum ratio of 1:1, but also states approx. 2,400 native trees will be re-planted in Phase 1 (a 1.5:1 ratio). Please clarify what standard will be used. Also, are the species of native trees to be planted known at this time? They are described as “low-height” species in B.4.b. Small caliper trees that grow at slower rate will exacerbate temporal impacts of the loss of tree canopy; the Port should consider planting trees at variable calipers to help minimize the lost tree canopy. Finally, we assume the Port’s concerns with potential avian-airplane conflicts must also limit the species types under consideration.
6. Section B.8.e lists a number of City of SeaTac zoning classifications that do not apply to airport properties and therefore, Phase 1.
7. Section B.8.f states that the comprehensive plan “land use” is the same as the current zoning classification. The City’s comprehensive plan designation for the airport is “Airport,” while the zoning designation is “Aviation Operations.” This should be corrected.

Thank you for the opportunity to comment. We look forward to reviewing how these issues are addressed in the final SEPA determination.

Sincerely,



Steve Pilcher
Acting SEPA Responsible Official
Planning Manager

cc: Joseph Scorcio, Acting City Manager
Jeff Robinson, Acting Community & Economic Development Director
Al Torrico, Senior Planner
Don Robinett, Stormwater Manager

EXHIBIT 13

**Final State Environmental Policy Act (SEPA)
Mitigated Determination of Non-Significance (MDNS) of Proposed Action for
Seattle-Tacoma International Airport (Sea-Tac Airport)
Flight Corridor Safety Program - Phase 1**

The Port of Seattle has completed an environmental analysis, including review of pertinent and available environmental information and preparation of an Environmental Checklist for the following proposal:

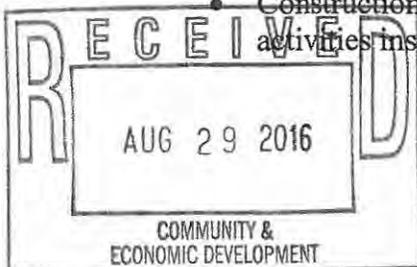
Description and Clarification of Proposal: The Port of Seattle is proposing to remove obstructions consisting of trees and other vegetation at and around Seattle-Tacoma International Airport. Removal of the obstructions will ensure the Airport complies with Federal Aviation Administration (FAA) regulations that require airport operators to protect flight operations into and out of the airport and assure that objects obstructing aircraft approach and departure areas are removed.

This SEPA determination is for Phase 1 located on Port of Seattle property only. Additional SEPA review will be required for Phases 2 and 3 and will include public and agency outreach and comment periods.

The Flight Corridor Safety Program will remove a total of approximately 2,750 trees and is planned to be accomplished in three phases over the next three years ending in 2019. Phase 1, expected to begin in the fourth quarter of 2016, will include the removal of obstructions on Port-owned properties, Phase 2 will include the removal of obstructions on commercial and public properties, and Phase 3 will include the removal of obstructions on private properties.

Phase 1 will remove approximately 1,170 trees located on 27 acres of Port of Seattle property. After the removal of these obstructions, new trees and vegetation will be re-planted in accordance with federal, state, and local requirements and Port of Seattle policy. Mitigation for Phase 1 includes:

- Re-planting of approximately 4,000 trees (updated based on project design) for the removal of approximately 1,170 trees;
- Shrubs and hydro seeding to revegetate areas where ground vegetation or understory impacts occur;
- Erosion control best practices;
- Removal of trees outside of the bird-nesting season;
- Construction design and specifications that require the avoidance of ground disturbing activities inside wetlands; and



- A monitoring period of 5 years (updated based on project design) within wetland and buffer areas.

Location of Proposal: Phase 1 has six project sites located at and around Seattle-Tacoma International Airport. The airport address is 17801 Pacific Highway South, Seattle, Washington, 98158. These sites include:

- Site 1 (P-1) - Located immediately north of South 154th Street and Runway 16R/34L and south of State Route 518
- Site 2 (P-2) - Located immediately west and adjacent runway 16R/34L and Port of Seattle's West Side Offices
- Site 3a (P3a) - Located directly south of runway 16C/34C and S 188th Street surrounding the north and east edges of lagoon 3 (i.e. Port of Seattle's stormwater storage)
- Site 3b (P3b) - Located directly south of runway 16C/34C and S 188th Street surrounding the north and east edges of lagoon 3
- Site 4 (P-4) - Located south of the airport and south of Site P-3a and Site P-6, southwest of Site P-3b, west of the runway 16L/34R ALSF, and intersected by S 200th Street
- Site 5 (P-5) - Located south of runway 16C/34C, directly south of S 200th Street, and west of Site P-4
- Site 6 (P-6) - Located west of Site P-3b and runway 16L/34R Approach Lighting System with Sequence Flashers (ALSF) and south of Site P-3a

