

Final Environmental Assessment for
Proposed Airfield and Terminal Area Improvements

PORTLAND INTERNATIONAL JETPORT



This Environmental Assessment becomes a Federal document when evaluated and signed by the responsible federal official.

Responsible Federal Official:

Date:

12/14/09

Richard Doucette
Environmental Protection Specialist

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for

**Proposed Airfield and Terminal Development at
Portland International Jetport**

Prepared by:

**City of Portland
Portland International Jetport
1001 Westbrook St.
Portland, ME 04102**

and

**Deluca-Hoffman Associates, Inc.
Coffman Associates, Inc.
TRC Companies, Inc.**

for the

Federal Aviation Administration

November 2009

FEDERAL FINDING

After careful and thorough consideration of the facts contained herein, the undersigned finds that the proposed federal action is consistent with existing national policies and objectives as set forth in Section 101 of the *National Environmental Policy Act* (NEPA) and other applicable environmental requirements and will not significantly affect the quality of the human environment or otherwise include any condition requiring consultation pursuant to Section 101(2) (c) of the NEPA.

APPROVED:



Richard Doucette
Environmental Protection Specialist

DATE:



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Richard Doucette
Environmental Protection Specialist

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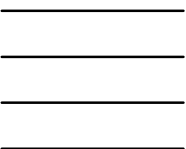
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Chapter One

PURPOSE AND NEED

Chapter One

PURPOSE AND NEED

Environmental Assessment
Portland International Jetport

Portland International Jetport (Jetport) is a commercial service aviation facility located on approximately 726 acres. The airport is owned and operated by the City of Portland, Maine, but is uniquely situated on the corporate boundaries of the cities of Portland, South Portland, and Westbrook. In fact, portions of the airport are located within each jurisdiction. **Exhibit 1A** depicts the location of the airport in its regional setting. Refer to Chapter Three for more information regarding the airport's existing facilities and general location.

An update to the Portland International Jetport's Master Plan was completed in 2007. The purpose of the Master Plan update was to evaluate the airport's ability to meet design standards and provide a safe and efficient operating facility for existing and anticipated future users of the airport. This update provided an inventory of existing facilities, projected aviation demand forecasts, and identified facility requirements to accommodate forecasted demand. The study also examined airside and landside alternatives and recommended an airport layout and improvement schedule. Among other things, this document identified the need to provide additional commercial airline terminal facilities, enhance operational safety by providing adequate runway safety area (RSA) for Runway 18-36, a new taxiway to reduce runway incursion potential, as well as provide additional runway length for both Runway 11-29 and Runway 18-36.

Additionally, in April 2007, the U.S. Department of Agriculture (USDA) completed a Wildlife Hazard Management Plan (WHMP) which contains a number of recommendations regarding wildlife management at the Jetport. Specifically, the plan calls for the filling of the wetland area beyond the end of Runway 29 to eliminate potential wildlife hazards to aircraft.

In October 2007, the Maine Department of Environmental Protection (MeDEP) requested that the Portland International Jetport evaluate available treatment options to remove as much aircraft deicing fluid as practicable from Portland International Jetport's stormwater discharge. A resulting plan identified the need to build a central deicing pad with containment for spent deicing fluid. The MeDEP requires this deicing pad to be operational by November 1, 2010.



Exhibit 1A
LOCATION MAP

This Environmental Assessment (EA) will evaluate the proposed airport development and WHMP recommendations by first outlining the need for the airport improvements (Chapter One); followed by an evaluation of runway alternatives (Chapter Two); a discussion of the existing environmental resources surrounding the proposed development (Chapter Three); and will conclude with a discussion of the potential environmental impacts of the proposed improvements on identified environmental resources and means to mitigate any potential negative environmental consequences (Chapter Four).

1.1 PURPOSE AND NEED

The purpose of the improvements identified on **Exhibit 1B** is to upgrade the Portland International Jetport in order to comply with current Federal Aviation Administration (FAA) safety standards; to meet state requirements for stormwater discharge; and to meet current and reasonably projected demand. The following bullets provide the need for each of the improvements to be evaluated within this EA. Additional, more detailed information to support the need for each of the proposed projects is also contained within **Appendix B**.

- **WHMP Implementation.** Pursuant to Title 14 of the Code of Federal Regulations (CFR) Part 139.337(e.1), the Jetport recently developed a WHMP in cooperation with the U.S. Department of Agriculture Wildlife Hazard Group. The plan was finalized in April 2007. A copy of the WHMP and supporting coordination with the USDA is contained within **Appendix C**. Recommendations from the WHMP call for the filling of the wetland area beyond the Runway 29 end to eliminate habitat attractive to problematic wildlife. The cattails and other vegetation (phragmites) that grow in this area attract large flocks of blackbirds and European starlings. These birds roost and nest in this area which results in an aircraft safety hazard because of the potential for birds to be ingested into jet engines, resulting in aircraft damage or loss and, at times, human injuries. According to FAA Advisory Circular 150/5200-33B, *Hazardous Wildlife Attractants on or Near Airports*, blackbirds and starlings have a relative hazard score of 10, with a score of one being the most hazardous and 100 being the least. The FAA National Wildlife Strike Database, Serial Report Number 12, *Wildlife Strikes to Civil Aircraft in the United States, 1990-2005*, reports that starling and blackbird strikes cost the aviation industry over \$2.75 million dollars from 1990 to 2005.
- **Terminal Area Improvements.** During a terminal building planning process that was conducted concurrently with the 2007 Master Plan, it was determined that the airport's existing terminal facilities do not meet existing passenger demand needs. Additional gates and apron area are needed to accommodate commercial service aircraft during peak hour traffic as well as during overnight hours. During overnight hours, aircraft are currently required to "double park" which results in safety and level of service concerns. Additionally, expanded check-in, baggage screening, and passenger queue areas are needed to conform to new Transportation Security Agency (TSA) requirements for baggage and passenger screening. Finally, additional curb length and public parking areas are needed to accommodate existing passenger levels.
- **Deicing Fluid Collection.** On October 11, 2005, the Maine Department of Environmental Protection (MeDEP) replaced the U.S. Environmental Protection Agency as the regulatory agency for the Multi-Sector General Permitting of stormwater discharge associated with industrial activity in accordance with the Maine Pollutant Discharge Elimination System. As a result, Federal Regulation 40 CFR 122.26(b) (14) has been replaced by the Maine State Multi-Sector General Permit (Maine MSGP) as the controlling regulatory document for the Portland International Jetport. Through this authority, the MeDEP has required that the Portland International Jetport develop a method to remove as much aircraft deicing fluid as practicable from Portland International Jetport's stormwater discharge by November 1, 2010.

SUMMARY

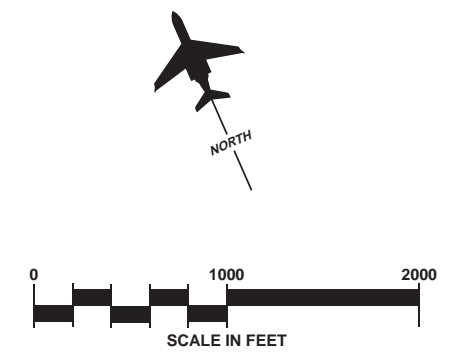
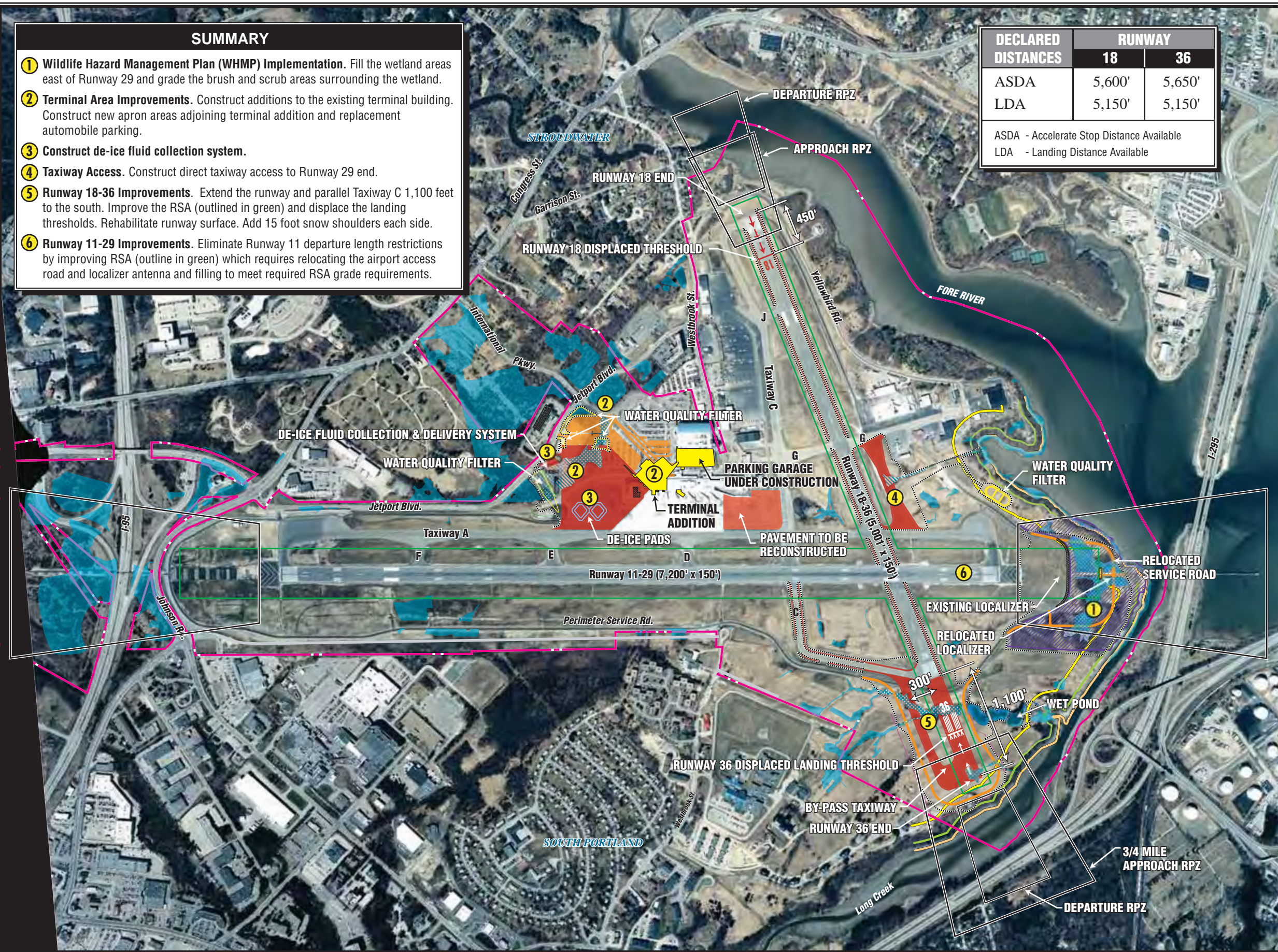
- 1 **Wildlife Hazard Management Plan (WHMP) Implementation.** Fill the wetland areas east of Runway 29 and grade the brush and scrub areas surrounding the wetland.
- 2 **Terminal Area Improvements.** Construct additions to the existing terminal building. Construct new apron areas adjoining terminal addition and replacement automobile parking.
- 3 **Construct de-ice fluid collection system.**
- 4 **Taxiway Access.** Construct direct taxiway access to Runway 29 end.
- 5 **Runway 18-36 Improvements.** Extend the runway and parallel Taxiway C 1,100 feet to the south. Improve the RSA (outlined in green) and displace the landing thresholds. Rehabilitate runway surface. Add 15 foot snow shoulders each side.
- 6 **Runway 11-29 Improvements.** Eliminate Runway 11 departure length restrictions by improving RSA (outline in green) which requires relocating the airport access road and localizer antenna and filling to meet required RSA grade requirements.

