

**Draft Environmental Assessment
for
Port of Portland Properties
Habitat Conservation Plan**

PREPARED FOR

U.S. Fish and Wildlife Service
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SUMMARY

Title for Proposed Action: Draft Environmental Assessment for Port of Portland Properties Habitat Conservation Plan

Legal Mandate for Proposed Action: Section 10(a)(1)(B) of the Endangered Species Act (ESA), as amended, as implemented by 50 Code of Federal Regulations (CFR) 17.32 for threatened species, and 50 CFR 13 regarding issuance and administration of permits.

Applicant: Port of Portland, 7200 NE Airport Way, Portland, Oregon 97218

Conservation Plan: The U.S. Fish and Wildlife Service (Service) is evaluating the issuance of an Incidental Take Permit (ITP) for the streaked horned lark (*Eremophila alpestris strigata*) to the Port of Portland (Applicant) for activities related to industrial land development and aviation wildlife hazard management on Applicant properties in Oregon. Currently, streaked horned lark take as a result of aviation wildlife hazard management activities is exempt under a Special Rule used by the Service under section 4(d) of the ESA. To address the possibility of the Special Rule being modified or withdrawn to the effect that it does not fully address the Applicant's implementation of aviation wildlife hazard management activities and proposed land development activities on non-airport properties, the Applicant is requesting take of up to 46 streaked horned lark pairs over a 30-year permit term. Consistent with the requirements of the ESA, the Applicant would minimize the potential for take, implement and maintain habitat conservation measures designed to mitigate the impacts of the takings, and monitor and report on its compliance and effectiveness. These measures and other requirements are detailed in the Applicant's habitat conservation plan, which is part of the application for an ITP. Additionally, this EA evaluates potential take of an estimated 7 streaked horned lark nesting pairs to provide potential mitigation options for future development under a Section 7 consultation as part of the cumulative impacts section.

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ACRONYMS AND ABBREVIATIONS

ABC	American Bird Conservancy
AIP	Airport Improvement Program
ALP	Airport Layout Plan
CEQ	Council on Environmental Equality
CFR	Code of Federal Regulations
CNLM	Center for Natural Lands Management
DSL	Oregon Department of State Lands
EA	Environmental Assessment
ESA	Endangered Species Act of 1973, as amended
FAA	Federal Aviation Administration
FONSI	Finding of No Significant Impact
FR	Federal Register
GPS	Global Positioning System
HCP	Habitat Conservation Plan
ITP	Incidental Take Permit
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
ODFW	Oregon Department of Fish and Wildlife
PDX	Portland International Airport
SAT	Science Advisory Team
Service	United States Fish and Wildlife Service
TNC	The Nature Conservancy
USACE	United States Army Corps of Engineers
USC	United States Code
WHMP	Wildlife Hazard Management Plan

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Chapter 1. INTRODUCTION

This environmental assessment (EA) has been prepared pursuant to the National Environmental Policy Act (NEPA) (42 United States Code [U.S.C.] §4321 et seq.). This EA examines the potential environmental effects of, and alternatives to, the proposed issuance of an Incidental Take Permit (ITP) and approval of a habitat conservation plan (HCP) (SWCA Environmental Consultants [SWCA] 2016) for a federally threatened species—the streaked horned lark (*Eremophila alpestris strigata*)—under section 10(a)(1)(B) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. §1531 et seq.). Issuance of the ITP is a discretionary Federal action requiring review under NEPA. This EA will inform the Service’s decision-making in light of the Service’s mission and goals under the ESA and other applicable Federal laws and regulations.

1.1. Background

The Port of Portland (Applicant) owns and manages properties on which current and proposed activities related to wildlife hazard management and land development could result in the take of streaked horned larks from the loss of nesting habitat and/or from directly harassing, killing, or wounding individual birds or eggs. These properties include: the Rivergate Industrial District (Rivergate), the area within the Portland International Airport (PDX) perimeter fence and other Applicant-owned airport lands under the approach or transitional surfaces of the runways (PDX Intermediate Zone), a subset of the PDX Intermediate Zone planned for future infrastructure development (SW Quad), and the Sandy Island Conservation Area. For the purposes of this analysis, the Rivergate and PDX Intermediate Zone (inclusive of the SW Quad) are the Applicant’s “Project Areas.” Combined with the Sandy Island Conservation Area, these properties constitute the “Plan Area” (Figure 1).

Currently, take of streaked horned larks occurs within the PDX Intermediate Zone, as a result of implementation of the Applicant’s Wildlife Hazard Management Plan (WHMP). This take is exempted from take prohibitions by a Special Rule issued by the U.S. Fish and Wildlife Service (Service) under Section 4(d) of the ESA, hereto referred to as the 4(d) Special Rule (Service 2013a). Incidental take that could arise from planned land development activities at Rivergate and SW Quad is not exempted under the 4(d) Special Rule and authorization for incidental take related to these activities would require the issuance of an ITP.

Additionally, future activities evaluated in the cumulative section (3.5.3.1.1) of this EA that would require approval by the Federal Aviation Administration (FAA) (such as land development at SW Quad), or involve federal funds such as the FAA’s Airport Improvement Program (AIP), a federal nexus would exist and consultation under Section 7 of the ESA would be required. See Section 3.5.3.1.1 for further discussion on this issue.

To comply with and avoid potential violations of the ESA in Rivergate, and to accommodate for take associated with the implementation of the PDX WHMP within the PDX Intermediate Zone and SW Quad, should the exemption from the prohibitions on take by the 4(d) Special Rule be withdrawn or modified (Service 2013a), the Applicant has prepared an HCP and has applied for an ITP in accordance with Sections 10(a)(1)(B) and 10(a)(2) of the ESA.

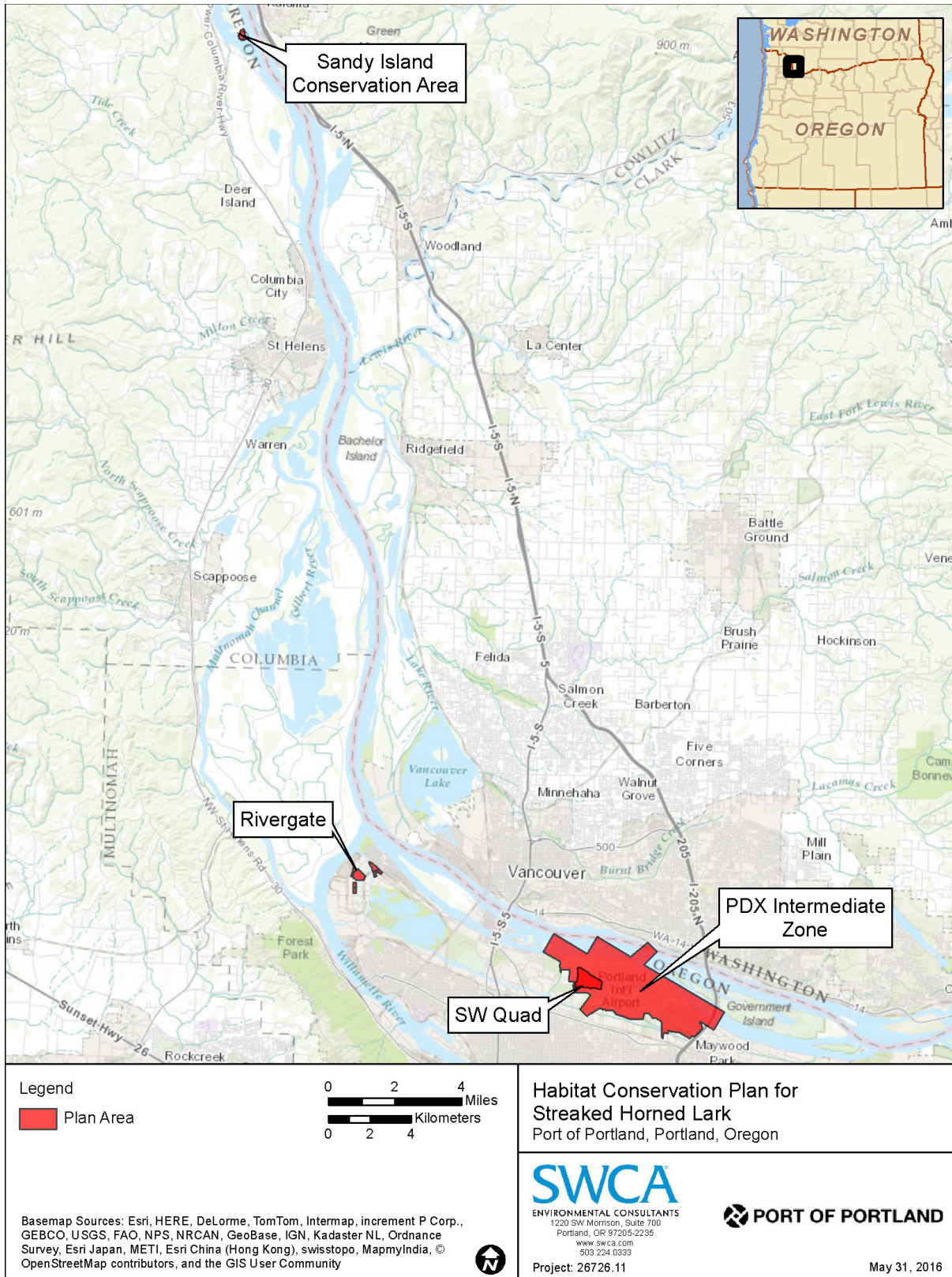


Figure 1. Project areas within the Plan Area.

Take estimated for the ITP application is directly correlated to each project area and the specific activities associated with the take (Table 1). Methods for estimating take numbers can be found in Section 5.2 of the HCP (SWCA 2016). While take resulting from implementation of the PDX WHMP within the PDX Intermediate Zone is currently exempt, in the event that the 4(d) Special Rule no longer addresses take related to aviation wildlife hazard management, the Applicant has accommodated the potential take from these activities in its requested amount of take authorization. If the 4(d) Special Rule remains in effect, the estimated take for the Rivergate and SW Quad Project Areas would be 23 nesting pairs, though in an effort to evaluate the full impacts if the 4(d) Special Rule is withdrawn or modified, the Applicant is requesting the full amount of take—46 streaked horned lark nesting pairs. Additionally, the Applicant is evaluating the potential for future take of 7 streaked horned lark nesting pairs as a result of potential Section 7 consultations for full development of SW Quad, but is not requesting take of those 7 nesting pairs See section 3.5.3.1.1 for a discussion on full development at SW Quad.

Table 1. Requested Take by Project Area

Project Area/Activity	Requested Take with 4(d) Special Rule in Effect	Requested Take without 4(d) Special Rule in Effect
Rivergate Development	8 nesting pairs	8 nesting pairs
SW Quad Development	0 nesting pairs*	0 nesting pairs*
Uncertainty Allowance for Development Activities	8 nesting pairs	8 nesting pairs
PDX Intermediate Zone WHMP Implementation	0 nesting pairs	30 nesting pairs**
Total Take Request	23 nesting pairs	46 nesting pairs

*This amount of take is estimated to be 7 SHLA nesting pairs at the time of this EA. However, since this take would be evaluated under future consultations under Section 7 for the ultimate development of SW Quad (based on data available at that time), it is not included in this take request. Impacts as a result of this take are evaluated in the HCP and this EA to prepare for future Section 7 consultations.

** This amount of take is only released to the Applicant if the 4(d) Special Rule no longer addresses take related to the Port's aviation wildlife hazard management activities within the PDX Intermediate Zone.

1.2. Plan Area Description and Covered Activities

The Plan Area includes the Rivergate and PDX Intermediate Zone Project Areas (inclusive of the SW Quad), and the proposed Sandy Island Conservation Area. Additional information regarding the Plan Area can be found in Section 2 of the HCP (SWCA 2016).

1.2.1. Rivergate

The Rivergate Project Area consists of approximately 121 acres across six undeveloped parcels and is located within the Rivergate Industrial District in Portland, Oregon, along the peninsula bordered by the Columbia and Willamette Rivers in North Portland (see Figure 1 above). The land itself was created or improved for development by the Applicant with the placement of fill

material (mostly sandy dredged material) to elevate building sites to the surrounding grade and provide a substrate suitable for development, which has inadvertently created suitable habitat for streaked horned larks. Undeveloped Rivergate parcels currently support nesting habitat for streaked horned lark due to active land development site management by the Applicant. In the absence of these activities, the habitat would become unsuitable for future use by streaked horned larks.

1.2.2. PDX Intermediate Zone

The PDX Intermediate Zone includes approximately 4,867 acres comprising the area within the airfield perimeter fence, a 300-foot buffer around the perimeter fence, and runway protection zones (together, the Primary Zone); and Applicant-owned airport land outside of the Primary Zone, much of which is under the approach or transitional surfaces of the runways (see Figure 1 above). Most of the PDX Intermediate Zone landscape is developed, and is regularly maintained by mowing or discing to eliminate or reduce aviation wildlife hazards, in accordance with the Federal Aviation Administration (FAA)-approved PDX WHMP (Port of Portland 2009); however, this maintenance promotes conditions suitable for streaked horned lark habitat. Most of the undeveloped upland portions of the PDX Intermediate Zone have the potential to be used by streaked horned larks, although the specific extent of currently suitable streaked horned lark habitat within the PDX Intermediate Zone is unknown.