Lead Agency: Port of Seattle (SEPA No. 16-07)

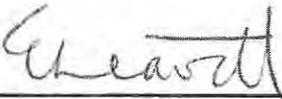
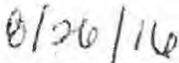
Determination: The Port of Seattle has determined that this proposal would have likely significant adverse environmental impacts that would require the preparation of an EIS, but that those likely impacts have been reduced down to a nonsignificant level as a result of the proposed Mitigation for Phase I which is described above. See WAC 197-11-350. As a result of the proposed Mitigation for Phase I, this proposal will not have a probable significant adverse impact on the environment and a MDNS is an appropriate threshold determination. Accordingly, an environmental impact statement (EIS) is not required under the provisions of the Washington State Environmental Policy Act (Chapter 43.21 RCW, Chapter 197-11 WAC) and Port of Seattle SEPA Policies and Procedures (Port Commission Resolution 3650). This decision was made after review of a completed environmental checklist, comments by the public and other entities, and other information that is available upon request.

Supporting Information: Information used to reach this determination, and applicable State laws and Port of Seattle policies, regulations, and procedures are available for public review at the Port of Seattle office, Environment and Sustainability Department, Pier 69, 2711 Alaskan Way, Seattle, Washington, and Seattle-Tacoma International Airport, Airport Office Building reception, 17801 International Boulevard, Seattle, Washington. The document is also available for review on line at <http://www.portseattle.org/Environmental/Environmental-Documents/SEPA-NEPA/Pages/default.aspx> and additional information at the Flight Corridor Safety Program website at: http://www.portseattle.org/Business/Construction-Projects/Airport-Projects/Pages/safe_corridor.aspx.

Public & Agency Comment: The MDNS and Environmental Checklist for this project were circulated on July 15, 2016, and the comment period ended August 5, 2016. Four comments were received by email through the Port of Seattle’s SEPA public and agency comment process. The description of the project proposal and proposed Mitigation for Phase I was updated to provide clarification in response to the comments received and to more specifically describe the mitigation that would be proposed for the proposal. The Port of Seattle has concluded that no likely significant adverse environmental effects will result from the proposed Flight Corridor Safety Program – Phase 1. The Port of Seattle’s Final MDNS is being issued, as of August 26, 2016, based on the final mitigated determination of no significant environmental impacts.

Appeals: The Port of Seattle's decision on the proposal described above and the Port's issuance of a Final MDNS on this proposal constitute the Port of Seattle’s final SEPA decision. This SEPA MDNS determination may be appealed by filing an application for a writ of review in King County Superior Court within twenty-one (21) days of the date below pursuant to Port of Seattle Resolution No. 3650 and RCW 43.21C.075.

Responsible Official: Elizabeth Leavitt
Position/Title: Senior Director, Environment and Sustainability, Port of Seattle
Address: Pier 69
P.O. Box 1209
Seattle, WA 98111

SEPA Responsible Official
Port of Seattle
August 26, 2016
Date of Final MDNS

Translations help for non-English speaking neighbors of Sea-Tac Airport

If you need assistance or want to receive a response to a question in your native language, please call the Port’s language help line:

- Para español, llame al (206) 787-3797 y marque 1.
- Để sử dụng tiếng Việt, gọi số (206) 787-3797 và nhấn phím 2
- Soomaali, wac (206) 787-3797, kadib riix 3.
- សម្រាប់ភាសាខ្មែរ សូមហៅទូរស័ព្ទមកលេខ (206) 787-3797 ហើយចុចលេខ 4។
- For other languages, call (206) 787-3797 and press 5.

SITE MAP



- Sites by ownership**
- Port
 - Public
 - Private
 - Existing Obstructions
 - Potential Obstructions



Port of Seattle

Location of Obstructions
 Flight Corridor Safety Program
 Port of Seattle

EXHIBIT 14



September 1, 2016

4800 South 188th Street
SeaTac, WA 98188-8605

City Hall: 206.973.4800
Fax: 206.973.4809
TDD: 206.973.4808

Elizabeth Leavitt, SEPA Responsible Official
Senior Director, Environment and Sustainability
Port of Seattle
P.O. Box 1209
Seattle, WA 98111

Re: Final MDNS for Sea-Tac Airport Flight Corridor Safety Program – Phase 1

Ms. Leavitt:

Thank you for providing a copy of the Final MDNS issued for Phase 1 of the Flight Corridor Safety Program. We appreciate the effort that was made to respond to our earlier comments of August 4, 2016 concerning the Threshold MDNS document dated July 15, 2016.