DECLARED DISTANCES	RUNWAY	
	18	36
ASDA	5,600'	5,650'
LDA	5,150'	5,150'

ASDA - Accelerate Stop Distance Available
LDA - Landing Distance Available

LEGEND

- Existing Airport Property Line
- Runway Safety Area (RSA)
- Runway Protection Zone (RPZ)
- Limit of Disturbance
- Ultimate Airfield Pavement
- Ultimate Road/Parking
- Ultimate Building
- Wildlife Hazard Area
- Previously Identified Wetland Areas
- Previously Permitted Wetlands
- Wetlands to be Removed
- 250' Shoreland Overlay District
- 75' Resource Setback
- Spring High Tide



- **Taxiway Improvements.** As shown on **Exhibit 1B**, the Master Plan determined that direct access to the Runway 29 end from Taxiway G is needed to reduce the number of runway crossings and potential for runway incursions. Currently, general aviation and air cargo aircraft located along Taxiway G must cross Runway 18-36 twice to gain access to Runway 29.
- **Runway 18-36 RSA and Length Improvements.** During the planning process it was determined that Runway 18-36 is deficient in providing required RSA (as defined within FAA AC 150/5300-13) and runway length needed to accommodate commercial service and cargo aircraft when Runway 11-29 is closed for maintenance purposes. The Master Plan indentified the need for up to 5,800 feet of runway length for calculating accelerate stop distance. FAA standards specify that the RSA for Runway 18-36 extend 150 feet each side of the runway centerline, 600 feet prior to the landing threshold, and 600 feet beyond the far end of the takeoff and/or landing roll.
- **Runway 11-29 Length Needs.** Analysis undertaken during the master planning process showed that existing airport users have a need for 7,200 feet of departure and landing distance in each direction on Runway 11-29. This departure and landing length is currently only provided for Runway 29. Runway 11 is limited to 6,800 feet of landing and departure lengths to ensure that RSA design standards are met beyond the Runway 29 end.

1.2 AVIATION FORECASTS

The need for the improvements is supported due to the Jetport's role within the *National Plan of Integrated Airport Systems 2007-2011* (NPIAS) as a primary commercial service small-hub airport. The Jetport's designation as a commercial service airport translates to the airport's level of importance within the national aviation system. Forecasts and facility requirements contained within the NPIAS assume that the airport will continue to fulfill its role within the national aviation system. In order to allow the airport to continue to fulfill its assigned role, the airport needs to be able to accommodate the needs of the aviation community by providing a safe operating environment for all aircraft.

The selection of appropriate FAA design standards for the development of the airport is based primarily upon the most demanding aircraft the facilities will serve. This aircraft is often referred to as the critical design aircraft. The critical design aircraft is defined as the most demanding category of aircraft which performs 500 or more operations per year at the airport. This aircraft is identified by its approach speed and wingspan. The FAA has established a coding system to relate airport design criteria to the operational (approach speed) and physical (wingspan) characteristics of aircraft. This code, referred to as the airport reference code (ARC), has two components: the first component, a letter, is the aircraft approach category and relates to aircraft approach speed; the second component, a Roman numeral, is the airplane design group and relates to the aircraft wingspan. In order to determine airfield facility requirements, an ARC is first determined, and then appropriate airport design criteria, as determined by the critical design aircraft, are applied. (While aircraft within higher ARC may occasionally use the airport, facilities are not designed to accommodate the larger aircraft until the 500 operation threshold is reached.)

According to the forecasts prepared for the airport during the 2007 Master Plan, the Portland International Jetport is currently utilized by a mix of commercial service, cargo, and general aviation aircraft ranging in ARC from A-I to D-IV. Forecasts prepared during the planning process established the critical design aircraft as ARC D-IV for Runway 11-29 and ARC B-III for Runway 18-36. Additional information regarding the aviation forecasts prepared for the airport as well as the critical aircraft determination are contained within **Appendix B**.

1.3 PROPOSED ACTION

The various components of the proposed airport development (proposed action) are depicted in **Exhibit 1B** and briefly described in the following sections.

1.3.1 WHMP Implementation

Within the WHMP it is recommended that the wetland that exists on the approach end of Runway 29 be filled, and the brush and scrub which exists near this wetland be cleared and graded. The location of the wetland and brush/scrub area is depicted with a purple hatch on **Exhibit 1B**. This area will be filled and graded in accordance with the WHMP recommendations.

1.3.2 Terminal Area Improvements

The initial terminal area improvements planned to be undertaken within the next five years are depicted on **Exhibit 1B**. These improvements include enlarging the functional elements of the terminal building, providing additional aircraft apron parking area, and providing additional vehicular parking to account for what is lost due to the terminal building expansion.

The initial terminal building development focuses on increasing space for passenger check-in, baggage make-up, and passenger screening improvements. A new core structure is proposed west of the existing terminal building. This new area will accommodate new ticketing and a baggage make-up with in-line explosive detection devices. The second floor of the new structure will provide larger passenger screening points, a secure holdroom, and concessions areas. These improvements will ensure the airport conforms to the new TSA security requirements. Finally, an additional four contact gate positions are also created by this development to accommodate existing commercial service gate needs. Providing the additional gate positions will ensure that aircraft do not need to “double park” during peak aircraft arrival periods.

Additional apron area is planned to accommodate the parking needs of commercial service aircraft left at the airport overnight. This will eliminate the current “double parking” issue.

Finally, the planned terminal building expansion results in the loss of a number of surface parking positions. The additional vehicular parking will be constructed on the northern edge of the existing surface parking lot as depicted on **Exhibit 1B**.

1.3.3 Deicing Fluid Collection

The locations of the proposed deicing fluid collection, storage, and recycling facilities are shown on **Exhibit 1B**. With this method, aircraft ready for a deicing procedure will park over the collection pads on the north-western portion of the terminal apron. Spent deicing fluid will flow through collection drain trenches to the east where the proposed deicing fluid collection, storage, and recycling facilities are located. The facilities will include an area to house up to two glycol concentrators, a limited number of aboveground tanks associated with glycol processing and storage, a 500,000-gallon underground storage tank to hold spent deicing fluid prior to processing, and pumping stations to support operations. The distalate from spent deicing fluid processing will be sent to the City of Portland's waste water treatment facility for treatment prior to discharge. Recycled glycol will be trucked offsite by the company selected to perform deicing fluid recovery and processing operations.

1.3.4 Taxiway Improvements

The new taxiway between Taxiway G and Taxiway A east of Runway 18-36 is depicted on **Exhibit 1B**. This taxiway is intended to reduce the number of crossings of Runway 18-36 by air cargo and general aviation aircraft located along Taxiway G. Presently, aircraft located along Taxiway G must cross Runway 18-36 twice to reach Runway 29. This taxiway would reduce the potential for runway incursions by providing direct access to the Runway 29 end, the most used runway for departures by air cargo and general aviation aircraft located along Taxiway G.