1.2.3. SW Quad

Located within the PDX Intermediate Zone, the SW Quad area consists of approximately 205 acres of open field. It is located between Elrod Slough and the PDX South Runway (see Figure 1 above). Given its proximity to PDX runways and taxiways, it is an optimal location for future airport infrastructure and development. Current activities, such as mowing and discing, are employed annually to reduce aviation wildlife hazards at this site (Port of Portland 2009). Historically, the SW Quad contained extensive wetlands. To prevent the recurrence of wetland habitat attractive to wildlife species of concern, these wetlands were filled (in accordance with applicable regulations) between 1994 and 2005 and a perforated pipe drainfield installed. These efforts to reduce hazards in accordance with the PDX WHMP have inadvertently created and continue to maintain approximately 77 acres of suitable habitat for streaked horned larks within the SW Quad (Atwell 2016). In the absence of these activities, the habitat would become unsuitable for future use by streaked horned larks.

1.2.4. Sandy Island Conservation Area

Sandy Island is located in the Columbia River at River Mile 75.8 in unincorporated Columbia County, Oregon (see Figure 1 above). Total landmass for the island is approximately 340 acres. Approximately 312 acres were human-made by historic and current dredged material placement and are owned by the Oregon Department of State Lands (DSL). The remaining acreage is in private ownership. Natural resources on the island are regulated by DSL. The island is publicly accessible by boat for recreational activities such as shoreline camping and fishing.

The Applicant holds an easement from DSL for dredged material placement over approximately 32 acres of the DSL-owned portion of Sandy Island. This existing easement, valid through 2030,

allows the Applicant to manage the site for dredged material deposition by the USACE, as part of the USACE’s maintenance of the Columbia River Federal Navigation Channel. The proposed Sandy Island Conservation Area is the portion of Sandy Island subject to the existing 32-acre dredged material placement easement. The repeated placement of dredged material, with the most recent depositions occurring between 1997 and 2011 (Anderson 2010; Anderson and Slater 2015), created habitat for the streaked horned larks.

The USACE considers the Applicant’s Sandy Island dredged material placement site (i.e., the proposed Sandy Island Conservation Area) to be full and does not intend to place additional dredged material there. The USACE or the Applicant are not obligated to manage vegetation at the site (Service 2015). Without recurring site disturbance and/or vegetation management, natural succession of the vegetation will degrade streaked horned lark habitat and is expected to cause the loss of suitable habitat at this site in the near future (Anderson 2013).

1.2.5. Covered Activities and Permit Term

The Covered Activities evaluated in this EA are the Applicant’s proposed activities related to the implementation of the PDX WHMP in the PDX Intermediate Zone and SW Quad, development of industrial property at Rivergate, and management activities proposed in the Sandy Island Conservation Area. A summary of the Covered Activities is provided in Table 2, and in section 4.0 of the HCP (SWCA 2016).

Table 2. Covered Activities Within the Project Areas

Project Area	Covered Activities
Rivergate	<ul style="list-style-type: none"> • conduct routine site management activities to control vegetation, collect garbage, deter trespassing, and similar activities; • develop the parcels over time with the construction of buildings, parking areas, stormwater controls, utilities, and similar facilities related to industrial use; and • continue to use and maintain developed parcels for industrial purposes.
PDX Intermediate Zone	<ul style="list-style-type: none"> • continued implementation of the PDX WHMP*
SW Quad	<ul style="list-style-type: none"> • replace the existing drainfield system*; • prepare the site for eventual development**; and • continue aviation wildlife hazard management activities in accordance with the PDX WHMP.*
Sandy Island Conservation Area	<ul style="list-style-type: none"> • conduct routine site management activities to control vegetation and retain suitable streaked horned lark habitat.

*If the 4(d) Special Rule is still applicable, these activities would remain exempt from take limits associated with the ITP.

**Future land development at SW Quad would be subject to a section 7 consultation as described in section 3.5.3.1.1.

If issued, the ITP would provide take authorization for 30 years from the effective date of the authorization.

1.3. Purpose and Need for Action

1.3.1. Purpose

The Service's purpose in considering the proposed action is to fulfill our authority under section 10(a)(1)(B) of the ESA. Non-Federal applicants, whose otherwise lawful activities may result in take of ESA-listed wildlife, can apply to the Service for incidental take authority so that their activities may proceed without potential violations of section 9 of the ESA.

The Service's Federal action is to evaluate the authorization of incidental take of the streaked horned lark associated with the Applicant's otherwise lawful proposed activities, as described in the HCP and make a decision on the application by the Applicant for an ITP for the proposed Covered Species related to activities that have the potential to result in take, pursuant to the requirements of ESA section 10(a)(1)(B) and its implementing regulations and policies.

1.3.2. Need

Section 10 of the ESA specifically directs the Service to issue incidental take permits to non-Federal entities for take of endangered and threatened species when the criteria in section 10(a)(2)(B) are satisfied by the applicant. Once we receive an application for an incidental take permit, the Service needs to review the application to determine if it meets issuance criteria. We also need to ensure that issuance of the incidental take permit and implementation of the HCP is in compliance with applicable Federal laws, regulations, treaties, and Executive Orders, including other requirements of the ESA in addition to section 10.

The Service received an application from the Applicant for an ITP under the authority of section 10(a)(1)(B) of the ESA. If the application is approved and the Service issues an ITP, the ITP would authorize the Port of Portland to take streaked horned lark as a result of their proposed activities related to industrial land development and aviation wildlife hazard management.

1.4. Decision to Be Made

Under provisions of the ESA, the U.S. Secretary of the Interior (through the Service) may issue a permit for the incidental taking of a listed species if the application conforms to the issuance criteria identified in section 10(a)(2)(B) of the ESA. For the Service to issue a permit, the ESA requires the following:

- The taking will be incidental;
- The applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking;
- The applicant will ensure that adequate funding for the conservation plan and procedures to deal with unforeseen circumstances would be provided;
- The taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild; and
- The measures required under section 10(a)(2)(A)(iv), if any, will be met, and such other assurances that may be required that the HCP will be implemented.

As a condition of receiving an ITP, an applicant must prepare and submit to the Service for approval an HCP containing the mandatory elements of section 10(a)(2)(A). An HCP must specify the following:

- The impact that will likely result from the taking;
- What steps the applicant will take to monitor, minimize and mitigate such impacts, the funding that will be available to implement such steps, and the procedures to be used to deal with unforeseen circumstances;
- What alternative actions to such taking the applicant considered and the reasons why such alternatives are not proposed to be utilized; and
- Such other measures that the Secretary may require as being necessary or appropriate for the purposes of the plan.

The Service will document its ESA section 10 assessment of the ITP and HCP in a section 10 findings document. If the Service makes the requisite findings, the Service may decide to:

- Issue the ITP conditioned on implementation of the Applicant's proposed HCP;
- Issue an ITP conditioned on implementation of the Applicant's HCP together with other specified measures; or
- Deny the ITP application.

1.5. Relationship to Laws, Regulations, Plans, and Policies

Key relevant laws, regulations, and policies that affect the development and implementation of an HCP, ITP, and EA for the Covered Activities are summarized below.

1.5.1. Federal Regulatory Context

1.5.1.1. NATIONAL ENVIRONMENTAL POLICY ACT

The proposed issuance of an ITP by the Service is a Federal action that may affect the human environment and is therefore is subject to review under NEPA (42 USC 4321 et seq). NEPA requires that Federal agency decision-makers, in carrying out their duties, use all practicable means to create and maintain conditions under which people and nature can exist in productive harmony and fulfill the social, economic, and other needs of present and future generations of Americans. NEPA provides a mandate and a framework for Federal agencies to consider all reasonably foreseeable environmental effects of their proposed actions and to involve and inform the public in the decision-making process. The Council on Environmental Quality (CEQ) set forth regulations (40 CFR 1500–1508) to assist Federal agencies in implementing NEPA during the planning phases of any Federal action. These regulations, together with specific Federal agency NEPA implementation procedures, help ensure that the environmental impacts of any proposed decisions are fully considered and that appropriate steps are taken to mitigate potential environmental impacts.

1.5.1.2. ENDANGERED SPECIES ACT

The ESA provides broad protection for plants, fish, and wildlife that have been listed as threatened or endangered in the United States or elsewhere and conserves ecosystems on which these species depend (16 USC 1531–1544). Section 9 of the ESA prohibits the unauthorized take of any endangered or threatened species of fish or wildlife listed under the ESA. *Take* means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect species listed as endangered or threatened, or to attempt to engage in any such conduct (50 CFR 17.3). *Harm* has been defined by the Service to mean an act that actually kills or injures wildlife, and may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR 17.3). *Harass* has been defined to mean an intentional or negligent act or omission that creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns that include but are not limited to breeding, feeding, or sheltering (50 CFR 17.3). Section 10 of the ESA contains exceptions and exemptions to section 9, if such taking is incidental to the carrying out of an otherwise lawful activity.

1.5.1.3. MIGRATORY BIRD TREATY ACT

Nearly all native migratory birds of the United States are protected under the Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 USC 703–712 et seq). This act states that it is unlawful to pursue, hunt, take, capture, or kill; attempt to take, capture, or kill; possess, offer to sell or sell, barter, purchase; or deliver or cause to be shipped, exported, imported, transported, carried, or received any migratory bird, part, nest, egg, or product. *Take* is defined as “to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect.” No process for authorizing incidental take of MBTA-protected birds or for providing permits is described in the MBTA (Service and National Marine Fisheries Service [NMFS] 1996). In this case, if the HCP is approved and the Service issues an ITP to the Applicant, the terms and conditions of that ITP would also constitute a Special Purpose Permit under 50 CFR 21.27, and any take of Covered Species would not be in violation of the MBTA. Take of other non-federally listed MBTA bird species are not be authorized under the ITP and Special Purpose Permit, however.

1.5.1.4. FEDERAL AVIATION ADMINISTRATION REGULATIONS

The FAA mandates that airport sponsors maintain a safe operating environment. This includes conducting a Wildlife Hazard Assessment (WHA) and preparing a WHMP when there has been a significant wildlife strike or other triggering event (14 CFR 139.337). A WHMP identifies the specific actions an airport sponsor will take to mitigate the risk of wildlife strikes at or near the airport and includes strategies to address aviation wildlife hazards specific to the airport location. These strategies can include, but are not limited to, hazing or harassment of species of concern to aviation safety; trapping and translocating problem wildlife; modifying habitat; and managing food, water and vegetation.

To the extent that any such activities require approval by the FAA, or involve federal funds such as the FAA’s Airport Improvement Program (AIP), a federal nexus would exist and consultation under Section 7 of the ESA would be required. For example, development of the SW Quad

would require a modification to the Port's existing Airport Layout Plan (ALP) and would likely involve AIP grant funds. These FAA actions would trigger the requirement for Section 7 consultation for streaked horned larks at the SW Quad.

When a project involves a federal nexus, an existing HCP may assist the responsible federal agencies by providing conservation options to address incidental take. The HCP (SWCA 2016) has been designed to address anticipated take from the development of SW Quad (7 streaked horned lark nesting pairs) in an effort to assist the FAA in future consultations at PDX by providing a convenient mitigation options, should the FAA choose to mitigate for effects to threatened or endangered species covered in the HCP.

The take of streaked horned larks evaluated in this EA are limited to the take requested in the ITP application. Development at SW Quad is included in this EA as a cumulative impact. See section 3.5.3.1.1.

1.5.2. State Regulatory Context

1.5.2.1. OREGON ENDANGERED SPECIES ACT

The Oregon Endangered Species Act (Oregon ESA) offers protection to species listed as threatened or endangered at the state level (ORS 496.002–496.192) and is administered by the Oregon Department of Fish and Wildlife (ODFW). The Oregon ESA applies only to state agencies and actions on state-owned or leased lands. To implement the proposed conservation measures on Sandy Island, the Applicant would enter into a 30-year-term conservation easement with DSL, the entity that owns the dredged material that comprises the Sandy Island Conservation Area.

Several state-listed species were evaluated to determine the likelihood of their existence within the Sandy Island Conservation Area. These species include: Chinook salmon (*Oncorhynchus tshawytscha*), coho salmon (*O. kisutch*), northern spotted owl (*Strix occidentalis caurina*), and the marbled murrelet (*Brachyramphus marmoratus*). For each species, no suitable habitat occurs on Sandy Island, and specifically for fish species, no in-water work or shoreline activities are proposed.

1.5.2.2. OREGON ADMINISTRATIVE RULES 635-043-0051

Under OAR 635-043-0051 to 0115, a property owner must obtain a Wildlife Harassing Permit (WHP) from ODFW before harassing any wildlife on their property. Harassment is defined as any act that frightens or chases, but does not kill, wildlife. Harassment can be employed for scientific purposes pursuant to ODFW programs; to protect against a threat to human safety; to protect land or property from damage; for wildlife management purposes pursuant to ODFW programs; for rehabilitation of sick, injured, or orphaned wildlife; or law enforcement activities. A WHP is not required for entities possessing a valid Federal migratory bird permit authorizing harassment of migratory bird species. The Applicant currently possesses a Federal migratory bird permit that typically gets renewed annually.

1.6. Scope of Environmental Assessment

The Service has prepared this EA to evaluate the impacts of issuing an ITP to authorize incidental take of streaked horned larks and to evaluate the impacts of providing commensurate mitigation for streaked horned larks through approval of an HCP. The scope of the analysis in this EA covers the direct, indirect, and cumulative effects of the proposed incidental take and the mitigation measures proposed in the HCP.

With the exception of the streaked horned lark, no other federally- or state-listed threatened or endangered species have been documented in the Project Areas (SWCA 2016: Appendix D). Potentially present species that have been proposed for listing were also reviewed. However, it has been determined that suitable resources are not present, and that actions from the covered activities would not rise to the level of incidental take. Therefore, these species are not carried forward for analysis.