It appears that the SEPA Checklist remains unchanged, even though proposed mitigation measures have been altered. For example, the checklist continues to state that 2,400 trees will be replanted for Phase 1, while the Final MDNS indicates 4,000 trees will be replanted. Please clarify the planned replacement number, where these trees will be replanted, and what the basis is for this increased ratio.

As you may know, we have received comments from a SeaTac citizen, expressing concern regarding planned tree removal within wetlands and wetland buffers. Upon reviewing those comments, Steve Rybolt clarified via email that the work within Phase 1 will not impact any wetlands or buffers. This citizen's misunderstanding is most likely a product of the background Critical Areas Special Study report, which addresses all three phases of the program. The Port's decision to take an incremental environmental review approach to this program, rather than addressing the full scope of the project through one SEPA action, remains a questionable approach under the SEPA guidelines.

As you know from our previous correspondence, the SEPA guidelines indicate that environmental analysis of a project should occur "at the earliest possible point in the planning process, when the principal features of a proposal and its environmental impacts can be reasonably identified" (WAC 197-11-055(2)). We urge the Port to reconsider its phased approach and prepare a SEPA document that addresses the full scope of the Flight Corridor Safety Program. If additional environmental analysis is needed when more details of future phases become known, that can remain an option, even if analysis of the entire program is conducted at this time.

At this time, the City is considering all of its options regarding this SEPA action. As some of these options are time limited, your prompt consideration and response is important.

Mayor
Michael J. Siefkes

Deputy Mayor
Pam Fernald

Councilmembers
Rick Forschler
Kathryn Campbell
Peter Kwon
Tony Anderson
Erin Sitterley

Acting City Manager
Joseph Scorcio

City Attorney
Mary Mirante Bartolo

City Clerk
Kristina Gregg

Please feel free to contact us regarding any of the issues raised herein.

Sincerely,

A handwritten signature in black ink, appearing to read "Steve Picher", written over the word "Sincerely,".

Steve Picher
Acting SEPA Responsible Official

cc: Steve Rybolt, Environment and Sustainability Dept., Port of Seattle
Bob Duffner, Senior Manager, Aviation Environmental Programs,
Port of Seattle
Joseph Scorcio, Acting City Manager
Jeff Robinson, Acting Community & Economic Development Director
Al Torrico, Senior Planner
Don Robinett, Stormwater Manager

EXHIBIT 15



September 8, 2016
Mr. Steve Pilcher
Acting SEPA Responsible Official
City of SeaTac
SeaTac, WA98188-8605

RE: Final MDNS for the Flight Corridor Safety Program – Phase I

Mr. Pilcher:

Thank you for your letter dated September 1, 2016 regarding the Port of Seattle's Final Mitigated Determination Non-Significance (MDNS) issued for Phase I of the Seattle-Tacoma International Airport's Flight Corridor Safety Program. I hope I can provide more information to you through this response.

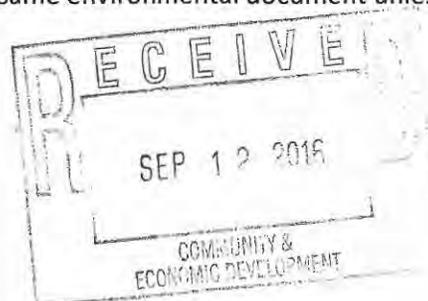
As noted in the Final MDNS, the Port intends to replant over 4,000 trees in the Phase I project. This increase over the minimum number of trees to be replanted is intended to meet the City's critical areas ordinance for trees removed in wetlands and buffers, as well as the Port Commission direction to replace at least one tree for each removed in all areas. In addition, the total number of trees to be replanted in Phase 1 was increased to ensure the minimum requirements are met after assumed tree mortality. Our experience in managing Miller Creek habitat, in particular, helped inform our assumptions about mortality in year one, and replanting ratios.

The majority of additional replantings will occur in Sites P-4 and P-5 located south of 200th Street. For additional illustration, the planned location of trees to be removed and replanted are shown in a map on the Flight Corridor Safety Program's internet site, which we updated in advance of posting the MDNS, at: www.portseattle.org/safecorridor.