1.3.5 Runway 18-36 RSA and Length Improvements

Several improvements are planned to allow Runway 18-36 to more effectively serve as a back-up to Runway 11-29 when it is closed for maintenance or other reasons. Runway 18-36 now serves a limited role in maintaining the continuity of air service when Runway 11-29 is closed. The improvements to Runway 18-36 include upgrading to ARC B-III design standards, which results in longer and wider RSAs, and a 1,100-foot runway extension to the south. FAA standards specify that the RSA for Runway 18-36 extend 150 feet each side of the runway centerline, 600 feet prior to the landing threshold, and 600 feet beyond the far end of the takeoff and/or landing roll. The RSA currently extends approximately 153 feet beyond the Runway 18 end and 89 feet beyond the Runway 36 end. The current RSA extends 75 feet each side of the runway centerline.

1.3.6 Runway 11-29 Improvements

To accommodate the runway length needs of the existing airport users, improvements will be made to the Runway 11 RSA to eliminate the need to restrict the Runway 11 landing and departure lengths. Improvements to the RSA include relocating a portion of the perimeter service road, relocating the localizer antennae, and bringing the RSA grade to standard.

1.4 REQUESTED REGULATORY ACTION

The requested approval action includes the following:

- Airport layout plan (ALP) approval to reflect the development of the projects described within Section 1.3.
- Approval of further processing of an application for state and federal assistance to implement those Airport Improvement Program (AIP) eligible projects.
- Development of new air traffic procedures to reflect the new runway ends.

1.5 DOCUMENTATION REQUIREMENTS AND STANDARDS

This EA has been prepared in accordance with the requirements of Section 102(2)(c) of the *National Environmental Policy Act (NEPA) of 1969* (PL 91-190, 42 USC 4321 *et. seq.*) and Title 49, Chapter 471 of the U.S. Code Federal Regulations. Through NEPA, Congress requires Federal agencies to consider the environmental effects of proposed actions and their reasonable alternatives. The environmental consequences of maintain-

ing the existing airport facility will be evaluated as the no action alternative. The environmental consequences of the proposed airport improvements will be evaluated as the proposed action.

The Federal Aviation Administration (FAA) is the lead federal agency for NEPA compliance. The format and subject matter included within this report conform to the requirements and standards set forth by the FAA as contained within FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures* and FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*.

This EA incorporates by reference all, or portions of, other technical documents that are a matter of public record. These documents, including the 2007 Airport Master Plan and WHMP, either relate to the proposed action alternative or provide additional information concerning the environmental setting in which elements of the proposed action are proposed. Chapter Five contains a listing of documents utilized in the preparation of this EA.

1.6 IMPLEMENTATION TIMEFRAME

All items discussed in Section 1.3 and illustrated on **Exhibit 1B** are expected to be developed within the next five federal fiscal years (2009-2013). **Table 1A** outlines the anticipated development schedule. The FAA has federal oversight for the implementation of the proposed Airport Master Plan update near-term project improvements.

TABLE 1A
Schedule of Proposed Improvements, 2009-2013
Portland International Jetport

Project Description	Anticipated Start Date ¹
Wetlands Mitigation	2009
Terminal Construction and Apron Construction	2009
Deicing Fluid Collection System Construction	2010
Extend Runway 18-36 and Taxiway C 1,100 feet south, Improve RSA to ARC B-III standards, Displace Landing Thresholds	2010
Runway 11-29 improvements	2011
Construct taxiway between Taxiway G and Taxiway A East of Runway 18-36	2012

¹ Contingent on issuance of a Finding of No Significant Impact (FONSI) by the FAA.

Source: Portland International Jetport Master Plan

Chapter Two

ALTERNATIVES

Chapter Two

ALTERNATIVES

Environmental Assessment
Portland International Jetport

The objective of this alternatives analysis is to identify reasonable alternatives which accommodate the purpose and need identified in Chapter One. Once identified, each alternative is evaluated in terms of its ability to satisfy the objectives of the purpose and need for the project and its potential for an effect on the surrounding environment. The result of this evaluation is to determine which alternatives will be considered reasonable and practicable, thereby warranting further consideration. The alternatives under consideration are more closely evaluated in Chapter Four of this document.

Under the *National Environmental Policy Act (NEPA)*, as stated in the Federal Aviation Administration (FAA) Order 1050.1E, *Environmental Impacts: Policies and Procedures*, and FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*, alternatives can be eliminated from further consideration when they do not fulfill the purpose and need for the action or cannot be reasonably implemented. Alternatives that do not meet the purpose and need stated in Chapter One, or are deemed to not be reasonable, will be eliminated and will not be discussed further in this Environmental Assessment (EA), with the exception of the no action alternative. The Council on Environmental Quality (CEQ), Section 1502.14(c), requires the evaluation of the no action alternative for comparison purposes, regardless of whether it meets the stated purpose and need or is reasonable to implement. The No Action Alternative is considered for each component of the Proposed Action Alternative.

A number of improvements are needed at the Jetport to accommodate existing airport users, improve safety, and meet regulatory requirements. These improvements can be grouped into the following six general categories:

- Implementation of the recommendations contained within the Portland International Jetport Wildlife Hazard Management Plan (WHMP)

- Terminal area improvements
- Deicing fluid collection
- Taxiway improvements
- Runway 18-36 improvements
- Runway 11-29 improvements

The following sections contain a description of the alternatives evaluated for each of the aforementioned general categories.

2.1 WILDLIFE HAZARD MANAGEMENT PLAN (WHMP) ALTERNATIVES

Pursuant to Code of Federal Regulation (CFR), Title 14, Part 139.337 (e.1), Portland International Jetport developed a Wildlife Hazard Management Plan (WHMP) in cooperation with the U.S. Department of Agriculture Wildlife Services Program. The WHMP outlines steps for monitoring, documenting, and reporting potential wildlife hazards and strikes at Portland International Jetport. Protocols for responding to hazardous wildlife situations are presented, including roles and responsibilities of airport personnel. Wildlife control procedures for birds and mammals are also included.

The specific WHMP project under evaluation within this EA is the filling and grading of the wetland and brush/scrub area beyond the Runway 29 end. The cattails and phragmites in this area attract large flocks of blackbirds and European starlings that roost and nest in the area.

The FAA and U.S. Department of Agriculture (USDA) jointly prepared a document detailing methods and procedures for wildlife hazard management at airports. The second edition of *Wildlife Hazard Management at Airports* was published in July 2005 and recommends five general approaches to wildlife hazard management as follows:

1. Aircraft flight schedule modification;
2. Habitat modification;
3. Exclusion techniques;
4. Repellent and harassment techniques; and
5. Wildlife removal.

These alternatives are summarized in the following sections and were prepared following input from various state and federal agencies at meetings at the Portland International Jetport on September 18, 2007 and December 12, 2007. Agencies represented at these meetings included the United States Army Corps of Engineers, United States Fish and Wildlife Service, United States Environmental Protection Agency, United States Department of Agriculture Wildlife Services, State of Maine Department of Environmental Protection, and State of Maine Department of Inland Fisheries and Wildlife.

2.1.1 WHMP Alternative 1 –Aircraft Flight Schedule Modification

This method of minimizing bird strikes involves adjusting flight schedules in accordance with a wildlife species that has a predictable pattern of movement. An example of this would be to advise pilots not to depart during a 20-minute time period at sunrise or sunset during winter when large flocks of birds cross an active runway going to and from their roosting site. This method may be effective on smaller, gener-

al aviation airports where traffic is not scheduled into the national air transportation system; however, it is not practical for regularly scheduled commercial traffic experienced at Portland International Jetport.

Additionally, the WHMP did not note a predictable pattern of movement for the blackbirds and starlings within the Runway 29 approach area; therefore, it is not feasible to establish a flight schedule that would limit, reduce, or avoid the potential for bird strikes.

This alternative does not meet the purpose and need as it does not remove the habitat attractant. Furthermore, this alternative is impracticable to implement at Portland International Jetport due to the unpredictable pattern of bird movement. This alternative has been eliminated from further consideration and will not be discussed further within this EA.

2.1.2 WHMP Alternative 2 – Habitat Modification Fill and Grade Wetland (included in the Proposed Action)

The second edition of *Wildlife Hazard Management at Airports*¹ states the following: “Habitat modification means changing the environment to make it less attractive or inaccessible to the problem wildlife. All wildlife requires food, cover, and water to survive. Any action that reduces, eliminates, or excludes one or more of these elements will result in a proportional reduction in the wildlife population at the airport. Habitat modifications to make the airport and surrounding area as unattractive as possible to hazardous wildlife must be the foundation of every airport’s Wildlife Hazard Management Plan.”

In accordance with the *Wildlife Hazard Management at Airports* document, the recently completed WHMP for the Jetport found the highest priority development project is to “fill and grade the wetland that exists on the approach to Runway 29” as “the cattails and other vegetation that grow in this area attract large flocks of blackbirds and European starlings that roost and nest here.” Other vegetation most notably known to attract nesting and roosting blackbirds is phragmites, or common reed (*Phragmites australis*).

In a letter dated October 26, 2007, Mr. John Forbes, the State Director for USDA Wildlife Services in Maine, stated the following: “To effectively manage wildlife hazards on the approach area, we strongly suggest eliminating this wetland and the associated vegetation found here. The actual methods used to achieve this goal may vary, but it is our opinion that draining and filling would be the most practical and efficient, and likely the most successful method of permanently altering the current habitat features that are attractive to a variety of wildlife, specifically nesting and roosting blackbirds.”