1.7. Public Involvement and Agency Coordination

The Applicant has coordinated with the Service regarding the need for an HCP and incidental take authorizations (see Section 1.3 of the HCP, SWCA 2016). Additionally, the Applicant assembled a Science Advisory Team (SAT) composed of streaked horned lark experts from the American Bird Conservancy (ABC), the Center for Natural Lands Management (CNLM), and The Nature Conservancy (TNC). The SAT provided technical guidance to the Applicant on matters relating to the scientific adequacy of the impact assessment and conservation strategy proposed in the HCP (SWCA 2016). The Applicant also coordinated with DSL and the U.S. Army Corps of Engineers (USACE) with respect to mitigation measures and future use in the Sandy Island Conservation Area.

This draft EA will be released for agency and public comment during a 45-day public review period. Feedback and comments received during that period will be reviewed and incorporated, as applicable, within the EA. Responses by the Service to all substantive comments will be provided in the final EA, which is anticipated to be released in 2017.

Chapter 2. ALTERNATIVES INCLUDING THE PROPOSED ACTION

This chapter describes the two alternatives (No Action and the Proposed Action) developed for consideration in this EA. Several additional alternatives were considered; the reasons these alternatives were eliminated from detailed evaluation are summarized in Section 2.4.

2.1. No Action Alternative

A No Action alternative serves as a baseline for comparison of potential project effects. Under the No Action Alternative for the Project, an ITP pursuant to section 10(a)(2)(B) of the ESA would not be issued by the Service, and the Applicant's HCP would not be approved. An ITP is not legally required for implementation of the PDX WHMP, but any incidental take outside the 4(d) Special Rule exemption would not be authorized and the Applicant would assume all legal liability for unauthorized take without an ITP.

Under the No Action Alternative, the Applicant would not use the Project Areas in a way that would result in the incidental taking of streaked horned larks outside activities associated with the PDX WHMP under the 4(d) Special Rule Exemption. As discussed in Section 1.2, the Applicant has unintentionally created suitable streaked horned lark habitat within the Project Areas. Given that there is no mandate for continued maintenance of vegetation in the Project Areas, the Applicant would cease active site management contributing to the creation of suitable streaked horned lark habitat, and allow the Project Areas to naturally transition out of suitable habitat as described below:

- The Applicant would suspend all active site management activities on Rivergate until suitable streaked horned lark habitat no longer exists. Once streaked horned larks no longer breed on-site, and streaked horned larks do not occupy the project area, the Applicant would move forward in developing the parcels.
- The Applicant would continue to rely on the authority of the 4(d) Special Rule to continue aviation wildlife hazard management activities on SW Quad, likely changing the type of management strategies to those that do not favor the creation or maintenance of streaked horned lark habitat. It is expected that streaked horned larks would leave the site before development of the SW Quad occurs.
- The Applicant would not implement the Sandy Island Conservation Area to provide conservation benefit to streaked horned larks. Without active site management to maintain and improve suitable streaked horned lark habitat at this site, increasing levels of encroaching vegetation would naturally transition the site out of suitable and occupied critical habitat.

2.2. Proposed Action

The Proposed Action would be the issuance of a section 10(a)(1)(B) 30-year (from the date of issuance) ITP to the Applicant to authorize incidental taking of streaked horned larks that may result from Covered Activities, including the contingency of the 4(d) Special Rule changing in applicability. Covered Activities are summarized in Section 1.2.5 of this EA and described in detail in Section 4 of the HCP (SWCA 2016).

A summary of the proposed take is provided in Table 3, and rationale for take levels is provided in Section 5 of the HCP (SWCA 2016). Should it become evident that the maximum authorized take for the streaked horned lark is likely to be exceeded before the end of the ITP, the Applicant would initiate an ITP amendment through written notification to the Service.

Table 3. Estimated Amount of Take from the Covered Activities

Project Area/Activity	Total Site Acreage	Estimated Acreage of Suitable Streaked Horned Lark Nesting Habitat	Site-Specific Territory Density	Estimated Take
Rivergate Development <i>(permanent habitat loss anticipated in Permit Years 1–3)</i>	120.6 acres	50.2 acres <i>(40.7 acres of existing habitat plus 9.5 acres of additional habitat created by interim conservation measures)</i>	6.8 acres/pair	8 nesting pairs
SW Quad Development <i>(permanent habitat loss anticipated in Permit Years 20–30)</i>	204.7 acres	127.9 acres <i>(77.0 acres of existing habitat plus 50.9 acres of additional habitat created by conservation measures)</i>	19.3 acres/pair	0 nesting pairs*
Uncertainty Allowance for Development Activities	estimated as 50% of the anticipated taking on Rivergate and the SW Quad <i>(15 nesting pairs × 0.5 = 8 nesting pairs)</i>			8 nesting pairs
PDX Intermediate Zone WHMP Implementation <i>(subject to changed circumstances, take of 1 nesting pair each year of ITP term, on average, or up to 30 pairs over 30 years)*</i>	4,866.7 acres	unknown	unknown	30 nesting pairs**
Sandy Island Conservation Area	Conservation activities would be performed outside the nesting season, and are highly unlikely to rise to the level of take, as defined by the ESA.			
Total Take Request				53 nesting pairs

* This amount of take is estimated to be 7 SHLA nesting pairs at the time of this EA. However, since this take would be evaluated under future consultations under Section 7 for the ultimate development of SW Quad (based on data available at that time), it is not included in this take request. Impacts as a result of this take are evaluated in the HCP (SWCA 2016) to prepare for future Section 7 consultations (see section 3.5.3.1.1).

** This amount of take is only released to the Applicant if the streaked horned lark 4(d) Special Rule no longer addresses take related to the Port’s aviation wildlife hazard management activities within the PDX Intermediate Zone.

To help ensure that the actual amount of take that will occur as a result of these Covered Activities is fully covered by the ITP, the Port requests an additional allowance of eight nesting pairs in its requested take authorization. This additional allowance represents a 50 percent increase in the anticipated amount of take from the loss of habitat at Rivergate and the SW Quad. The size of this “uncertainty allowance” is well within the magnitude of the fluctuation in the

occupancy data for the Plan Area. For example, the number of SHLA nesting pairs on Rivergate increased from three in 2012 to six in 2013 (a 100 percent increase), and the number of nesting pairs on the SW Quad increased by 50 percent between 2009 and 2010 and again between 2010 and 2011. Additionally, while not requested under the ITP application but evaluated for in the HCP, 7 streaked horned lark nesting pairs are estimated to be taken as a result of the future development SW Quad. See section 3.5.3.1.1. Conservation Measures for Proposed Action

2.2.1.1. AVOIDANCE AND MINIMIZATION

Avoidance and minimization measures under the Proposed Action would include refraining from conducting vegetation management (such as mowing or discing in preparation for land development) within Rivergate and SW Quad during the streaked horned lark nesting season (April 1-August 31) to avoid directly killing or wounding individuals or causing nest abandonment.

2.2.1.2. MITIGATION MEASURES

Table 4 summarizes proposed mitigation measures the Applicant would implement to offset anticipated take of streaked horned larks. Mitigation measures proposed to offset impacts from Covered Activities are based on anticipated levels of incidental take, and would be subject to review by the Service over the life of the permit. Mitigation measures could be modified or continued without modification, depending on measured levels of take and the success of mitigation measures, and as agreed upon by the Applicant and the Service.

Monitoring of the implementation and success of proposed mitigation measures could also lead to implementation of adaptive management. Should mitigation measures or locations be identified or otherwise become available that would present the Applicant with a greater chance of meeting the biological goals and objectives of the proposed HCP, the Applicant would reserve the right to propose such mitigation or locations instead of the measures identified below, if such mitigation receives approval from the Service.

All required state and Federal permits would be obtained before the implementation of any mitigation measure.

Table 4. Summary of Mitigation Measures for the Proposed Action

Interim Conservation Measures	<ul style="list-style-type: none"> Continue to conduct routine site management in accordance with the PDX WHMP (Port of Portland 2009) by mowing or discing the areas of suitable streaked horned lark habitat within the SW Quad. The Applicant would conduct site management on each of the parcels of the Rivergate Project Area until the parcels become developed. The Applicant would conduct routine site management at the SW Quad both prior to and after the drainfield replacement, until development occurs.
Sandy Island Conservation Area	<ul style="list-style-type: none"> Provide for the protection, management, and monitoring of approximately 32 acres of currently suitable and restorable streaked horned lark habitat at the proposed Sandy Island Conservation Area. Implement management and monitoring program consisting of recurring mechanical vegetation management, scotch broom control, tree removal, and visitor signage. If appropriate, set aside funding within the Applicant's annual operating budget for implementation of adaptive management strategies such as filling the basin or additional signage.
Streaked Horned Lark Research Program	<ul style="list-style-type: none"> Allow access to the Sandy Island Conservation Area to further knowledge of streaked horned larks. Work with Federal, local, and state agencies to implement projects funded by grant opportunities under the ESA. Banding fledgling streaked horned larks in Rivergate and SW Quad based on nest search surveys prior to construction.

2.2.1.2.1. Interim Conservation Measures

Interim conservation measures consisting of the reinstatement or continuation of occasional mowing or discing at the Rivergate, and continued implementation of the PDX WHMP at SW Quad would satisfy the Applicant's need to properly maintain its properties, but incidentally benefit the streaked horned lark by maintaining the characteristics of suitable habitat until development occurs. In Rivergate, this routine site management would continue until the parcels become developed (estimated to occur between Permit Years 1 and 3), and in the SW Quad, maintenance would occur both before and after the drainfield replacement until future development occurs. At SW Quad, site management activities are meant to address hazards associated with aviation wildlife species of concern and could be modified to ensure compliance with the PDX WHMP, as required.

2.2.1.2.2. Sandy Island Conservation Area

The Applicant would provide for the protection and management of 32 acres of streaked horned lark critical habitat on Sandy Island for 30 years. Landscape disturbances from USACE associated with the fill of dredged material comprising the island's makeup, which ended in 2011, were a primary contributor to creating suitable streaked horned lark habitat. With those activities ended, the Applicant proposes to maintain and improve existing streaked horned lark habitat through recurring mechanical vegetation management, scotch broom control, tree removal, and signage. A detailed description of these efforts can be found in section 6.3.2 of the HCP (SWCA 2016). All of these activities would be implemented outside of the streaked horned lark nesting season, which occurs between April 15 and August 15 (Anderson 2011).

Acquiring approval to operate and maintain the Sandy Island Conservation Area requires the Applicant to work closely with the DSL in order to obtain a conservation easement that supports the conservation area's intended use and management. The easement may include terms allowing the Applicant to erect signage preventing public access into the conservation area. Under this easement, mining or deposition of sand (a commodity owned by DSL) would be an acceptable

use of the proposed Sandy Island Conservation Area provided that activities occur outside of the streaked horned lark nesting season and are otherwise compatible with streaked horned lark conservation. DSL has the right to grant additional easements that do not interfere with the Applicant's permitted uses under the conservation easement (Oregon Administrative Rule 141-122-0010 to 0120). Any decision to renew the conservation easement rests solely with DSL.

2.2.1.2.3. Streaked Horned Lark Research Program

In order to further understanding of the streaked horned lark ecology and management, the Applicant would support providing access to the Sandy Island Conservation Area for research opportunities. The applicant would also be willing to work with local research organizations through collaborative funding and partnerships if a suitable opportunity arises, such as implementing projects supporting recovery goals of the streaked horned lark funded by the Cooperative Endangered Species Conservation Fund.

Also in support of research efforts, the Applicant would band fledgling streaked horned larks born in the Rivergate or SW Quad areas in the nesting season immediately prior to anticipated habitat loss from development or drainfield system replacement. At Rivergate, any parcels developed in Permit Year 1 would be cleared prior to the nesting season and bird banding would not occur at those sites. The Applicant would conduct up to six nest search surveys in the season immediately prior to construction to locate nests at Rivergate and the SW Quad. If nests have been located, monitoring of nests would dictate timing for banding of fledglings. Banding of fledglings at the Project Areas would be conducted by a qualified avian biologist and in accordance with all applicable permit requirements. At Rivergate, it is assumed that only one season of nest search surveys and banding would be completed across the site given that the Applicant plans to begin development immediately upon issuance of an ITP. At the SW Quad, nest search surveys and banding would be completed in the season prior to replacement of the drainfield system.

2.2.2. Monitoring and Reporting

2.2.2.1. NESTING SEASON SURVEYS

The Applicant would perform monitoring at Rivergate for one season (based on the current development schedule), and annually at the SW Quad until these sites are developed. Annual monitoring at the proposed Sandy Island Conservation Area would be implemented throughout the term of the ITP.

Development on the Rivergate properties is scheduled for Year 1 through Year 3 of the proposed permit term (Green 2016). At the time of this EA, the largest parcel at Rivergate has received an offer for lease and would likely be the first parcel developed, with other available parcels quick to follow (Green 2016). The Applicant estimates that all Rivergate parcels would be developed by Year 3 of the proposed permit term. In the event that development does not begin immediately upon issuance of an ITP, the Applicant would conduct annual monitoring until the site is developed.

In addition, the Applicant would also perform modified vegetation cover point intercept surveys to collect data on the amount of vegetation, moss, and bare ground at the Project Areas (Bonham 1989). All streaked horned lark surveys would occur between late April and mid-July. Vegetation cover monitoring would be conducted between late May and early June (SWCA 2016).