Your letter refers to an e-mail provided by Port staff Steve Rybolt, responding to a SeaTac citizen's concerns about tree removal within wetlands and buffers, and in particular, work to be performed between the north end of the runways and SR 518. As noted in Mr. Rybolt's response, I can confirm that Phase I work in this area will be limited to Site P-1, which will occur outside of any wetland. Please note that trees will be removed from wetlands located within other Phase I sites, as described in detail in the project's Implementation Plan and Critical Areas Study.

Regarding your comment concerning the phased approach used in this SEPA determination, SEPA rules allow a proposal to be phased so that SEPA review can be conducted for each phase. Phased review allows agencies and the public to focus on issues that are ready for decision and excludes from consideration issues not yet ready for environmental review (WAC 197-11-060(5)(b)). SEPA does not require all parts of a proposal be considered together in the same environmental document unless the proposals are "closely related" (WAC 197-11-060(3)(b)).

Seattle-Tacoma
International Airport
P.O. Box 68727
Seattle, WA 98168-0727



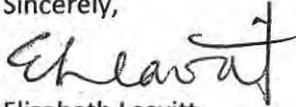
Mr. Steve Pilcher
September 7, 2017
Page 2 of 2

As identified in the SEPA checklist, the Flight Corridor Safety Program is an ongoing effort by the Port to maintain the navigable airspace as required by the Federal Aviation Administration. None of the parts of this program are "closely related" proposals, however, because any of the individual obstructions can be removed without necessarily compelling the removal of other obstructions in different locations.

The SEPA review for this project acknowledged that this is an ongoing program, and also included information on the preliminary locations of other tree obstructions that have been identified. However, the obstruction conditions will change depending on location and over time, and the Port will provide subsequent environmental review for future removal of tree obstructions on properties not owned by the Port. This subsequent phased review will properly consider the cumulative impacts of all phases of the Obstruction Removal Program so as to avoid piecemealing the overall significance of the proposal.

I hope this has answered your questions; please don't hesitate to contact me if you have further concerns. We appreciate the City's ongoing interest in this important project, and to working more with you as the program continues.

Sincerely,



Elizabeth Leavitt
Senior Director, Environment and Sustainability
Port of Seattle

Cc: Traci Goodwin, Senior Counsel, Port of Seattle
Steve Rybolt, Environment and Sustainability, Port of Seattle
Lance Lyttle, Managing Director, Aviation Division, Port of Seattle
Joseph Scorcio, Acting City Manager, City of SeaTac
Al Torico, Senior Planner, City of SeaTac
Jeff Robinson, Economic Development Division Manager, City of SeaTac
Don Robinette, Stormwater Compliance Manager, City of SeaTac

EXHIBIT 16



September 14, 2016

4800 South 188th Street
SeaTac, WA 98188-8605

City Hall: 206.973.4800
Fax: 206.973.4809
TDD: 206.973.4808

Elizabeth Leavitt, SEPA Responsible Official
Senior Director, Environment and Sustainability
Port of Seattle
P.O. Box 1209
Seattle, WA 98111

Re: Final MDNS for Sea-Tac Airport Flight Corridor Safety Program – Phase 1
Request for withdrawal

Ms. Leavitt:

Thank you for responding to our comments regarding the Final MDNS issued for Phase 1 of the three-phase Flight Corridor Safety Program. As you know from our previous comments of August 4 and September 1, 2016, the City's position is that the cumulative impacts of the entire program need to be analyzed at this time, rather than incrementally as each phase is implemented. This is consistent with the State SEPA Guidelines, WAC 197-11, sections of which we have previously cited.

We are requesting that the Port of Seattle withdraw the Final MDNS and then perform the necessary cumulative impact analysis before issuing a SEPA document that addresses the impact of all three phases of the Flight Corridor Safety Program. We ask that this withdrawal occur by noon tomorrow (September 15), as the City will otherwise proceed with filing an appeal of the Final MDNS at King County Superior Court.

Mayor
Michael J. Siefkes

Deputy Mayor
Pam Fernald

Councilmembers
Rick Forschler
Kathryn Campbell
Peter Kwon
Tony Anderson
Erin Sitterley

Acting City Manager
Joseph Scorcio

City Attorney
Mary Mirante Bartolo

City Clerk
Kristina Gregg

Please feel free to contact us regarding any of the issues raised herein.

Sincerely,


Steve Pilcher
Acting SEPA Responsible Official

cc: Lance Lyttle, Managing Director, Aviation Division
Steve Rybolt, Environment and Sustainability Dept., Port of Seattle
Joseph Scorcio, Acting City Manager
Jeff Robinson, Acting Community & Economic Development Director
Mark Johnsen, Senior Assistant City Attorney