Elimination of both the attractive vegetation and wetland has been recommended by the USDA. In his October 2007 letter, Mr. Forbes further states: “By draining and filling this area, routine mowing of the vegetation can be achieved, thus eliminating the current attractive habitat type.” The routine mowing ensures that the cattails and other vegetation (phragmites) are not reestablished and become an attractant again. Mr. Forbes states that while “herbicides are another option” (to mowing)...“they are not a long term solution because they require repeated application.”

Removing only the cattails and other vegetation (phragmites) to reduce the attractiveness for the blackbirds and starlings still leaves the wetland area. In his October 2007 letter, Mr. Forbes further states: “eliminating vegetation within the wetland does not eliminate standing water that is also a wildlife at-

¹ *Wildlife Hazard Management at Airports*, Second Edition, July 2005, prepared by the Federal Aviation Administration and United States Department of Agriculture Animal and Plant Health Inspection Service

tractant.” The *Wildlife Hazard Management at Airports* document also supports the notion that leaving the wetland can be an attractant for wildlife. This document states: “water acts as a magnet for birds; therefore, eliminate all standing water on an airport to the greatest extent possible.” “This is particularly important at coastal airports where fresh water is highly attractive to birds for drinking and bathing.”

The 1994 *Prevention and Control of Wildlife* document prepared by the Cooperative Extension Division, Institute of Agriculture and Natural Resources at the University of Nebraska – Lincoln, addresses damage prevention and control methods for blackbirds. For blackbirds, this document states, “Thinning the cattail stands decreases blackbird roosts...and increases use by waterfowl for nesting and other activities.”

Implementation of habitat modification has been successful at other airports. In an e-mail dated February 7, 2008 (included in **Appendix C**), a successful habitat modification plan for Whiteman Air Force Base was outlined. Whiteman AFB, located in Missouri, had a 20-30 acre area which was covered up to 75 percent with habitat for blackbirds (250,000) and waterfowl (2,000). The initial step of their WHMP was to remove the roosting habitat for the blackbirds. The next step involved draining the wetlands to resolve the waterfowl issue. It was crucial in this instance to remove vegetation and drain the wetland in order to resolve all the wildlife hazard issues.

According to Mr. Nick Atwell with the Portland International Airport in Portland, Oregon, filling both jurisdictional and nonjurisdictional wetlands at the airport has been a successful mitigation strategy for limiting water fowl problems at the airport. Mr. Atwell noted that recent settling in the wetland areas has allowed water to pool. The pooling has resulted in a return of water fowl to the airport. The current plan is to add more fill to the former wetland areas. An email is included in **Appendix C**.

In an email included in **Appendix C**, Ms. Catherine Boyles with the Dallas-Fort Worth International Airport noted that wetlands were removed so that the area could be mowed to prevent future habitat growth.

This alternative meets the project purpose and need and is practicable to implement; therefore, it is considered to be part of the Proposed Action Alternative.

This alternative would impact the following environmental resources:

- Potential impacts to water quality during construction.
- 4.53 acres of wetlands

Statutory or regulatory requirements applicable to this alternative include the following:

- An amendment to the Jetport’s existing Site Location of Development Act permit.
- Natural Resources Protection Act permit.
- 401 Water Quality Permit/Certification.
- Stormwater Management Law Permit.
- *Migratory Bird Treaty Act*.
- Section 404 of the *Clean Water Act*.

2.1.3 WHMP Alternative 3 – Exclusion Techniques

Exclusion techniques relate to placing barriers in such a manner as to prevent wildlife from reaching the desired habitat. An example is placing fencing around the airport that prevents deer and other wildlife from accessing the airport operational environment.

Specific to the wetland area beyond the Runway 29 end, exclusion techniques would relate to placing grid wiring in the wetland area with attractant vegetation still in place. In his October 2007 letter, Mr. Forbes states: “Exclusion devices such as grid wires are not known to prevent access to areas by smaller birds, such as European starlings and blackbirds, although they can be effective for certain species of waterfowl. As a result, exclusion is not the most effective tool to manage this wildlife attractant.” Therefore, it is unlikely that an exclusion technique is available for the smaller European starlings and blackbirds with the cattails and phragmites in place.

Removing only the cattails and phragmites would leave the wetland area alone. While this may remove the habitat attractant for the European starlings and blackbirds, the wetland would remain as an attractant primarily for water fowl, and also for other birds seeking fresh water for drinking and bathing. While a wire grid may be helpful in preventing larger waterfowl access to the wetland area, smaller birds may be attracted to the fresh water. Additionally, the wire grid will not prevent the cattails and phragmites from growing. With the wire grid in place, mechanical mowing of the area cannot be accomplished so it is likely that the cattails and phragmites would return. The wire grid will also make maintenance of the area more difficult.

Since this alternative does not remove the habitat attractant entirely, it does not meet the purpose and need and is unavailable to implement. This alternative has been eliminated from further consideration and will not be discussed further within this EA.

2.1.4 WHMP Alternative 4 - Repellent and Harassment Techniques

Repellent and harassment techniques can include the use of chemical repellents, vehicle patrols and sweeps, audio repellents, and visual repellents. These techniques are designed to make the area or resource desired by wildlife unattractive or to make wildlife uncomfortable or fearful. The City of Portland through the WHMP already implements vehicle patrols and sweeps, and audio and visual repellents at the airport.

Chemical repellents for European starlings and blackbirds are limited and primarily used in the agriculture industry. Methyl anthranilate can be used as an additive to food supplies and in shallow ponding areas on pavement. Avitrol is a restricted-use pesticide that is available for feed lots and structures. The area where the chemical repellents would be applied drains into the Fore River. Neither of these is applicable to the Portland International Jetport for these reasons.

The long term cost effectiveness of repelling wildlife usually does not compare favorably with habitat modification or exclusion techniques. Wildlife, or individuals of their species, will return as long as the attractant is accessible. Of special concern at the Portland International Jetport is harassing birds in the Runway 29 approach area since this area is so close to approaching aircraft. In his October 2007 letter, Mr. Forbes states: “Attempting to prevent large flocks of birds from utilizing the area using harassment could prove dangerous given the habitat’s close proximity to aircraft movement.”

Since this alternative does not remove the habitat attractant, it does not meet the purpose and need and is unavailable to implement. This alternative has been eliminated from further consideration and will not be discussed further within this EA.

2.1.5 WHMP Alternative 5 – Wildlife Removal

Wildlife removal is achieved by capturing and relocating or killing the target animals. In most cases, a Federal Migratory Bird Depredation Permit and, in many cases, a state permit is required before any migratory bird can be taken. Any capturing or killing must be done in a humane manner by people who are trained to do so. Capture may be accomplished using chemicals or live traps. Starlicide is a toxic bait for use around livestock facilities and, in some situations, roost sites. The location of the roost sites within the wetland area makes the use of this toxicant difficult. Wildlife removal is not usually successful when used on its own as the habitat attractant remains. However, it can be part of a successful component of a wildlife management plan.

Since this alternative does not remove the habitat attractant, it does not meet the project purpose and need and is unavailable to implement. This alternative has been eliminated from further consideration and will not be discussed further within this EA.

2.2 TERMINAL AREA ALTERNATIVES

During the recently completed master planning process, a number of alternatives were evaluated to meet the short and long term commercial service needs of the airport. At the onset of the terminal analysis it was determined that development would have to occur west of the existing terminal facility due to safety setbacks required for aircraft operations which limit terminal development towards Runway 11-29, Runway 18-36, and Taxiway C east of the terminal facilities. The location of the airport traffic control tower, airport rescue and firefighting station, and existing general aviation facilities located north of the terminal facilities also prevented expansion in that direction.

The main environmental issue that was taken into consideration during the terminal planning process was the numerous wetland areas between the existing apron and automobile parking areas and Jetport Boulevard. The following sections describe the alternatives evaluated. (Please note, the following discussions include the long term development of the terminal and parking facilities. This allows the reader insight into the full extent of potential future impacts. This EA, however, will only fully evaluate the impacts of the planned short term terminal development as any future development is purely conceptual in nature. The terminal development will be undertaken in a phased approach with each phase requiring NEPA analysis before being undertaken.)