In Permit Year 1, the Applicant would estimate the abundance of nesting streaked horned larks across the entire Plan Area. Abundance surveys would be repeated annually during Permit Years 2 through 5 on portions of the Plan Area that have not been developed (including drainfield system replacement at the SW Quad). After Permit Year 5 and through the end of the ITP term, the Applicant would reduce the frequency of abundance surveys on undeveloped portions of the Plan Area to once every three years. Following completion of the drainfield system replacement, the Applicant would add the SW Quad back to the area subject to abundance survey.

Should a parcel of Rivergate, the SW Quad, or the Sandy Island Conservation Area be found to be unoccupied in any particular year, the Applicant would consult with the Service for guidance on standard monitoring protocols to detect the presence of streaked horned larks. Monitoring methods proposed can be found in section 6.0 of the HCP (SWCA 2016).

On each site, vegetation surveys would be performed in the same year as abundance and trend surveys.

Field data would be collected using standardized data collection forms. Streaked horned lark observations would be recorded on field maps and with global positioning system (GPS) units. Survey results would be submitted to the Service as part of the annual report.

2.2.2.2. WINTER AND FALL SURVEYS

The Applicant would perform winter and fall season surveys at the Sandy Island Conservation Area annually for the entire ITP term. To date, there are no formal survey protocols for streaked horned lark winter and fall season surveys. Until such protocols are developed, the Applicant would conduct winter and fall season surveys using an area search method (Ralph et al. 1993). The area search is a quantitative, habitat-specific survey method that is useful for assessing the relative abundance of non-nesting streaked horned larks. One winter survey would be conducted in January and one fall survey would be conducted between September 10 and October 15. Survey data and related information would be provided to the Service in the annual report. Monitoring methods proposed can be found in section 6.0 of the HCP (SWCA 2016).

2.2.3. Funding

The Applicant would provide funding for the required conservation (monitoring, minimization, adaptive management, and mitigation) measures as described in the HCP over the course of the 30-year permit term. Funding would be provided as an operational expenditure within the Applicant's annual budget. Cost estimates are provided in Table 5. If necessary, additional funds not included in the following table may be set aside within the Applicant's annual operating budget for implementation of adaptive management strategies such as filling the basin or additional signage.

All cost estimates are stated in constant 2016 dollar terms.

Table 5. Funding for Proposed Action Conservation Measures

Task	Duration	Description	Annual cost	Total cost (1.5% annual inflation)
Rivergate Project Area (120.6 acres, buildout Year 3)				
Initial vegetation management	Year 1	Removal of woody vegetation and Year 1 mowing	\$6,294.80	\$6,294.80
Recurring vegetation management	Year 2–3	Mowing annually, ceases once all parcels are developed	\$3,882.80	\$7,940.33
Bird banding - nest search and monitoring	Year 1	6 6-hour surveys, 1 biologist, in season immediately prior to construction of Rivergate Parcel A1	\$4,352.80	\$4,352.80
Bird banding	Year 1	2 6-hour banding sessions, 2 biologists	\$3,059.60	\$3,059.60
Nesting season surveys	Year 1–3	3 6-hour surveys, 1 biologist	\$2,176.40	\$6,627.14
Winter and fall surveys	Year 1–3	2 6-hour surveys, 1 biologist	\$1,535.60	\$4,675.90
Annual report	Year 1–3	Ceases once all parcels are developed	\$3,111.00	\$9,473.00
			<i>Rivergate Total</i>	\$42,423.56
SW Quad Project Area (204.7 acres, ~124 acres for annual discing, drainfield project in Year 1, development in Year 25)				
Recurring vegetation management	Year 1–25	Discing of 124 acres for 25 years (annually)	\$3,984.80	\$117,551.60
Bird banding - nest search surveys and monitoring	Year 1	6 6-hour surveys, 1 biologist, in season immediately prior to drainfield construction	\$4,098.80	\$4,098.80
Bird banding	Year 1	2 6-hour banding sessions, 2 biologists	\$3,059.60	\$3,059.60
Nesting season surveys	Year 1–25	3 6-hour surveys, 1 biologist, Years 1–5 and then every 2–3 years (12 survey years)	\$2,176.40	\$30,066.97
Winter and fall surveys	Year 1–25	2 6-hour surveys, 1 biologist, Years 1–5 and then every 2–3 years (12 survey years)	\$1,535.60	\$19,586.58
Annual report	Year 1–25	Ceases when site is fully developed	\$3,111.00	\$91,774.50
			<i>SW Quad Total</i>	\$266,138.04
Sandy Island Conservation Area (32 acres; 30 years)				
Conservation management plan	Year 1	Prepare plan in Year 1	\$6,813.00	\$6,813.00
Conservation management plan: 5-year review and updates	Year 5–25	Every 5 years (5 updates over 30 years)	\$3,028.00	\$22,664.58
Initial vegetation management	Year 1	Initial tree removal, Scotch broom removal, and discing/scraping of vegetation over half of site	\$45,264.80	\$45,264.80
Signage	Year 1	Design, fabrication, installation, maintenance (during monitoring visits); to be installed during initial clearing; 5 signs	\$2,754.00	\$2,754.00
Recurring vegetation management	Year 1–30	Discing/scraping of vegetation over half of site and Scotch broom control once every 3 years (10 events total)	\$3,054.00	\$38,052.84

Table 5. Funding for Proposed Action Conservation Measures

Task	Duration	Description	Annual cost	Total cost (1.5% annual inflation)
Nesting season surveys	Year 1–30	3 8-hour surveys, 2 biologists, Years 1–5 and then every 2–3 years (13 survey years)	\$7,467.80	\$113,883.95
Winter and fall surveys	Year 1–30	2 8-hour surveys, 2 biologists, Years 1–5 and then every 2–3 years (13 survey years)	\$5,063.20	\$77,213.80
Annual report	Year 1–30	Years 1–30	\$4,034.00	\$147,341.85
			Sandy Island Total	\$453,988.82
Administrative				
Annual coordination with Service, project management	Year 1–30	15 hours per year over 30 years	\$1,905.00	\$69,580.13
Conservation easement	Year 1	Flat fee payable to DSL	\$9,546.00	\$9,546.00
			Administrative Total	\$79,126.13
Contingency Fund				
Total Contingency fund		10% of total project cost annually	\$ -	\$8,916.77
GRAND TOTAL				\$850,593.32

2.3. Alternatives Considered But Not Analyzed

Under NEPA, agencies are required to rigorously explore and objectively evaluate all reasonable alternatives, and to briefly discuss the reasons for eliminating any alternatives that were not analyzed in detail. As part of this process, the Service also evaluates alternatives explored by the Applicant. Alternatives considered but eliminated from detailed analysis and the associated rationale are briefly discussed below.

2.3.1.1. ISSUANCE OF A SECTION 10(a)(1)(B) INCIDENTAL TAKE PERMIT WITH REDUCED 5-YEAR PERMIT TERM

The Service considered an alternative that would result in the issuance of an ITP and approval of the amended HCP as described in the Proposed Action, but with a reduced permit duration of 5 years. This alternative would not provide the same level of benefits as the Proposed Action given the shorter duration, and would increase the frequency of additional permit applications to authorize incidental take and offset impacts to streaked horned larks. It would not provide the necessary long-term mitigation for habitat loss given the abbreviated permit duration.

Because this alternative would greatly increase the amount of work required by the Service and the Applicant to achieve the same results expected to be gained by the Proposed Action, and would not provide sufficient mitigation, this alternative is not considered reasonable, and was not carried forward for consideration in this EA.

2.3.1.2. ALTERNATE MITIGATION SITES

The Applicant, with guidance from the Service, considered alternate mitigation site locations that currently provide or in the future could provide suitable habitat for streaked horned larks. In considering alternate locations, the following criteria were evaluated:

1. The site presents a viable conservation opportunity to provide suitable habitat capable of supporting the breeding, feeding, and sheltering of streaked horned larks.
2. Proximity of site with respect to the Columbia River streaked horned lark population region. The site should be close enough to the project areas to accommodate a shorter distance between current nesting sites and the mitigation site for displaced streaked horned larks.
3. Operation and management activities are consistent with ESA regulations and current land use and designation.

Table 6 provides the locations considered, and the rationale for dismissal from analysis.

Table 6. Alternate Mitigation Sites Considered and Dismissed

Site	Location and Description	Streaked Horned Lark Population Region*	Streaked Horned Lark Presence/Habitat Potential	Rationale for Dismissal
Sauvie Island Wildlife Area	Recreation and conservation area pasture/grassland habitat located in Multnomah and Columbia counties.	CR	Potentially suitable streaked horned lark habitat with initial and recurring vegetation management.	Landowners indicated that they were unwilling to commit their property for habitat mitigation for a single species, and were concerned about the undefined and long-term ESA requirements for the streaked horned lark. In addition, landowners expressed concerns about accepting mitigation for industrial development on their conservation sites. Due to lack of cooperation from landowners, this location was dismissed.
St. Johns Landfill	Conservation area located within the Smith and Bybee Wetlands Natural Area in north Portland, Oregon.	CR	Potentially suitable streaked horned lark habitat with initial and recurring vegetation management.	Landowners indicated that they were unwilling to commit their property for habitat mitigation for a single species, and were concerned about the undefined and long-term ESA requirements for the streaked horned lark. In addition, landowners expressed concerns about accepting mitigation for industrial development on their conservation sites. Landowners also raised concerns regarding the ability to access and operate the landfill systems required for landfill closure. Examples included landfill cover, methane collection, and leachate collection. Due to conservation measures being incompatible with landfill operation procedures, this location was dismissed.
Rivergate Corporate Center Habitat Roofs	Convert existing building roofs to suitable streaked horned lark habitat within the Rivergate Industrial Area, Portland Oregon.	CR	Creation of potentially suitable streaked horned lark habitat.	Existing roofs and support structures were not designed to handle the additional loads for a habitat roof consisting of a thick layer of soil, and would require extensive upgrades to accommodate the associated water content. Additionally, systems required to operate and occupy the building such as heating, ventilation, and air-conditioning (HVAC), may be inaccessible or compromised by airborne particulates expected within streaked horned lark habitat. The ability to utilize skylights for natural light would be removed, requiring a higher amount of interior lighting and expended energy use. It is unknown how common operational maintenance, such as a leaking roof repair, could be addressed within a streaked horned lark ESA habitat and in compliance with undefined and long-term ESA requirements.
Other Large Sites	Undeveloped areas within the Portland Metropolitan Area that contain or could contain suitable habitat for streaked horned larks, and have a cooperating land use designation.	CR	Potentially suitable streaked horned lark habitat with initial and recurring vegetation management.	Within the Urban Growth Boundary (UGB), the required large, flat, open habitat patch size, as well as established land use constraints on the remaining undeveloped areas limit the opportunities for alternate streaked horned lark habitat. The Applicant evaluated all known available property within the region, and was unable to identify a site with conditions (habitat and ownership) suitable for streaked horned lark nesting habitat.

Table 6. Alternate Mitigation Sites Considered and Dismissed

Site	Location and Description	Streaked Horned Lark Population Region*	Streaked Horned Lark Presence/Habitat Potential	Rationale for Dismissal
Willamette Valley Nature Conservancy Preserves	Multiple sites were considered including Yamhill Oaks Preserve and Noble Oaks Preserve. Sites are located within the Willamette Valley, Yamhill and Polk counties.	WV	Occupied and/or potentially suitable streaked horned lark habitat with initial and recurring vegetation management.	While sites within the WV population region and associated wildlife preserves do contain suitable streaked horned lark habitat, it is unlikely that streaked horned lark displaced from the covered activities would benefit from mitigation efforts at these locations. Therefore, these locations were dismissed from evaluation.
Wapato Valley Mitigation and Conservation Bank	Approximately 61 acres of upland floodplain to be enhanced for streaked horned lark breeding habitat located in Ridgefield, Washington.	CR	Potentially suitable streaked horned lark habitat with initial and recurring vegetation management.	At the time of this EA, the proposed mitigation bank had not been established, and a definite timeframe or approval was not available for analysis. Therefore, this site was dismissed from evaluation.
Kelso-Longview Development Site	Approximately 88 acres of private, commercially-zoned (multi-use) land located in Kelso, Washington.	CR	Potentially suitable streaked horned lark habitat with initial and recurring vegetation management.	The costs associated with acquiring and developing prime industrial real estate for conservation purposes are not feasible for the Applicant. Additionally, this site is no longer listed for sale.
Government Island Mitigation Site Proposal	Owned by Port of Portland, there are approximately 100 acres of potentially suitable habitat, given that changes in current habitat and management occur.	CR	Potentially suitable habitat with initial and recurring vegetation management, public access restrictions and predator control.	There are significant land-use conflicts with the Oregon Parks and Recreation Department's managed state/public recreation area. Additionally, there are anticipated predator management difficulties. Combined, the operation and maintenance costs associated with both issues would be high, and recurring. To date, there is no documented presence or historical use by streaked horned larks (speculative), and FAA constraints on land use may also apply. Therefore, this alternative was dismissed as not a viable option for mitigation.
Port Mitigation Sites	Multiple mitigation sites throughout Applicant-owned properties.	CR	Potentially suitable habitat with initial and recurring vegetation management, public access restrictions and predator control.	All currently active mitigation sites or areas identified for mitigation efforts have been designated for species other than the streaked horned lark, and in some cases, habitat modification would not be conducive to suitable streaked horned lark habitat.

*CR—Columbia River, WV—Willamette Valley

2.3.1.2.1. Staggered Land development and Interim Conservation Measures at Rivergate

The Service considered an alternative that would allow for interim conservation measures to be implemented at the Rivergate project areas on a staggered schedule assuming that development of the parcels would be completed over the length of the permit. After consulting with the Applicant, it was determined that the plan for development on the Rivergate properties is scheduled for Year 1 through 3 of the proposed permit term (Green 2016). At the time of this EA, the largest parcel at Rivergate has received an offer for lease and would likely be the first parcel developed, with other available parcels quick to follow (Green 2016). The Applicant estimates that all Rivergate parcels would be developed by Year 3 of the proposed permit term.

Based on the proposed schedule and demand for property development within Rivergate, this alternative was dismissed since interim conservation measures before development in Years 1 to 3 are already included in the proposed action.

2.3.1.2.2. Alternate Land Development Options and Locations

The Service considered other properties (either Applicant-owned or for purchase by Applicant) potential as suitable for development similar to the Rivergate and SW Quad parcels outside of streaked horned lark habitat. Other properties, such as the Troutdale Reynolds Industrial park or Swan Island Industrial Park, did not offer comparable development opportunities based on the following (Port of Portland 2016):

- Size of developable parcels was less than the available acreage at the Project Areas;
- Unit train access via the two class one rail roads (Union Pacific Railroad and BNSF Railway) is not available;
- The concentration of existing industry clusters, such as those found at Portland Harbor, is not replicated at other available sites;
- Airside-access, such as that found at SW Quad, is not available at any other location.

Development of Rivergate and SW Quad would occur outside of the issuance of an ITP. Habitat at these locations was inadvertently created by active site management activities performed by the Applicant. There is no mandate for continued site management to maintain streaked horned lark habitat. If an ITP is not issued the Applicant would cease active site management at these locations and would develop them once suitable streaked horned lark habitat is not present. Additionally, if an ITP is not issued, conservation measures would not be implemented, providing no benefit to streaked horned lark. Therefore, this alternative was dismissed from analysis since development would occur regardless of an ITP being issued.

The Service also raised questions regarding the ability to modify existing infrastructure to provide the same function as the proposed development at Rivergate and SW Quad. Potential properties that might be considered are already sold or leased to tenants, and the Applicant does

not have the authority to retrofit existing structures to provide a comparable level of development as provided in the Proposed Action.

2.3.1.2.3. No Interim Conservation Measures

Under this alternative, interim conservation measures would not be implemented at Rivergate or the SW Quad. Therefore, the routine site management that promotes the persistence of suitable habitat for the streaked horned lark would not occur and the overall net benefit of the HCP would be reduced. Additionally, the Applicant would exclude from the Plan Area boundary those Rivergate parcels that are not currently known to be occupied by the streaked horned lark.

This alternative was not chosen because 1) the conservation measures at Rivergate and the SW Quad exemplify the Applicant's commitment to ensuring the optimal conservation benefit to the subspecies; 2) the streaked horned lark's strong fidelity for nesting sites (Pearson et al. 2008) may prompt nesting pairs to occupy other lands within the vicinity for which the Applicant would not have ESA Section 10 assurances; 3) winter and nesting habitat would not be available in the interim as parcels at Rivergate are developed, thereby reducing the potential for these individuals to persist in the area; and 4) the maintenance of field conditions as suitable habitat for streaked horned lark also satisfies vegetation standards for aviation wildlife hazard management at the SW Quad and standard maintenance regime for much of the Applicant's vacant industrial land.

Chapter 3. AFFECTED ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION MEASURES

3.1. Introduction

This chapter describes and analyzes the biological resources that would be affected under the No Action Alternative and the Proposed Action. For the purposes of this EA, impacts from the implementation of the Covered Activities and associated conservation measures are provided for in the following sections. Existing conditions are described for the Plan Area (Section 1.2), including Rivergate, PDX Intermediate Zone, SW Quad, and the Sandy Island Conservation Area.

3.2. General Setting of the Project Areas

3.2.1. Rivergate

The Rivergate Project Area consists of approximately 121 acres across six undeveloped parcels (Figure 2), and is located within the Rivergate Industrial District in Portland, Oregon, along the peninsula bordered by the Columbia and Willamette Rivers in North Portland.

Current conditions at Rivergate are the result of extensive historical fill, recurring human disturbance, and the historic development of the original floodplain and associated wetlands, sloughs, lagoons, and wet prairies of the Willamette and Columbia Rivers. The Rivergate parcels have well-drained, coarse, sandy dredged fill material substrate with sparse to moderate vegetation cover. This vegetation includes cheatgrass (*Bromus tectorum*), hare's foot clover (*Trifolium arvense*), miniature lupine (*Lupinus bicolor*), rush skeletonweed (*Chondrilla juncea*), and willows (*Salix* spp.). Approximately 25% of the Rivergate parcels' ground surface is bare (Galen 2013). Vegetation on Rivergate had previously been maintained by routine mowing, but this practice was discontinued in 2013.

Recent survey data indicate that suitable streaked horned lark nesting habitat exists on approximately 41 acres of the Rivergate Project Area within parcels A1 and A3 (Figure 2) (SWCA 2016).

3.2.2. PDX Intermediate Zone

The PDX Intermediate Zone includes approximately 4,867 acres composed of the area within the airfield perimeter fence, a 300-foot buffer around the perimeter fence, and runway protection zones (together, the Primary Zone) and Applicant-owned airport land outside of the Primary Zone, much of which is under the approach or transitional surfaces of the runways (Figure 3).

As described in the FAA-approved PDX WHMP (Port of Portland 2009), land use within the PDX Intermediate Zone must be compatible with safe aviation operations and public safety. Throughout the PDX Intermediate Zone, the Applicant implements activities to eliminate or reduce aviation wildlife hazards in accordance with the PDX WHMP (Port of Portland 2009). Vegetation is managed to deter and discourage avian species of concern to aviation safety from the airfield and surrounding properties and to reduce the risk of wildlife/aircraft collisions.

Land on the eastern end of the PDX Intermediate Zone is developed and contains paved parking lots and commercial businesses, including retail stores. Land on the west end is primarily undeveloped, and is regularly mowed or disced to maintain low, sparse herbaceous cover or bare ground (Port of Portland 2009). This regular maintenance is one of the activities carried out to reduce aviation wildlife hazards, and it promotes conditions consistent with suitable streaked horned lark habitat. However, the specific extent of currently suitable streaked horned lark habitat within the PDX Intermediate Zone is unknown.

3.2.3. SW Quad

Located within the PDX Intermediate Zone, the SW Quad area consists of approximately 205 acres of open field. It is located between Elrod Slough and the PDX South Runway (Figure 4).

Historically, the SW Quad contained extensive wetlands. However, the Applicant filled these wetlands (in accordance with applicable regulations) between 1994 and 2005 and installed a perforated pipe drainfield to prevent the recurrence of wetland habitat attractive to wildlife species of concern to aviation safety. The SW Quad is currently an open expanse of mostly barren fill material with sparse herbaceous weedy plants. Consistent with the current implementation of the PDX WHMP (Port of Portland 2009) for vegetation management, much of the SW Quad is mowed or disced annually. This management regime is subject to change at any time, consistent with PDX WHMP (Port of Portland 2009). The Applicant inadvertently created and currently maintains suitable streaked horned lark habitat in the SW Quad as a consequence of mitigating other aviation wildlife hazards at PDX.

Vegetation on the SW Quad is similar to that at Rivergate and is characterized by mostly barren fill material with sparse herbaceous weedy plants (Port of Portland 2013). The SW Quad has the following features (Atwell 2016):

- a 4-foot-tall sandy berm along the northern boundary;
- an approximately 45-acre fenced stockpile area currently housing unplaced fill material along the eastern boundary; and
- a vegetated strip of dense grasses and scattered trees along the southern boundary.

These features of the SW Quad limit the suitable habitat for the streaked horned lark. Of the 205 acres at the SW Quad, approximately 77 acres are considered suitable habitat for the streaked horned lark (Atwell 2016).