2.2.1 Terminal Alternative 1 (included within the Proposed Action Alternative)

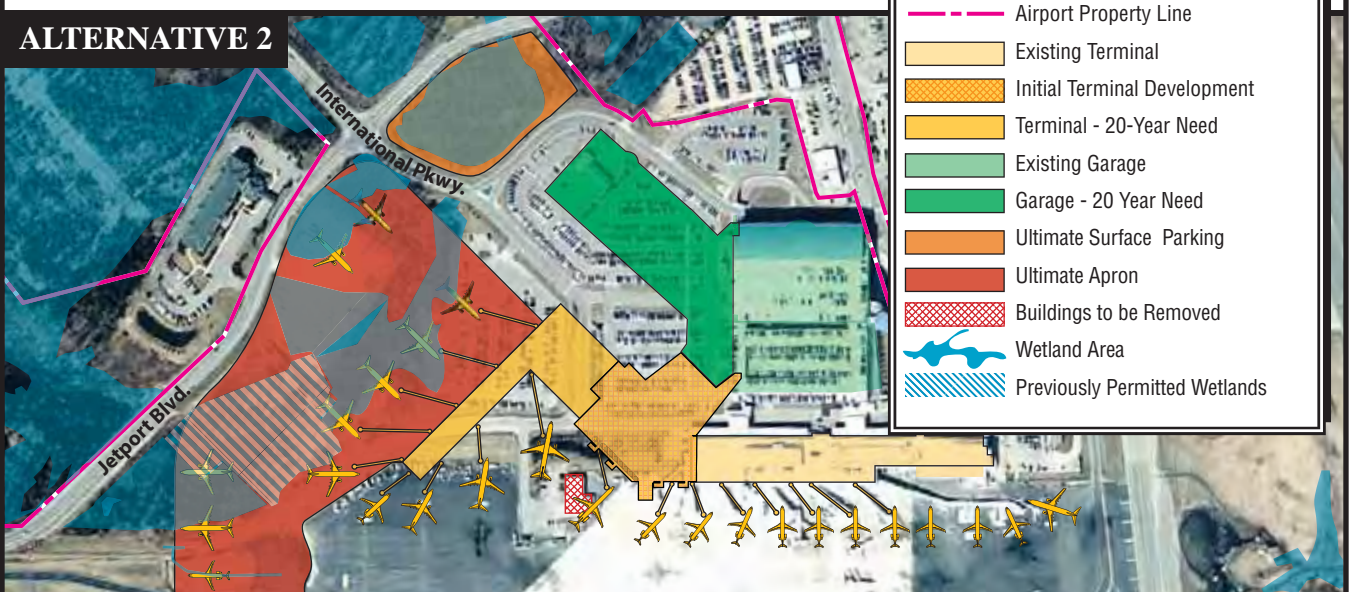
Terminal Alternative 1, over the 20-year horizon, includes improvements to the functional elements within the terminal building, additional automobile parking areas, changes to roadway circulation patterns, and provisions for airport business development along Jetport Boulevard. The 20-year plan is depicted on **Exhibit 2A**.

Projects to be undertaken in the short term and therefore evaluated within this EA include the following: an extension of the departure concourse to the west to add additional aircraft gates; a new core

ALTERNATIVE 1



ALTERNATIVE 2

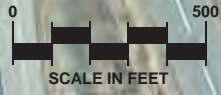


ALTERNATIVE 3



LEGEND

- Airport Property Line
- Existing Terminal
- Initial Terminal Development
- Terminal - 20-Year Need
- Existing Garage
- Garage - 20 Year Need
- Ultimate Surface Parking
- Ultimate Apron
- Buildings to be Removed
- Wetland Area
- Previously Permitted Wetlands



structure west of the existing building to accommodate new ticketing and baggage makeup with in-line explosive detection devices; and, an expanded second floor which would provide larger passenger screening points, secure hold room, and concessions areas. Replacement terminal employee parking is planned north of the existing surface parking areas to accommodate spaces lost due to the terminal building expansion. These improvements are depicted on Exhibit 1C.

This alternative meets the project purpose and need and is practicable to implement; therefore, it is considered to be part of the Proposed Action Alternative.

This alternative would impact the following environmental resources:

- Potential impacts to water quality during construction.
- 5.88 acres of wetlands (2.03 acres previously permitted).

Statutory or regulatory requirements applicable to this alternative include the following:

- An amendment to the Jetport's existing Site Location of Development Act permit.
- State of Maine *Natural Resources Protection Act* (permit required).
- Section 401 of the *Clean Water Act* (certification required)
- State of Maine Stormwater Management Law (permit required).
- *Migratory Bird Treaty Act*.
- Section 404 of the *Clean Water Act* (permit required).

2.2.2 Terminal Alternatives 2 and 3

The 20-year horizon development plans for Terminal Alternatives 2 and 3 are also depicted on **Exhibit 2A**. These alternatives provide similar improvements as Alternative 1 with the exception of the concourse configuration and planned apron areas. Both of these alternatives would result in the development of aircraft parking gates on each side of the concourse which results in a need for additional aircraft parking apron.

Terminal area improvements to be undertaken in the short term would mirror those evaluated as Terminal Alternative 1. Due to the loss of parking for apron area improvements, replacement terminal employee parking would be relocated east of International Parkway along Jetport Boulevard.

Terminal Alternative 2 would impact the following environmental resources:

- Potential impacts to water quality during construction.
- 5.88 acres of wetlands (2.03 acres previously permitted).

Statutory or regulatory requirements applicable to this alternative include the following:

- An amendment to the Jetport's existing Site Location of Development Act permit.
- State of Maine *Natural Resources Protection Act* (permit required).
- Section 401 of the *Clean Water Act* (certification required)
- State of Maine Stormwater Management Law (permit required).
- *Migratory Bird Treaty Act*.
- Section 404 of the *Clean Water Act* (permit required).

Terminal Alternative 3 would impact the following environmental resources:

- Potential impacts to water quality during construction.
- 6.8 acres of wetlands.

Statutory or regulatory requirements applicable to this alternative include the following:

- An amendment to the Jetport's existing Site Location of Development Act permit.
- State of Maine *Natural Resources Protection Act* (permit required).
- Section 401 of the *Clean Water Act* (certification required)
- State of Maine Stormwater Management Law (permit required).
- *Migratory Bird Treaty Act*.
- Section 404 of the *Clean Water Act* (permit required).

These alternatives were eliminated during the master planning process due to the future limitations on ultimate terminal expansion. Obtaining the required permits for Terminal Alternatives 2 and 3 may prove to be difficult due to the greater wetland impacts resulting from the construction of terminal parking along Jetport Boulevard east of International Parkway. FAA guidance dictates selection of the practical alternative which minimizes wetland impacts. Section 18.2e of FAA Order 1050.1E states that, "If an action would affect wetlands and there is a no practicable alternative, all practical means should be employed to minimize the wetland impacts..."

While these alternatives meet the project purpose and need, they have been eliminated from further consideration. Both Alternatives 1 and 2 place limitations on ultimate development which makes these alternatives impracticable to implement. Alternative 3 is more environmentally damaging due to the greater wetland impacts. These alternatives will not be discussed further within this EA.

2.3 DEICING FLUID COLLECTION

The Maine Department of Environmental Protection (MeDEP) requires that the Portland International Jetport have in place by November 1, 2010 a method to remove as much aircraft deicing fluid as practicable from Portland International Jetport's stormwater discharge. The proposed deicing fluid collection system will collect spent deicing fluid as it is applied to aircraft at designated deicing pads on the north-east portion of the terminal apron area. Spent deicing fluid will flow through collection drain trenches to the east where the proposed deicing fluid collection, storage, and recycling facilities are located. A 500,000-gallon underground storage tank will hold spent deicing fluid. The spent glycol deicing fluid will be processed and recycled. The distalate from spent deicing fluid processing will be sent to the City of Portland's waste water treatment facility for treatment prior to discharge. Recycled glycol will be trucked offsite by the company selected to perform deicing fluid recovery and processing operations.

There are no other practicable alternatives in locating the deicing pad and collection system. The deicing pads need to be placed on the apron area near the terminal gates to reduce aircraft positioning time when deicing is needed. This is the only area near the terminal gate positions with sufficient area to accommodate deicing procedures. This location is also nearly equidistant from the Runway 11 and Runway 29 ends, which reduces the time to depart after the deicing fluid is applied. This alternative meets the project purpose and need and is practicable to implement; therefore, it is considered to be part of the Proposed Action Alternative.

This alternative would impact the following environmental resources:

- Potential impacts to water quality during construction.

Statutory or regulatory requirements applicable to this alternative include the following:

- An amendment to the Jetport's existing Site Location of Development Act permit.
- State of Maine *Natural Resources Protection Act* (permit required).
- Section 401 of the *Clean Water Act* (certification required).
- State of Maine Stormwater Management Law (permit required).
- *Migratory Bird Treaty Act*.
- Section 404 of the *Clean Water Act* (permit required).

2.4 TAXIWAY IMPROVEMENT ALTERNATIVES

The current Master Plan for Portland International Jetport identified the need for a new taxiway located between Taxiways G and A east of Runway 18-36. This taxiway is intended to reduce the number of crossings of Runway 18-36 by air cargo and general aviation aircraft located along Taxiway G. Presently, aircraft located along Taxiway G must cross Runway 18-36 twice to reach Runway 29. This taxiway would reduce the potential for runway incursions by providing direct access to the Runway 29 end, the most used runway for departures by air cargo and general aviation aircraft located along Taxiway G.

There are no other alternatives to reduce runway incursion potential and allow aircraft direct access to the Runway 29 end.

This alternative meets the project purpose and need and is practicable to implement; therefore, it is considered to be part of the Proposed Action Alternative.

This alternative would impact the following environmental resources:

- Potential impacts to water quality during construction.
- 0.64-acres of wetlands.

Statutory or regulatory requirements applicable to this alternative include the following:

- An amendment to the Jetport's existing Site Location of Development Act permit.
- State of Maine *Natural Resources Protection Act* (permit required).
- Section 401 of the *Clean Water Act* (certification required).
- State of Maine Stormwater Management Law (permit required).
- *Migratory Bird Treaty Act*.
- Section 404 of the *Clean Water Act* (permit required).

2.5 RUNWAY 18-36 IMPROVEMENT ALTERNATIVES

The recently completed master plan evaluated a number of alternatives for Runway 18-36 which were focused on meeting FAA runway safety area (RSA) design standards and lengthening the runway to allow it to more fully serve as a back-up to Runway 11-29. The presence of numerous environmental re-

sources within the vicinity of the runway limited the number of development alternatives. These resources include numerous wetland areas and Long Creek on the south end of the runway, the Fore River to the north of Yellowbird Road, shoreline zoning requirements, and two sites listed on the National Register of Historic Places (Stroudwater Historic Area and the State Reform School/Brick Hill Historic District).