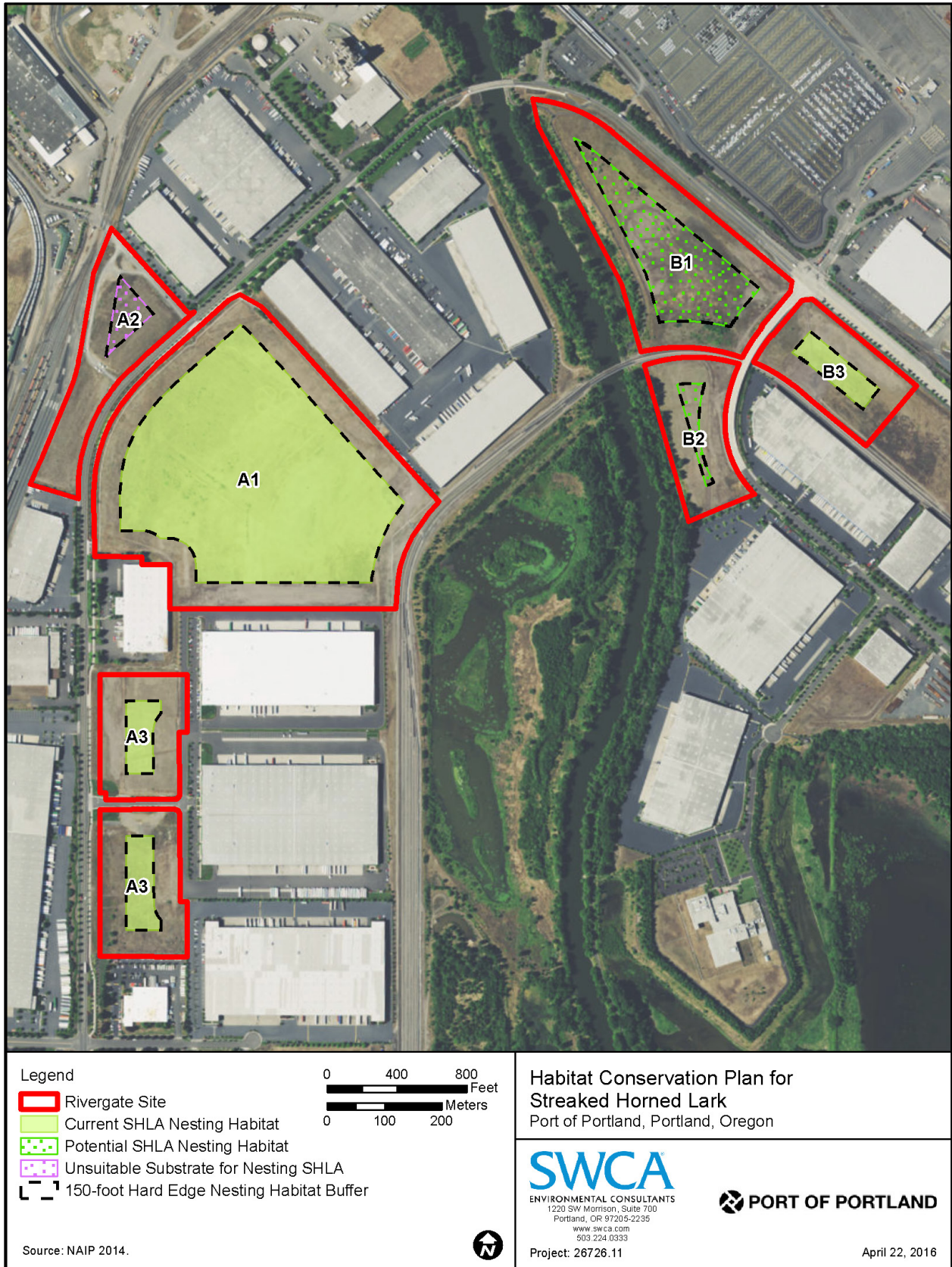


Figure 2. Rivergate Project Area

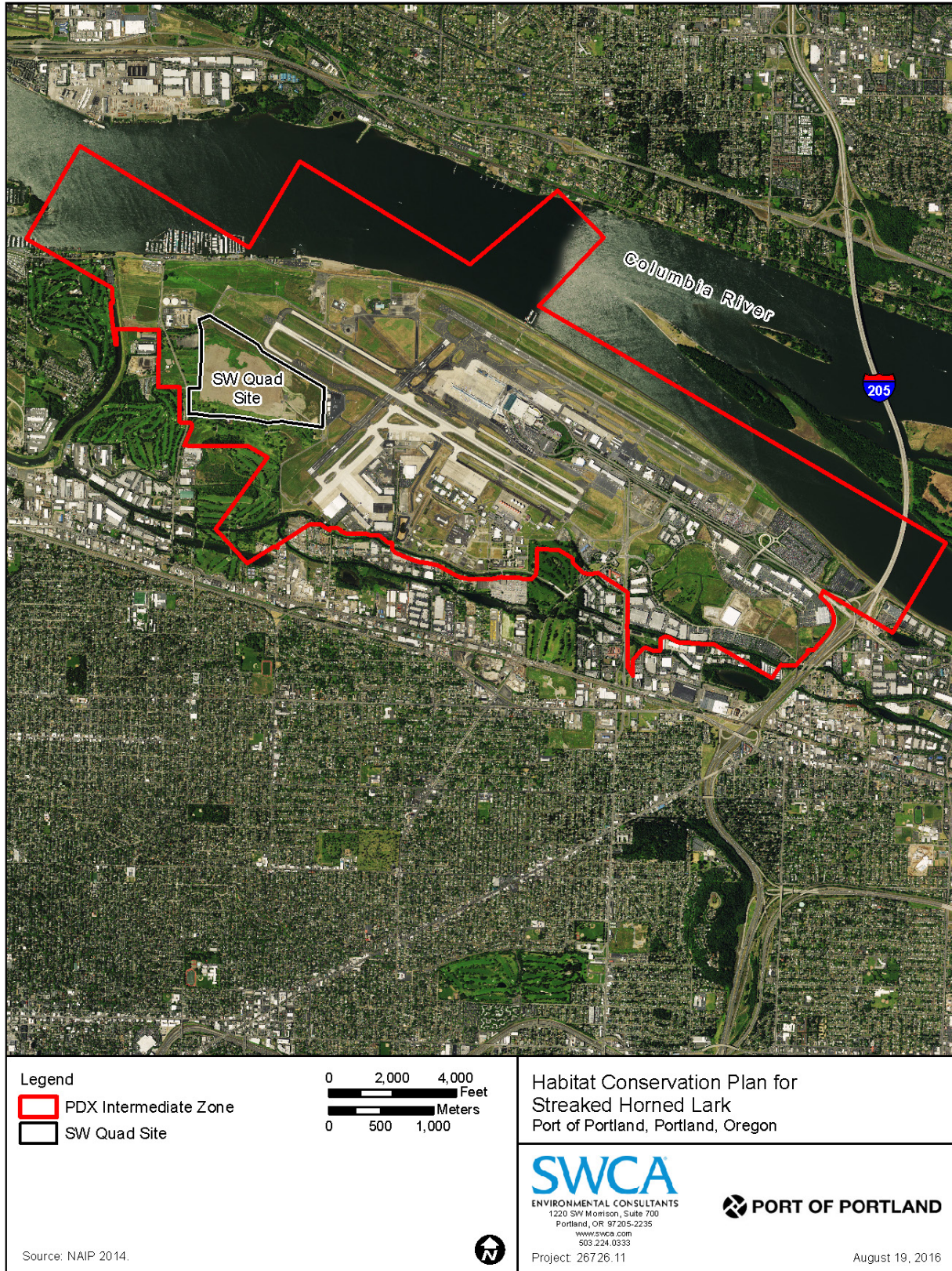


Figure 3. PDX Intermediate Zone Project Area

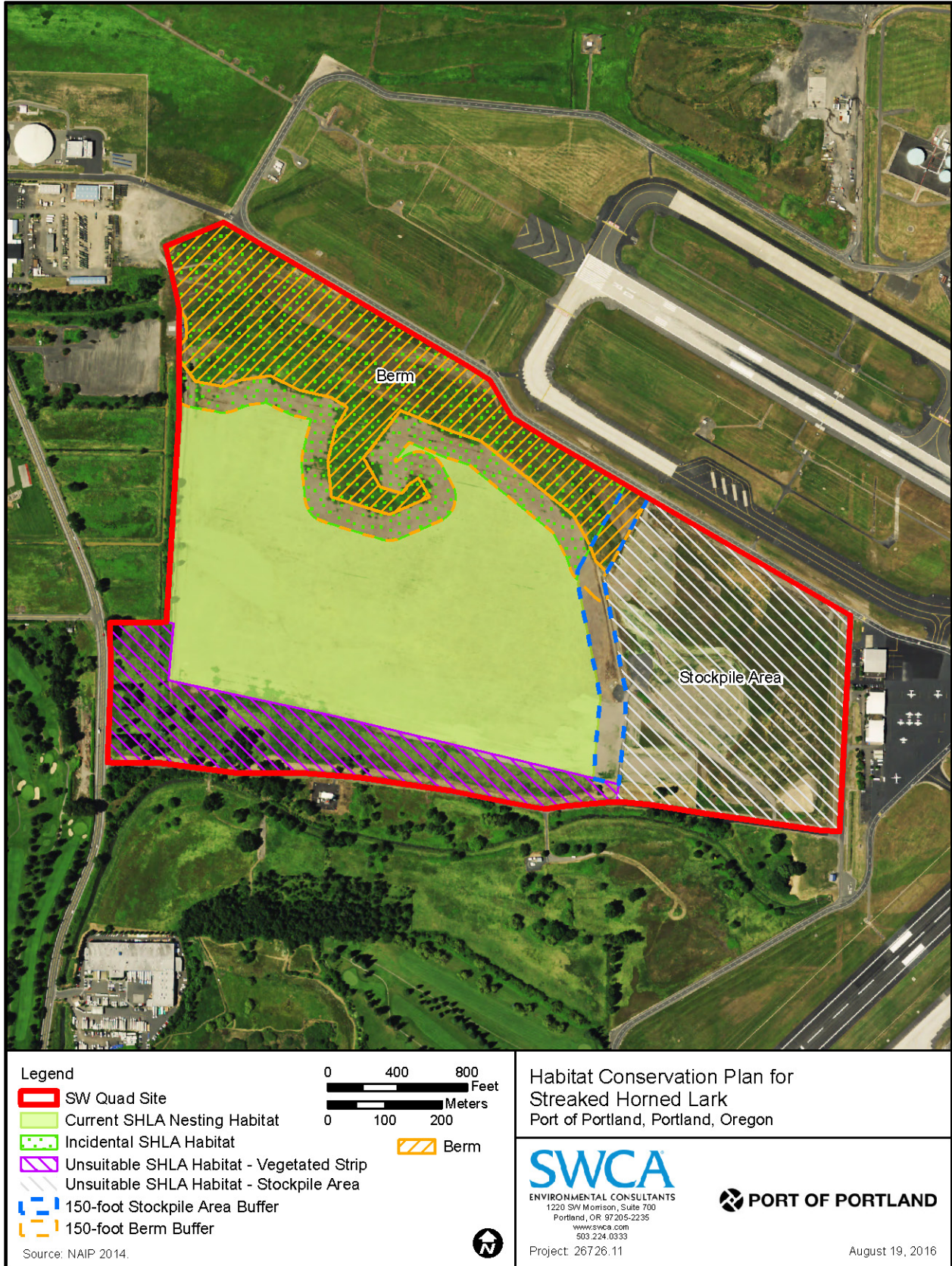


Figure 4. SW Quad Project Area

3.2.4. Sandy Island Conservation Area

Sandy Island is located in the Columbia River at River Mile 75.8, directly across from the public boat ramp at the Port of Kalama in unincorporated Columbia County, Oregon (Figure 5). Sandy Island, as a whole, is approximately 340 acres. Approximately 312 acres of Sandy Island is human-made by historic and current dredged material placement. This portion of the island is owned by DSL. The original island landform is approximately 28 acres and is in private ownership. Because Sandy Island is within waters of the State, DSL regulates the natural resources of the island. Sandy Island is open to the public and accessible by boat, attracting recreational users who use the site primarily for shoreline camping and recreational fishing.

The Applicant holds an easement from DSL for dredged material placement over approximately 32 acres of the DSL-owned portion of Sandy Island (Easement No. 33472-EA). This existing easement, valid through 2030, allows the Applicant to manage the site for dredged material deposition by the USACE, as part of the USACE's maintenance of the Columbia River Federal Navigation Channel. The proposed Sandy Island Conservation Area is the portion of Sandy Island subject to the existing 32-acre dredged material placement easement (see Figure 5).

The proposed Sandy Island Conservation Area consists of piled dredged sand with a relatively flat, sparsely vegetated plateau on it. The plateau is perched 40 to 50 feet above the shoreline and includes a small grove of approximately 20 black cottonwood (*Populus trichocarpa*) trees and a small depression along the northern portion of the site (see Figure 5). Vegetation is sparse and the land cover is a mosaic of bare sand, grasses, forbs, invasive Scotch broom (*Cytisus scoparius*) shrubs, mosses, and lichens. The land slopes steeply to the Columbia River on the east and south boundaries, and transitions abruptly to forested wetlands and riparian habitat to the west and north (see Figure 5). Scotch broom lines the steep slopes to the shoreline. The repeated placement of dredged material at the proposed Sandy Island Conservation Area, with the most recent depositions occurring between 1997 and 2011 (Anderson 2010; Anderson and Slater 2015), created habitat for the streaked horned lark.

The USACE considers the Applicant's Sandy Island dredged material placement site (i.e., the proposed Sandy Island Conservation Area) to be full and the USACE does not intend to place additional dredged material there. Neither the USACE nor the Applicant is obligated to manage vegetation at the site (Service 2015). Without recurring site disturbance and/or vegetation management, natural succession of the vegetation (including encroachment by Scotch broom) will degrade streaked horned lark habitat and is expected to cause the loss of suitable habitat at this site in the near future (Anderson 2013).

The 32 acres of the proposed Sandy Island Conservation Area is designated critical habitat for the streaked horned lark and is part of the 37-acre streaked horned lark critical habitat Subunit 3-M (Service 2013b).

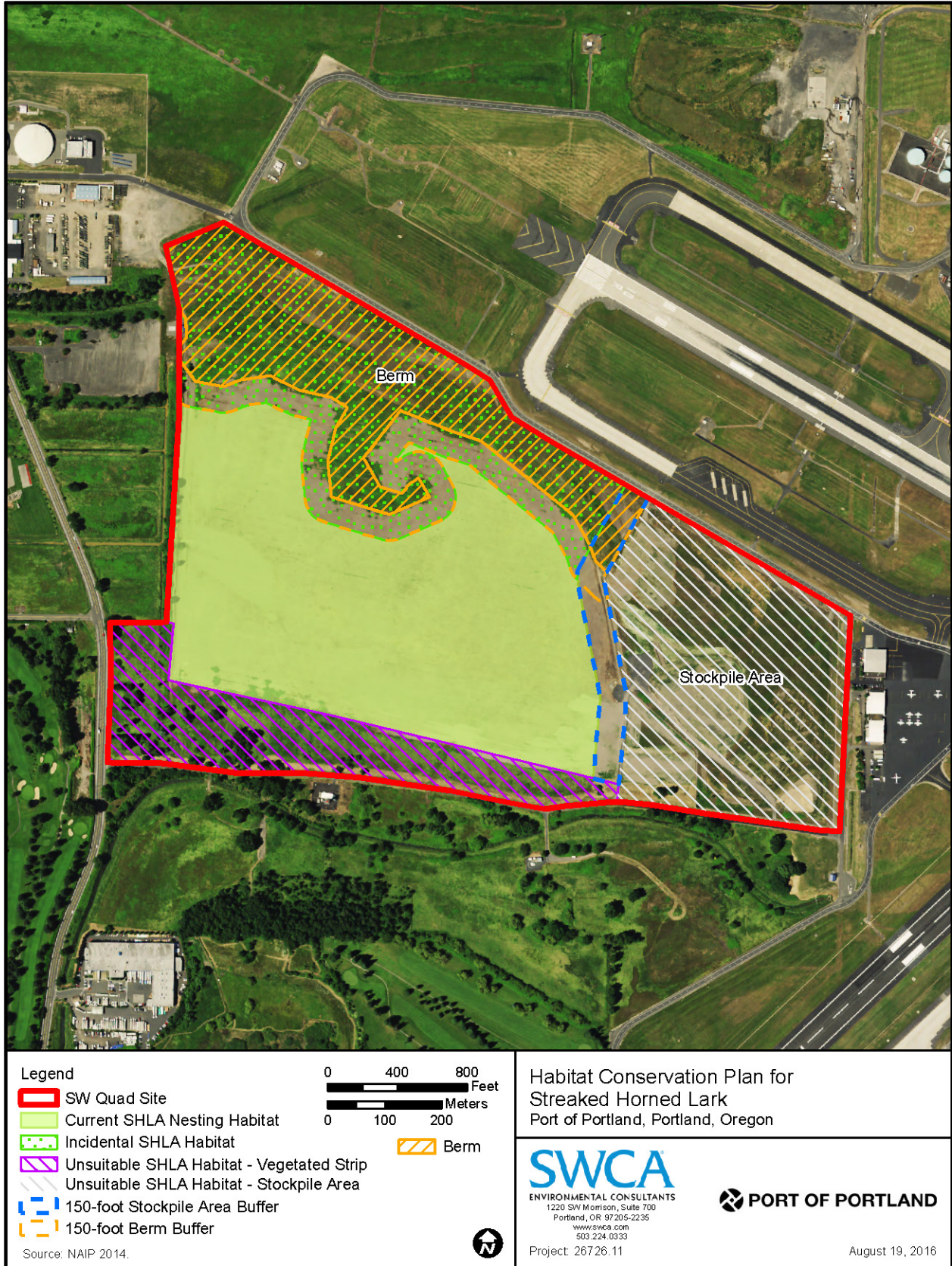


Figure 5. Sandy Island Conservation Area

3.3. Affected Environment

3.3.1. Covered Species

For the purposes of this EA, streaked horned lark are evaluated as the only Covered Species that has the potential to occur within the project areas (See Section 1.6, Scope of Environmental Assessment).

3.3.1.1. STREAKED HORNED LARK

3.3.1.1.1. Population, Biology, and Distribution

The streaked horned lark is one of 21 recognized subspecies of the horned lark (*Eremophila alpestris*) which occurs across much of North America in Canada and the United States (American Ornithologists' Union 1957). The streaked horned lark is considered an endemic species of the Pacific Northwest, and can range from 16 to 20 cm in length. Streaked horned larks are small, ground-nesting birds that can be distinguished by their yellowish throat (males), black bib, and notable feather tufts ("horns") on their heads (Audubon Society 2016)

Historically, streaked horned larks were found from southern Oregon into British Columbia, south through the Puget lowlands and outer coast of Washington, along the lower Columbia River, through the Willamette Valley, the Oregon coast, and into the Umpqua and Rogue River Valleys of southwestern Oregon (Altman 2011). The current range and distribution of the streaked horned lark is divided into three regions: the south Puget Sound in Washington, the Washington coast and lower Columbia River islands, and the Willamette Valley in Oregon (Service 2013a).

Breeding occurs in late February and nesting can start as early as late March and continues into August (Pearson and Hopey 2004). In the Columbia River region, streaked horned lark establish territories approximately 3 to 9 acres in size, which may overlap (Slater and Anderson 2016). The female typically lays four eggs with a short incubation time of approximately 11 days. By mid- to late-August, streaked horned larks disperse from their nesting territories and flocking begins (Moore 2011).

Suitable streaked horned lark wintering and nesting habitat consists of areas with short, sparse herbaceous vegetation, with little or no woody vegetation (Anderson and Pearson 2015; Dinkins et al. 2003; Pearson and Hopey 2005). Along the Washington coast, they are found on dunes with limited vegetation cover. In the lower Columbia River, streaked horned larks often occupy dredged material placement sites. In the Willamette Valley, streaked horned larks primarily occupy agricultural sites and airports (Altman 2011). Most sites currently used by streaked horned larks require some level of disturbance or management to maintain their preferred habitat as the natural succession of vegetation transitions suitable habitat out of use (SWCA 2016).

3.3.1.1.2. Current Threats

Possible threats to the streaked horned lark include loss of critical habitat, human disturbance that can lead to increased subsidized predation, and nest failure due to predation (Altman 1999; Pearson and Altman 2005; Pearson and Hopey 2005). Primary predators are usually avian,

corvids in particular (Anderson 2006). Small population sizes of streaked horned lark provide little or no genetic variability, suggesting that inbreeding depression or population bottlenecks may be occurring or could occur, thereby potentially reducing overall population fitness (Drovetski et al. 2005). Streaked horned lark populations using human-made habitats that experience frequent disturbance may have low nesting success and these areas may actually be population sinks (Service 2010; Stinson 2005).

3.3.1.1.3. Occurrences in or Near the Project Areas

Nesting streaked horned larks have been documented in and around the Project Areas, and wintering streaked horned larks have been documented in Rivergate, the proposed Sandy Island Conservation Area, and the SW Quad (Atwell 2016). Rivergate and the SW Quad are the only two sites known to be occupied by nesting streaked horned larks in Multnomah County, Oregon; however, streaked horned larks are known to utilize lands across the Columbia River at the Port of Vancouver in Washington.

Rivergate

In 2005, Rivergate hosted an estimated 19 streaked horned lark nesting pairs when large portions of the property were largely undeveloped (SWCA 2016). As parcels have been developed, the population has declined. Since 2009, the parcels of the Rivergate Project Area have maintained approximately three to six streaked horned lark nesting pairs, five in 2015.

Wintering season surveys of streaked horned lark within the Rivergate project area have been conducted sporadically over the last 10 years. In the years in which surveys were conducted (2004, 2012, 2013, and 2015), flocks of streaked horned larks composed of 40 to 61 individuals were observed. The most recent wintering season survey detected 17 wintering streaked horned larks using Rivergate (SWCA 2016).

PDX Intermediate

Consistent or reliable occupancy data for the PDX Intermediate Zone is not available, with the exception of SW Quad; however, streaked horned larks have been observed elsewhere within the PDX Intermediate Zone during WHMP inspections. For example, in May 2016, a nesting attempt was made near a PDX airstrip, on an immediate adjacent gravel shoulder, which is not a surface generally considered suitable streaked horned lark habitat (Atwell 2016).

SW Quad

The SW Quad has consistently hosted two to four pairs each year since 2009. This may be due to the consistent vegetation management of this site as a component of the PDX WHMP (i.e., annual discing and mowing), which maintains habitat suitable for use by streaked horned larks. Wintering streaked horned larks have not been recorded in the SW Quad Project Area, but have been documented elsewhere within the PDX airfields (Atwell 2016; Port of Portland 2015). Wintering streaked horned larks have also been detected on other adjacent lands, such as Broughton's Beach, located along the Columbia River immediately to the north of PDX (Galen 2015).

Sandy Island Conservation Area

The number of streaked horned larks observed in the proposed Sandy Island Conservation Area during the nesting season was very low from 2009 to 2012, only one or two nesting pairs. However, since placement of additional dredged material at the site in 2011, the number of streaked horned larks has increased to between three and five nesting pairs each year. The population had a similar abundance between 2005 and 2006, which was also a period following the placement of dredged material in 2004. The low population abundance from 2008 to 2011 could be explained by natural vegetation succession degrading the suitability of streaked horned lark habitat. The low abundance of streaked horned larks during the 2012 nesting season may indicate it was too soon after the deposition in late 2011 to adequately recreate suitable habitat.

Even though the amount of suitable streaked horned lark habitat on the proposed Sandy Island Conservation Area is relatively small, the dredged material deposition in late 2011 likely improved the condition of the habitat and increased the number of streaked horned larks occupying the site (Anderson and Slater 2015). This information suggests that active management at the proposed Sandy Island Conservation Area could be a viable long-term strategy for maintaining or increasing the number of streaked horned larks that nest at the site (SWCA 2016).

3.3.2. Non-Covered Species

3.3.2.1. MIGRATORY AND NON-MIGRATORY BIRDS

The Project Areas, in general, are located within the Pacific flyway, and at the confluence of two major river systems (Rivergate, PDX Intermediate Zone, and SW Quad) or within a river system (Sandy Island Conservation Area), which serve as major movement corridors for migratory birds. Based on the Service's Information for Planning and Conservation database (IPaC), the migratory bird species which have the potential to utilize or currently utilize habitat within Multnomah and Columbia counties (encompassing the Plan Area), include species such as the Caspian tern, willow flycatcher, and the peregrine falcon (Service 2016).

According to the PDX WHMP (2009), raptors, such as red-tailed hawks, American kestrels, northern harriers, and ospreys, are observed year-round at PDX. There has been an increase in bald eagle activity on and around the airfield. Waterfowl, such as Canada geese and mallards, are the birds most commonly present during the fall and winter months. Great blue herons and gulls are the most common wading and shorebirds present on and around the airfield throughout the year (Port of Portland 2009). Passerines, including European starlings, American crows, and various swallow species are also commonly sighted (Port of Portland 2009). Given the close proximity of the Rivergate Project Area to PDX (approximately 4 miles), a similar makeup of migratory and non-migratory bird species may also be seen foraging on or flying over the parcels. Additional species include the American goldfinch and Cooper's hawk.

For activities associated with the implementation of the PDX WHMP, the Applicant maintains an Airport Depredation Permit, issued by the Service, for the take of migratory birds.

3.4. Environmental Consequences

3.4.1. Covered Species

3.4.1.1. STREAKED HORNED LARK

Impacts to the streaked horned lark are evaluated based on the potential loss of suitable habitat and the resulting displacement of nesting pairs from this habitat, impacts from implemented interim and long-term conservation measures, and noise and activity disturbances. Impacts are quantified using nesting pairs of streaked horned larks as a rational surrogate for individuals due to lack of consistent data regarding the individual population (SWCA 2016, Section 5.2.1).

3.4.1.1.1. Alternative 1 (No Action Alternative)

Suitable Habitat

The habitat loss discussion below assumes that without repeated vegetation management, suitable habitat conditions for streaked horned larks would be “lost” simply by natural vegetational succession. Currently, suitable habitat at Rivergate is maintained in preparation for development, and at SW Quad, potentially suitable habitat is maintained as a component of the PDX WHMP. However, the Applicant is not required to continue this maintenance.

The loss of habitat (as discussed below for each project area) would compel any individuals that previously used this habitat for breeding, feeding, or sheltering to find alternate habitat. However, habitat availability does not appear to be limited within the lower Columbia River and it is assumed that displaced streaked horned larks would move to another site (Pearson and Hohey 2004). Given that suitable streaked horned lark habitat is not maintained organically, due to the natural progression of vegetation succession, displacement is a normal streaked horned lark response to habitat loss. Streaked horned larks have been documented as migrating 80 to 250 miles one way between nesting and wintering seasons (Pearson et al. 2005b), and given this range, displaced streaked horned larks could find suitable habitat elsewhere on the Columbia River. Ultimately, the fate of any streaked horned lark permanently displaced from the Project Areas by natural vegetative succession would be unknown.

Rivergate

Under the No Action Alternative the Applicant would suspend all active site management activities at Rivergate. In the absence of site vegetation management such as mowing or discing, vegetation at Rivergate would become too tall and dense for use by streaked horned larks. It is anticipated that the existing 41 acres suitable habitat would be lost 3 years after cessation of vegetation management. Once streaked horned lark habitat no longer exists, the Applicant would move forward with developing the parcels without the risk of take of streaked horned larks.

Due to the loss of habitat, the Applicant estimates that streaked horned larks would be fully removed from Rivergate within 3 years, steadily declining from four nesting pairs in Year 1, to two nesting pairs in Year 2, and finally, to zero nesting pairs in the third year (SWCA 2016).

PDX Intermediate Zone

Under the No Action Alternative the Applicant would continue to implement the PDX WHMP under the 4(d) Special Rule within the PDX Intermediate Zone. Habitat loss may be possible if silt fencing or a similar device is installed to modify wildlife habitat under the WHMP. Additionally, the Applicant would favor management practices that do not result in the creation or maintenance of streaked horned lark habitat. Because the extent of currently suitable habitat is unknown, it is not possible to quantify the amount of habitat that could be lost. However, it is assumed that this form of habitat loss would be temporary and the extent to which such measures would be implemented on the PDX Intermediate Zone is uncertain at this time.

SW Quad

Under the No Action Alternative, the Applicant would continue to rely on the authority of the 4(d) Special Rule to continue aviation wildlife hazard management activities at the SW Quad, likely changing the type of management strategies to those that do not favor the inadvertent creation or maintenance of streaked horned lark habitat. The drainfield replacement is considered an exempt activity under the PDX WHMP and 4(d) Special Rule, and would move forward as planned. The Applicant would allow current, suitable habitat to naturally and fully progress out of suitability for the streaked horned lark. Under this scenario, it is likely that all 77 acres of suitable habitat for the streaked horned lark would be lost. This is estimated to occur 7 years after cessation of activities that currently maintain suitable habitat (Anderson 2013).

Due to the loss of habitat, the Applicant estimates that streaked horned lark would be fully removed from SW Quad within 7 years, steadily declining from three nesting pairs in Year 1, to two nesting pairs in Year 3, and finally, to zero nesting pairs in the sixth year (SWCA 2016). See Table 7 below.

Interim and Long-Term Conservation Measures

Under the No Action Alternative, interim conservation measures would not be implemented anywhere within the Plan Area, the proposed Sandy Island Conservation Area would not be created, and there would be no benefit to the streaked horned lark from conservation measures.

Noise and Activity Disturbance

Because the PDX Intermediate Zone, SW Quad, and Rivergate project areas exist in an urban environment, streaked horned larks that utilize these areas are already accustomed to the level of noise and human disturbances that occur. When combined with the decrease in suitable habitat, fewer, if any, streaked horned larks will be on site, reducing the impacts from noise and human disturbances.

3.4.1.1.2. Alternative 2 (Proposed Action)

Impacts to streaked horned larks under the Proposed Action are based on the implementation of the Covered Activities (Section 1.2.5) and their relation to habitat loss, noise and activity disturbances, and interim and long-term conservation measures.

Suitable Habitat

With the exception of the SW Quad, impacts to suitable streaked horned lark habitat are the same as the No Action Alternative—as in, the same amount of suitable habitat will be lost due to planned land development. However, the implementation of interim conservation measures, as described in the following section, would change the amount of available habitat and increase the amount of time habitat is available habitat within the Plan Area.

As under the No Action Alternative, loss of habitat would compel any individuals that previously used this habitat for breeding, feeding, or sheltering to find alternate habitat. Displaced streaked horned larks resulting from the Covered Activities could fail to find alternate nesting or wintering habitat. In such a case, this habitat loss could be take of streaked horned lark via harm. Ultimately, the fate of any streaked horned lark permanently displaced from the Project Areas due to Covered Activities would be unknown.

At SW Quad, the drainfield replacement and the removal of the existing berm as a component of the PDX WHMP would result in approximately 51 additional acres of ground disturbed habitat suitable for streaked horned lark. These actions would be completed specifically to deter aviation wildlife hazards and not to manage for streaked horned larks on PDX property.

Interim and Long-Term Conservation Measures

Rivergate

Interim conservation measures at Rivergate include annual mowing or discing on non-developed parcels during Permit Years 1 through 3. Covered Activities at Rivergate include the commercial or industrial development of currently vacant parcels, which would which would result in the loss of 41 acres suitable streaked horned lark habitat.

Under the proposed action, there would be no difference in the amount of time that suitable habitat is available at Rivergate when compared to the No Action Alternative (see Table 7). However, depending on the timeline for development, interim conservation measures could increase the amount of habitat available by approximately 10 acres.

PDX Intermediate Zone

Impacts under the Proposed Action are the same as described under the No Action Alternative.

SW Quad

Following the completion of the drainfield replacement, the approximately 128 acres of habitat would be maintained until either the wildlife management strategy under the PDX WHMP changes or the site is developed between Permit Years 20 and 30. PDX WHMP activities may include annual or “as-needed” mowing or discing to maintain streaked horned lark habitat. At the time of development, all habitat would be lost. The Proposed Action extends the amount of time that habitat would be available from 7 years under the No Action Alternative to approximately 25 years depending on the development schedule. Development at SW Quad is discussed as a cumulative impact in section 3.2.3.1.1.