The following sections discuss feasible alternatives to improve Runway 18-36.

2.5.1 Runway 18-36 Improvement Alternative A (Master Plan Alternative)

Runway 18-36 Alternative A is depicted on **Exhibit 2B**. This alternative includes a 1,100-foot runway and taxiway extension to the south, and wider, longer RSAs behind each runway end to meet FAA required Airport Reference Code (ARC) B-III standards as specified in FAA Advisory Circular (AC) 150/5300-13, *Airport Design*. Fifteen-foot snow shoulders are also planned on each side of the runway. The Runway 18 and Runway 36 landing thresholds are displaced as required by AC 150/5300-13 to meet RSA standards prior to the landing threshold. The different locations of the landing and departure thresholds result in differences in takeoff and landing distances at the airport that are less than the actual pavement length. This requires the implementation of declared distances. Declared distances are used by the FAA to define the effective runway length for landing and takeoff. Declared distances ensure that pilots have sufficient information as to the operation limitations at the airport for both landing and takeoff operations. These calculations are shown on **Exhibit 2B**. The accelerate-stop distance available (ASDA) is the runway length declared available for the acceleration and deceleration of an aircraft aborting a takeoff, while the landing distance available (LDA) is equal to the runway length declared available and suitable for landing. Both the ASDA and LDA account make allowances for providing the full RSA during takeoff and landing at the airport. To maintain the continuity of the perimeter service road, the service road is relocated outside the extended Runway 18-36 runway object free area (OFA) and taxiway OFA. The construction costs of this alternative are estimated at \$7,850,000.

This alternative would impact the following environmental resources:

- Potential impacts to water quality during construction.
- 3.15 acres of wetlands.

Statutory or regulatory requirements applicable to this alternative include the following:

- An amendment to the Jetport's existing Site Location of Development Act permit.
- State of Maine *Natural Resources Protection Act* (permit required).
- Section 401 of the *Clean Water Act* (certification required).
- State of Maine Stormwater Management Law (permit required).
- *Migratory Bird Treaty Act*.
- Section 404 of the *Clean Water Act* (permit required).

While this alternative meets the project purpose and need, it is more environmentally damaging due to greater wetland impacts than other practicable alternatives. Therefore, it has been eliminated from further consideration as it may prove difficult to obtain the required permits due to there being practical alternatives which have less wetland impacts. FAA guidance dictates selection of the practical alternative which minimizes wetland impacts. Section 18.2e of FAA Order 1050.1E states that, "If an action would affect wetlands and there is no practicable alternative, all practical means should be employed to



LEGEND

- Existing Airport Property Line
- Wetlands
- 250' Shoreland Overlay District
- 75' Resource Setback
- Spring Hide Tide
- Runway Safety Area (RSA)
- Engineered Materials Arresting System
- Pavement to be Removed
- Ultimate Pavement
- Ultimate Road
- Accelerate-Stop Distance Available
Landing Distance Available

0 1200
SCALE IN FEET



minimize the wetland impacts...” Since this alternative is more environmentally damaging, it has been removed from further consideration.

2.5.2 Runway 18-36 Improvement Alternative B (included within the Proposed Action Alternative)

Runway 18-36 Alternative B is also shown on **Exhibit 2B**. This alternative is exactly the same as Alternative A, with the exception of the location and configuration of the perimeter service road. In Alternative B, the perimeter service road is located inside the runway OFA. This reconfiguration of the service road reduces total wetlands impacts in this alternative to 2.18 acres and was completed at the request of the MeDEP to limit wetland impacts. The MeDEP made this request at an on-site visit of the airport to view the wetland to be impacted on September 18, 2007. The FAA approved a modification to design standard on November 26, 2008 to allow the perimeter service road to be located within the limits of the OFA. In an August 2007 runway safety area determination, the FAA indicated that this is “the ideal alternative with respect solely to aviation safety.” A copy of the runway safety area determination is provided in Appendix B. The construction costs of this alternative are estimated at \$6,336,500.

This alternative meets the project purpose and need and is practicable to implement; therefore, it is considered to be part of the Proposed Action Alternative.

This alternative would impact the following environmental resources:

- Potential impacts to water quality during construction.
- 2.18 acres of wetlands.

Statutory or regulatory requirements applicable to this alternative include the following:

- An amendment to the Jetport’s existing Site Location of Development Act permit.
- State of Maine *Natural Resources Protection Act* (permit required).
- Section 401 of the *Clean Water Act* (certification required).
- State of Maine Stormwater Management Law (permit required).
- *Migratory Bird Treaty Act*.
- Section 404 of the *Clean Water Act* (permit required).

2.5.3 Runway 18-36 Improvement Alternative C

This alternative utilizes Engineering Materials Arresting System (EMAS) behind each end of Runway 18-36. EMAS would provide a level of safety that is generally equivalent to a full RSA; therefore, a full RSA is not required. The EMAS would need to be 300 feet long and 150 feet wide to accommodate the type of aircraft utilizing this runway. The EMAS bed would need to be located at least 75 feet from the takeoff position in order to reduce the degrading effects of jet blast and propeller wash. This results in a total of 375 feet beyond each runway end. To accommodate this, the Runway 18 end must be relocated approximately 300 feet south and a new entrance taxiway would be constructed allowing the pavement behind the new runway end to be removed. The Runway 18 landing threshold would be located 600 feet from the EMAS structure as specified in FAA Order 5200.9.

In this alternative, the Runway 36 end is shifted 800 feet to the south to replace the pavement lost behind the Runway 18 end (which allowed for the EMAS installation) and to provide for additional runway

length. The parallel taxiway is also extended to the south 300 feet west of the extended runway centerline. The EMAS is installed behind the new Runway 36 end. The Runway 36 landing threshold is displaced to ensure RSA standards are met prior to the landing threshold. The different locations of the landing and departure thresholds result in differences in takeoff and landing distances at the airport that are less than the actual pavement length. These calculations are shown on **Exhibit 2B**.

Similar to Alternatives A and B, the perimeter service road is relocated to maintain continuity of this roadway surface at the airport. This alternative assumes the same configuration shown in Alternative B. The construction costs of this alternative are estimated at \$12,800,000.

This alternative would impact the following environmental resources:

- Potential impacts to water quality during construction.
- 2.18 acres of wetlands.

Statutory or regulatory requirements applicable to this alternative include the following:

- An amendment to the Jetport's existing Site Location of Development Act permit.
- State of Maine *Natural Resources Protection Act* (permit required).
- Section 401 of the *Clean Water Act* (certification required).
- State of Maine Stormwater Management Law (permit required).
- *Migratory Bird Treaty Act*.
- Section 404 of the *Clean Water Act* (permit required).

This alternative will result in approximately 900 square feet of additional impervious surface than Alternatives A and B due to the installation of EMAS. This alternative results in less accelerate stop distance available and landing distance available than Alternative A and Alternative B. Due to the additional construction costs of EMAS and the fact that other alternatives result in longer departure and landing distances, this alternative is impracticable to implement and has been eliminated from further consideration. This alternative will not be discussed further within this EA.

2.6 RUNWAY 11-29 IMPROVEMENTS

Analysis undertaken during the master planning process determined that existing airport users have a need for 7,200 feet of departure and landing distance in each direction on Runway 11-29. This departure and landing length is currently only provided for Runway 29. Runway 11 is limited to 6,800 feet of landing and departure lengths to ensure that RSA design standards are met beyond the Runway 29 end. Presently, the RSA behind the Runway 29 end does not fully comply with FAA design standards as specified in AC 150/5300-13. A localizer antenna and the airport perimeter service road are located within the RSA. Beyond the service road are wetlands that do not meet standards for supporting aircraft and/or vehicles. When considering these objects, the RSA extends only 600 feet beyond the Runway 29 end. The FAA has implemented declared distances which limit the landing and departure lengths on Runway 11 by 400 feet to ensure a full 1,000-foot RSA is accounted for by pilots when departing and landing at the airport. Aircraft operators must load their aircraft to be able to depart in the declared distance available of 6,800 feet instead of the full 7,200 feet of pavement length. As the full 1,000-foot RSA is available beyond the Runway 11 end, there are no limitations on the use of Runway 29. Therefore, the full 7,200 feet of pavement is available for aircraft landing and departing Runway 29. The different runway length requires the airlines to load aircraft differently depending upon which runway is in

use, causing a disparity between capabilities at the airport. **Exhibit 2C** depicts the current runway lengths available for landing on Runway 11 and Runway 29.

2.6.1 Runway 11-29 Improvements Alternative A (included within the Proposed Action Alternative)

As shown on **Exhibit 2C**, this alternative involves clearing objects within the RSA beyond the Runway 29 end and grading and filling the RSA to standard. This would allow the RSA to extend a full 1,000 feet beyond the Runway 29 end, thus eliminating the need to utilize declared distances on Runway 11. Eliminating declared distances would increase the landing and departure length on Runway 11 from 6,800 feet to 7,200 feet, eliminating the disparity in capabilities between Runway 11 and Runway 29 at the airport and the need to load aircraft differently based upon which runway is being used.