During the permit term, the Applicant assumes that active site management would increase the number annual occupancy of nesting pairs from three to up to seven nesting pairs per year. As the site is developed, habitat would be reduced, resulting in zero nesting pairs at approximately 25 years depending on the development schedule (see Table 7).

Sandy Island Conservation Area

Approximately 32 acres of critical streaked horned lark habitat would be created and/or maintained for the Sandy Island Conservation Area for the duration of the permit term. Current suitable habitat of approximately 13 acres would be maintained, and approximately 19 acres would be created through the removal of cottonwood trees and Scotch broom within the conservation area boundaries. This habitat will be maintained through active vegetation management to reduce overgrown vegetation and the spread of invasive plants, such as the Scotch broom. Based on the current population density of 4 acres per nesting pair, and the assumption that three nesting streaked horned lark pairs will be present on the island in Permit Year 1, the increase in available habitat would allow for an increase to five nesting streaked horned lark pairs by Year 2 of the permit term, and an overall increase over the duration of the permit term (see Table 7).

Noise and Activity Disturbances

The Covered Activities include the occasional presence of people, vehicles, and equipment within the Plan Area throughout the year (depending on the specific activity) to inspect the property, pick up trash, deter trespassing, haze birds and other wildlife of aviation concern, and manage vegetation. This human activity may cause noise and activity that could influence the behavior of streaked horned larks and cause flushing events.

Flushing events, as a response to human activity, while not a guaranteed response to the disturbance (Pearson and Hopey 2004), would potentially affect streaked horned larks by decreasing the overall fitness of the affected individuals (i.e., energy is expended or foraging is interrupted to flee from the disturbance). In the case of repeated or severe flushing events, streaked horned lark behavior could be disrupted, creating a likelihood of injury to the individual. However, effects from flushing on a streaked horned lark within the Plan Area are unknown and would vary with the intensity and frequency of the disturbance and the habituation of the birds to human activity.

At Rivergate and SW Quad, noise and human disturbance as a result of the covered activities would be minimal. Routine site management, such as mowing or discing, to maintain streaked horned lark habitat, would be performed outside the streaked horned lark nesting season. Additionally, for wintering streaked horned larks foraging in the area, occasional flushing as a direct response to noise and human disturbance from the covered activities would have minimal effects on the species because individuals would not be defending territories or nests, and alternate foraging or resting habitat would be available while the disturbance is occurring.

Within the PDX Intermediate Zone, implementation of the PDX WHMP would include the presence of humans and equipment throughout the streaked horned lark wintering and nesting seasons. This presence would have the potential to cause flushing events for both wintering and nesting streaked horned larks, and may inadvertently result in the direct killing or wounding of a

streaked horned lark if wildlife hazing or vegetation/habitat management activities occur when streaked horned larks are present. However, Applicant personnel responsible for implementing the PDX WHMP are trained to detect and avoid active nests, when possible.

Noise and human disturbances within the Sandy Island Conservation Area would be limited to outside the nesting season.

In any case, streaked horned larks that utilize habitat within the Plan Area (particularly the Project Areas) are already accustomed to noise and human disturbance, because these sites are in an urbanized environment. The return of streaked horned larks to the Plan Area year after year and associated high nesting success (USFWS 2013a) would indicate that the current level of human disturbance may not be significant enough to injure these individuals.

Comparison of No Action and Proposed Action

The change in habitat, the interim conservation measures, and the creation of the Sandy Island Conservation Area discussed above results in direct impacts to number of nesting pairs. A summary and comparison of the estimated number of nesting pairs within the plan area is shown below in Table 7.

Table 7. Summary Comparison of Estimated Number of Nesting Pairs Over the Permit Term

Permit Year	Estimated Nesting Pairs					
	Rivergate – No Action	Rivergate – Covered Activities	SW Quad – No Action	SW Quad – Covered Activities	Sandy Island – No Action	Sandy Island – Conservation Measures
Year 1	4	6	3	3	0	3
Year 2	2	3	3	3	0	5
Year 3	0	0	2	3	0	5
Year 4	0	0	2	5	0	5
Year 5	0	0	1	5	0	5
Year 6	0	0	1	5	0	5
Year 7	0	0	0	4	0	5
Year 8	0	0	0	4	0	5
Year 9	0	0	0	4	0	5
Year 10	0	0	0	4	0	5
Year 11	0	0	0	4	0	5
Year 12	0	0	0	4	0	5
Year 13	0	0	0	4	0	5
Year 14	0	0	0	4	0	5
Year 15	0	0	0	4	0	5
Year 16	0	0	0	4	0	5
Year 17	0	0	0	4	0	5
Year 18	0	0	0	4	0	5

Table 7. Summary Comparison of Estimated Number of Nesting Pairs Over the Permit Term

Permit Year	Estimated Nesting Pairs					
	Rivergate – No Action	Rivergate – Covered Activities	SW Quad – No Action	SW Quad – Covered Activities	Sandy Island – No Action	Sandy Island – Conservation Measures
Year 19	0	0	0	4	0	5
Year 20	0	0	0	3	0	5
Year 21	0	0	0	3	0	5
Year 22	0	0	0	2	0	5
Year 23	0	0	0	2	0	5
Year 24	0	0	0	1	0	5
Year 25	0	0	0	0	0	5
Year 26	0	0	0	0	0	5
Year 27	0	0	0	0	0	5
Year 28	0	0	0	0	0	5
Year 29	0	0	0	0	0	5
Year 30	0	0	0	0	0	5
Sum (Year 1–30)	6	9	12	82*	0	148

*Potential benefit to streaked horned lark as a result of the berm removal are not listed since site management at SW Quad is specific to implementation of the PDX WHMP. This benefit is estimated at an additional 54 nesting pairs over the course of the permit term.

3.4.2. Non-Covered Species

3.4.2.1. MIGRATORY AND NON-MIGRATORY BIRDS

3.4.2.1.1. Alternative 1 (No Action Alternative)

Under the No Action Alternative, impacts to migratory birds would include the continued allowance for take in the PDX Intermediate Zone and the SW Quad within it, in association with management actions implemented under the PDX WHMP. This take is monitored and accounted for within the Applicant’s Migratory Bird Depredation Permit issued by the Service.

Additionally, this permit is not reliant on the 4(d) Special Rule, and would remain in effect regardless of the 4(d) Special Rule being modified or revoked.

With respect to land development activities at Rivergate and SW Quad, there could be temporary and long-term impacts due to noise and human disturbances created by the use of construction equipment. This could result in the displacement of migratory birds and their avoidance of the Rivergate and SW Quad project areas. Displacement and avoidance could impact bird migration, nesting, foraging, and mating behaviors. In general, noise and human disturbance currently occurs regularly in association with routine operation and maintenance activities; due to this, no

long-term disturbance of MBTA-protected, or other avian, species' breeding or foraging activities within Rivergate or SW Quad would be anticipated.

3.4.2.1.2. Alternative 2 (Proposed Action)

Under the Proposed Action, impacts to migratory birds would be consistent with the No Action Alternative for the PDX Intermediate Zone, SW Quad, and Rivergate, albeit on a shorter timeframe based on the land development estimated schedule.

At the proposed Sandy Island Conservation Area, grassland habitat would be maintained for nesting streaked horned larks, and would additionally provide habitat for other migratory grassland species.

3.5. Cumulative Impacts

3.5.1. Introduction

The area of analysis for cumulative impacts to streaked horned larks is inclusive of the species' Columbia River Basin population range, and was evaluated for the length of the proposed ITP—30 years. Inclusion of specific projects was based on the likelihood for take of streaked horned lark and the loss/creation of suitable streaked horned lark habitat to occur.

A cumulative impacts assessment considers projects in the past, present, and reasonably foreseeable future, authorized or under review, which are considered to contribute to aggregate resource impacts. As stated in 40 CFR 1508.7, "Cumulative impact is an impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." Historical habitat loss or inadvertent creation of suitable habitat for the streaked horned lark within the Plan Area is discussed in Section 3.3. In the greater streaked horned lark Columbia River population range, streaked horned larks have, in recent years (since 2014), seen a decline (Stinson 2016).

3.5.2. Reasonably Foreseeable Future Projects

The present and future projects evaluated which could result in cumulative impacts as a result of the project's proximity to or within the Plan Area are listed in Table 8. Since streaked horned lark population densities, as quantified in this EA (acres per nesting pair), are not consistent across known occupied sites, for this cumulative analysis, impacts are evaluated based on acreage of suitable streaked horned lark habitat created or lost as a result of project activities.

Table 8. Reasonably Foreseeable Projects in Streaked Horned Lark Habitat

Project	Description	Location	Potential for Suitable Habitat (acres)
Smith and Bybee	Approximately 1,999 acres of seasonally emergent wetland and mudflat habitat, with 250 acres of grassland habitat found within the closed St. John's Landfill site (Audubon Society 2013).	North Portland., Oregon	250
Wapato Mitigation Bank	Approximately 61 acres of upland floodplain to be enhanced for streaked horned lark breeding habitat (Plas Newydd 2015).	Clark County, Washington	61
USACE Columbia River Channel Maintenance Dredging	Ongoing maintenance dredging of Columbia River navigation channel and anchorages as necessary. From 2015 to 2018, up to approximately 643 acres of suitable habitat (from 241 in 2015) will become available (Stinson 2016).	Columbia River	402 (may become available, but may not be actively managed as suitable habitat)
Port of Kalama Manufacturing and Marine Support Facility	Construction of a marine export facility affecting streaked horned lark habitat by naturally allowing vegetation growth to overcome suitable habitat.	Columbia River	-3
Port of Kalama Maintenance Dredging	TEMCO Berth Maintenance Dredging project, North Port, Kalama Export, and marina dredging and placement. Approximately 5,000 to 160,000 cubic feet removed from each site per year for 2 to 25 years (depending on the site) (Port of Kalama 2013).	Columbia River	Unknown
PDX Section 7 Consultation for SW Quad	Development of the SW Quad would require a modification to the Applicants existing Airport Layout Plan (ALP), and would likely involve AIP grant funds. These FAA actions would trigger the requirement for section 7 consultation under the ESA for streaked horned lark.	PDX	-128

3.5.3. Cumulative Effects

3.5.3.1.1. Covered Species

Many factors may result in positive or negative changes to the population as a whole over time. The natural ecology of the streaked horned lark suggests that they have adapted to the loss of suitable habitat. Much of the streaked horned lark's habitat is composed of recently disturbed, early successional vegetation with a substantial amount of bare ground, and his type of habitat is not naturally present for long periods of time at any particular location in the absence of frequent disturbance.

Under the No Action Alternative, the projects or activities presented in Table 8 will affect the streaked horned lark population via changes in habitat and continued implementation of conservation measures at specific sites. For projects such as the Port of Kalama Manufacturing and Marine Support Facility, current suitable streaked horned lark habitat will naturally progress out of suitability, resulting in habitat loss. However, with cumulative projects that involve conservation measures, such as the Wapato Valley Mitigation Bank, an overall increase in suitable streaked horned lark habitat is anticipated. In general, when combined with the

Applicant's project under the No Action Alternative, resulting effects to the streaked horned lark include loss of suitable habitat through natural succession in the approximate amount of three acres, and conservation measures implemented at other project sites would provide a potential benefit to streaked horned lark in the amount of 700 acres of suitable habitat. Though, without active site management, this habitat could naturally transition out of suitability.

Under the Proposed Action, when combined with the Applicant's project, projects would still contribute to a loss in habitat for streaked horned lark, but the implementation of conservation measures by the Applicant would increase suitable habitat by 32 acres (Sandy Island Conservation Area). Additionally, the creation of the Sandy Island Conservation area within the current Columbia River range of the streaked horned lark population presents a local site for displaced streaked horned larks to find suitable habitat, and during the interim prior to development, approximately 128 acres will be maintained at Rivergate and SW Quad.

Development at SW Quad would occur under both action alternatives. This would include the construction of either a rampside air cargo facility or an aircraft maintenance hangar facility. Any such development would occur in accordance with the seasonal restrictions described in the conservation program (SWCA 2016). Development of the SW Quad would require a modification to the Applicant's existing ALP and would likely be funded by an FAA AIP grant. This modification to the ALP and the issuance of an AIP grant would have to be approved by the FAA and are considered federal actions (i.e. have a federal nexus). At that time, the FAA would initiate section 7 consultation for the streaked horned larks at the SW Quad if necessary. At the time of this EA, the estimated take of streaked horned lark as result of SW Quad development is 7 nesting pairs. The conservation program presented in the HCP (SWCA 2016) was developed to address this future estimated take.

3.5.3.1.2. Non-Covered Species

Migratory and Non-Migratory Birds

Under the No Action and Proposed Action Alternatives, cumulative impacts to migratory birds from the projects in Table 8 would include temporary and long-term impacts due to noise and human disturbances created by active vegetation management at existing conservation sites and dredging activities. Habitat created as a result of the conservation projects, such as the Smith and Bybee Wetlands Natural Area, would continue to provide suitable foraging or nesting habitat for a variety of migratory bird species, including the willow flycatcher, savannah sparrow, and peregrine falcon (Audubon Society 2016). Displacement and avoidance as a result of human disturbance associated with land development activities could impact bird migration, nesting, foraging, and mating behaviors. However, given the close proximity of multiple conservation sites, no long-term disturbance of MBTA-protected or other avian species' breeding or foraging activities within the cumulative analysis area as a result of the Proposed Action and cumulative projects is anticipated.

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