This alternative would impact approximately 4.89 acres of wetlands, which would require mitigation. However, the filling of these wetlands would comply with the airport's WHMP which has identified these wetlands as a bird attractant. It is indicated by the USDA that the removal of the bird attractant is the primary means to control the hazard of bird strikes.

As this alternative is practicable to implement and meets the stated purpose and need for both the Runway 11-29 and the WHMP, it will be analyzed further in this document. In an August 2007 runway safety area determination, the FAA indicated that this is "the ideal alternative with respect solely to aviation safety." A copy of the runway safety area determination is provided in **Appendix B**. The construction costs of this alternative are estimated at \$1,750,000.

This alternative would impact the following environmental resources:

- Potential impacts to water quality during construction.
- 4.89 acres of wetlands.

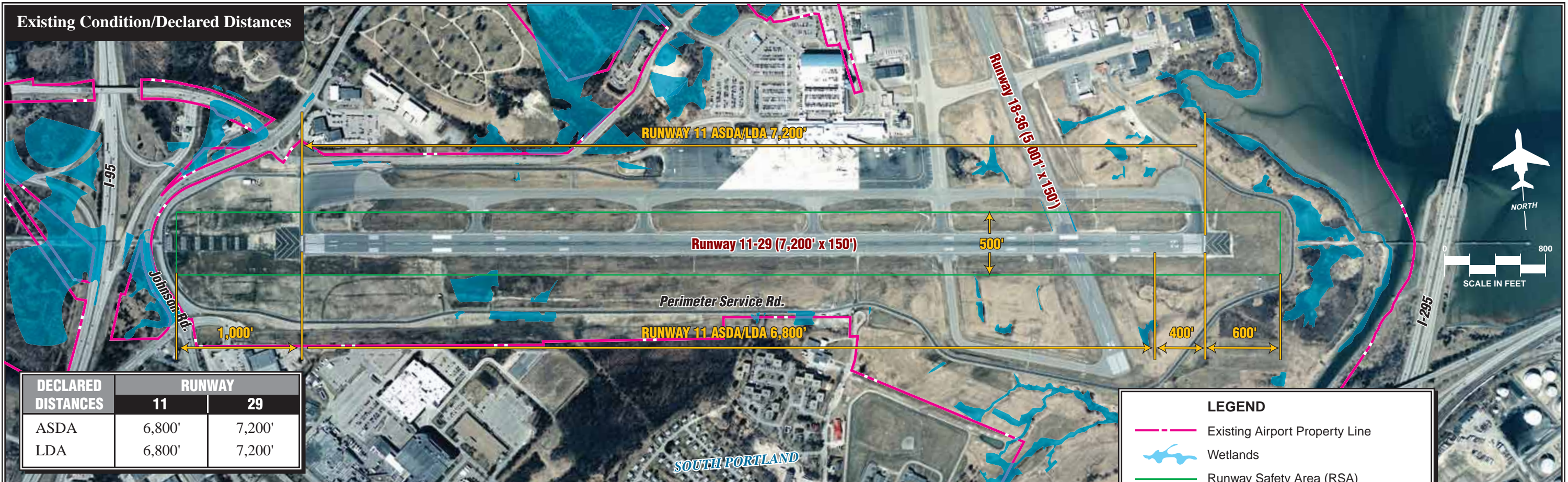
Statutory or regulatory requirements applicable to this alternative include the following:

- An amendment to the Jetport's existing Site Location of Development Act permit.
- State of Maine *Natural Resources Protection Act* (permit required).
- Section 401 of the *Clean Water Act* (certification required).
- State of Maine Stormwater Management Law (permit required).
- *Migratory Bird Treaty Act*.
- Section 404 of the *Clean Water Act* (permit required).

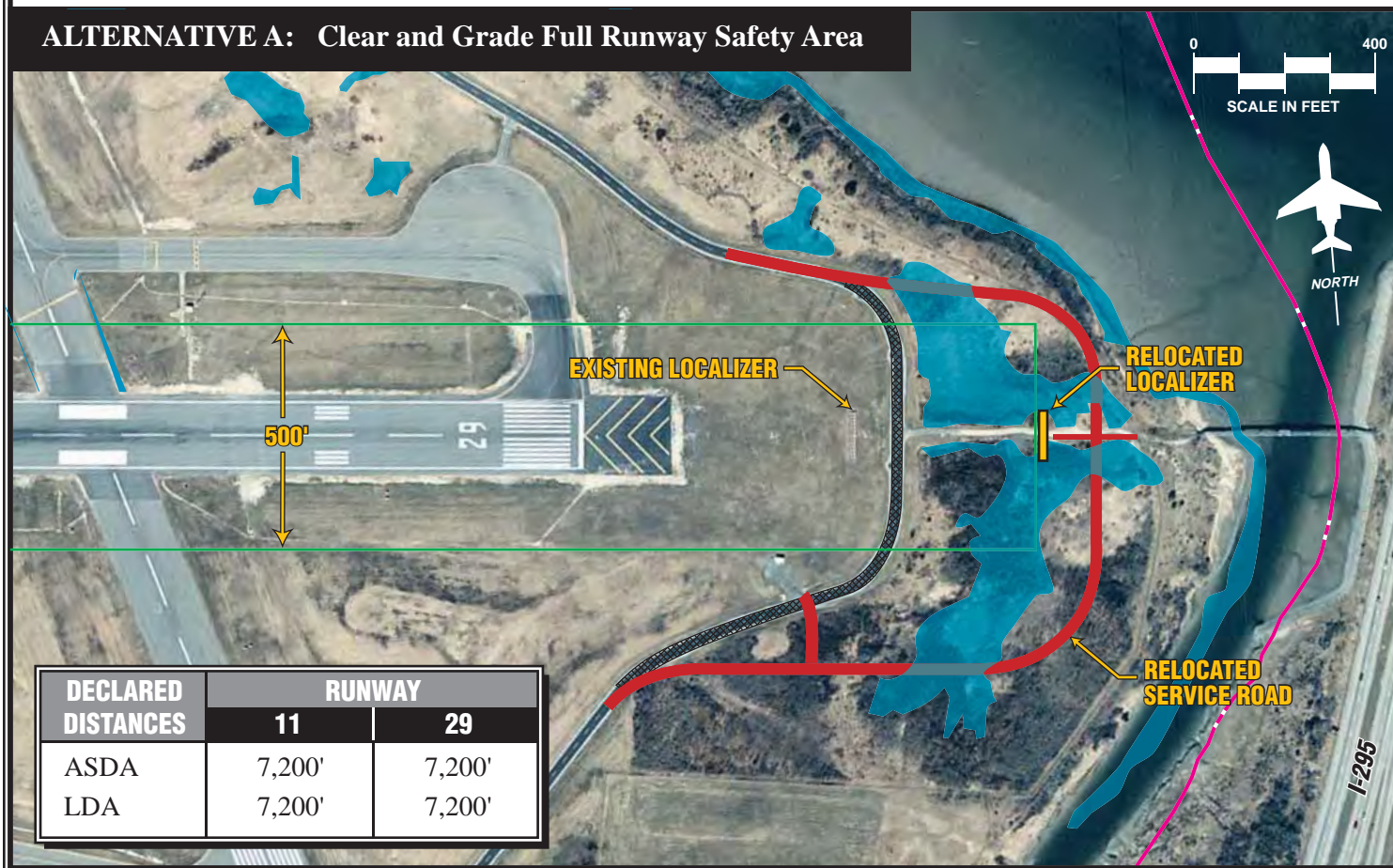
2.6.2 Runway 11-29 Improvements Alternative B

Implementation of this alternative involves the installation of EMAS. An EMAS to serve Runway 29 and its critical aircraft would need to be approximately 450 feet long and 150 feet wide. The EMAS bed would begin 75 feet after the pavement ends on Runway 29. This alternative would eliminate the need for declared distances; therefore, the departure and landing lengths available on Runway 11 would increase from 6,800 feet to 7,200 feet. The construction costs of this alternative are estimated at \$7,250,000. This alternative would also eliminate the need to relocate the localizer antenna and perimeter service road.

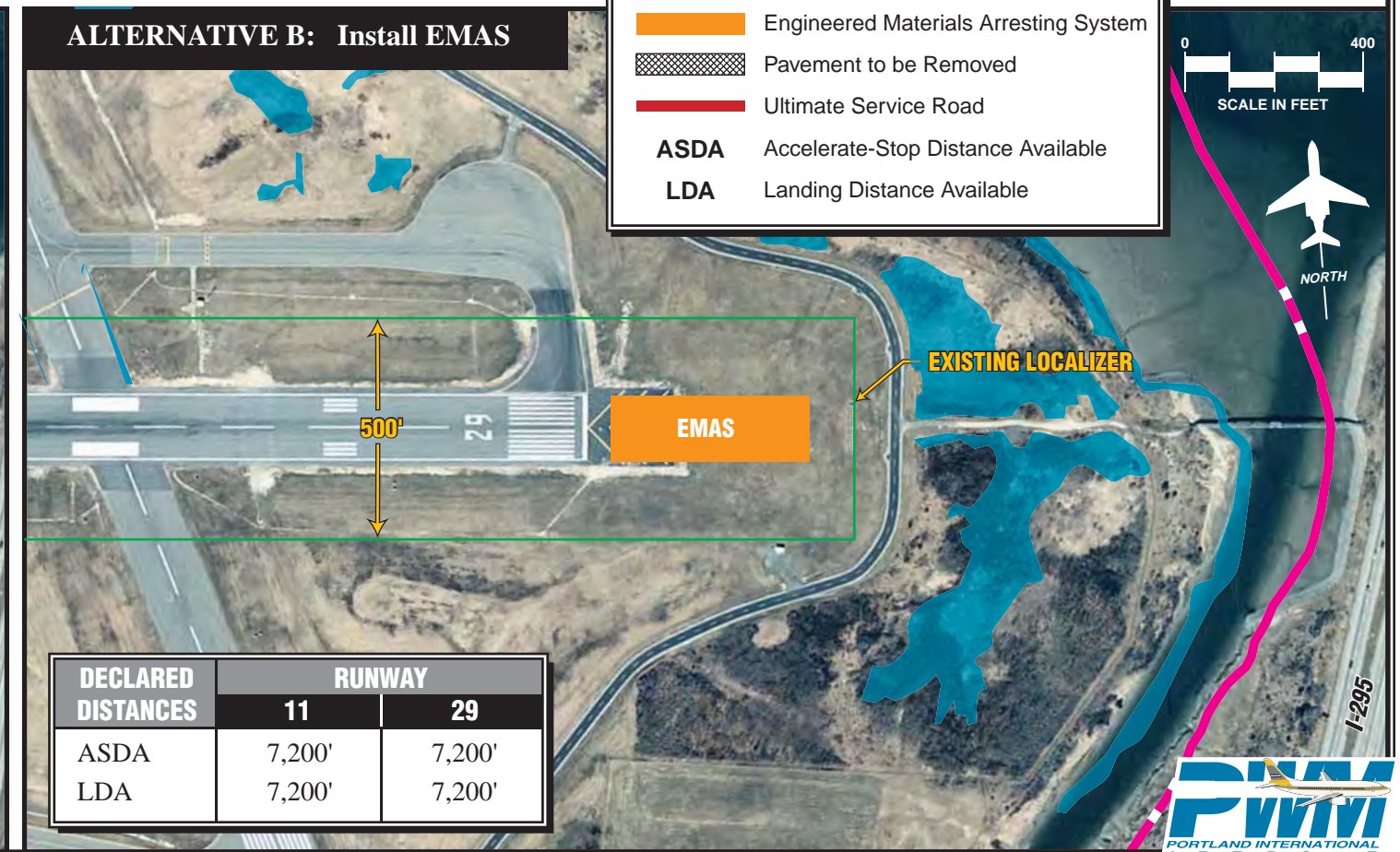
Existing Condition/Declared Distances



ALTERNATIVE A: Clear and Grade Full Runway Safety Area



ALTERNATIVE B: Install EMAS



This alternative would impact the following environmental resources:

- Potential impacts to water quality during construction.

Statutory or regulatory requirements applicable to this alternative include the following:

- An amendment to the Jetport's existing Site Location of Development Act permit.
- State of Maine *Natural Resources Protection Act* (permit required).
- Section 401 of the *Clean Water Act* (certification required).
- State of Maine Stormwater Management Law (permit required).
- *Migratory Bird Treaty Act*.
- Section 404 of the *Clean Water Act* (permit required).

In comparison with Alternative A, Alternative B would not directly impact the wetlands off the end of Runway 29. However, per the WHMP, the wetlands need to be filled regardless. While this project meets the purpose and need, the additional costs of installing and maintaining EMAS result in this alternative being impracticable to implement. Therefore, this alternative is not considered further in this document

2.7 NO ACTION ALTERNATIVES

The No Action Alternative considers maintaining all existing airport facilities in their current condition. Each of the elements of the Proposed Action Alternative is considered below.

Runway Safety Improvements

The No Action Alternative does not improve the Runway 29 RSA, Runway 18 RSA, or the north Runway 36 RSA. As described in the Purpose and Need in Chapter One, improvements are required to these RSAs as specified in Federal law and by the FAA's Runway Safety Area Program. The No Action Alternative does not meet the identified purpose and need for the facility, as identified in Chapter One. While the No Action Alternative does not meet the purpose and need, in accordance with CEQ 1502.14, it is further analyzed with regard to its potential environmental impact in Chapter Four of this environmental document.

WHMP

Under the No Action Alternative, the wetlands beyond Runway 29 would not be removed as recommended by the WHMP, and European starlings and blackbirds would continue to be attracted to this area. This increases the potential for bird strikes and the potential for severe damage to aircraft or the potential for the loss of life due to an aircraft accident. The No Action Alternative does not meet the identified purpose and need for the facility, as identified in Chapter One. While the No Action Alternative does not meet the purpose and need, in accordance with CEQ 1502.14, it is further analyzed with regard to its potential environmental impact in Chapter Four of this environmental document.

Terminal Improvements

Under a No Action Alternative, the terminal area would not be improved to meet the demands of the airport service area. This would limit the ability of the airport to efficiently process passengers and baggage through the security screening process. The deicing fluid collection system would not be constructed, which would be in violation of a requirement from the MeDEP to have such a system operational by November 1, 2010. The No Action Alternative does not meet the identified purpose and need for the terminal, as identified in Chapter One. While the No Action Alternative does not meet the purpose and need, in accordance with CEQ 1502.14, it is further analyzed with regard to its potential environmental impact in Chapter Four of this environmental document.

Runway Length

Under the No Action Alternative, runway length requirements for the mix of aircraft currently using Runway 11-29 are not met. Runway 18-36 would not be constructed to better serve as a back-up to Runway 11-29 by providing a longer runway surface for departures and landings. The No Action Alternative does not meet the identified purpose and need for runway length, as identified in Chapter One. While the No Action Alternative does not meet the purpose and need, in accordance with CEQ 1502.14, it is further analyzed with regard to its potential environmental impact in Chapter Four of this environmental document.

Taxiways

Under the No Action Alternative, the taxiway extending between Taxiway G and the Runway 29 end would not be constructed. This taxiway eliminates runway crossings. By eliminating runway crossings, the potential for runway incursions is minimized and the safety of aircraft operations is increased. The No Action Alternative does not meet the identified purpose and need for reducing runway incursion potential, as identified in Chapter One. While the No Action Alternative does not meet the purpose and need, in accordance with CEQ 1502.14, it is further analyzed with regard to its potential environmental impact in Chapter Four of this environmental document.

Chapter Three

AFFECTED ENVIRONMENT

Chapter Three

AFFECTED ENVIRONMENT

Environmental Assessment
Portland International Jetport

The purpose of this chapter is to identify or highlight any important background materials that describe the existing environment at Portland International Jetport.

3.1 AIRPORT BACKGROUND AND FACILITIES

Portland International Jetport is uniquely situated within the corporate limits of the cities of Portland, South Portland, and Westbrook, Maine. The airport is located just west of Interstate Highway 95. Primary access to the commercial service terminal building and west general aviation facilities is via International Parkway and Westbrook Street from Congress Street or Jetport Boulevard. Air cargo and eastern general aviation facilities are accessed via Yellowbird Road. The south general aviation facilities are accessed via Jetport Plaza Road. Exhibit 1A depicted the airport in its local and regional setting.

The Airport is owned and operated by the City of Portland. A standing three-person transportation committee oversees the city-wide infrastructure for the City Council.

Facilities at an airport can be divided into two distinct categories: airside facilities and landside facilities. Airside facilities include those directly associated with aircraft operations. Landside facilities include those necessary to provide an interface between surface and air transportation, as well as support aircraft servicing, storage, maintenance, and operational safety.

3.1.1 Airside Facilities

Airside facilities generally include, but are not limited to, runways, taxiways, connecting taxiways, airfield lighting, and navigational aids. Airside facilities are depicted on **Exhibit 3A**. **Table 3A** summarizes airside facility data.



- **Runways**

Portland International Jetport operates two runways: the primary runway is Runway 11-29, at 7,200 feet long and 150 feet wide. There is a 200-foot-long paved blast pad off each runway end. The runway is served at both ends by an instrument landing system (ILS) approach.

TABLE 3A
Runway Data
Portland International Jetport

	Runway 11	Runway 29	Runway 18	Runway 36
Dimensions	7,200 x 150 feet		5,001 x 150 feet	
Surface	Asphalt/grooved		Asphalt	
Weight Limitation (Pounds)	Single wheel: 75,000 Double wheel: 169,000 Double tandem: 300,000		Single wheel: 75,000 Double wheel: 165,000 Double tandem: 300,000	
Runway Lights	High intensity, Touchdown Zone, Centerline		Medium intensity	
Latitude	43-38.751667N	43-38.642000N	43-39.268398N	43-38.480280N
Longitude	070-19.564667W	070-17.939667W	070-18.439078W	070-18.111795W
Elevation	75.6 ft.	42.2ft.	44.6 ft.	46.6 ft.
Gradient	0.47%		0.04%	
Runway Heading	112° magnetic, 095° true	292° magnetic, 275° true	180° magnetic, 163° true	000° magnetic, 343° true
Declared Distances	TORA – 7,200 ft. TODA – 7,200 ft. ASDA – 6,800 ft. LDA – 6,800 ft.	TORA – 7,200 ft. TODA – 7,200 ft. ASDA – 7,200 ft. LDA – 7,200 ft.	None	None
Markings	Precision		Non-precision	
Visual Glide Slope Indicator	PAPI – 4R	PAPI – 4R	VASI – 4L	VASI – 4R
RVR Equipment	TD, Midpoint., Rollout	TD, Midpoint., Rollout	No	No
Runway End/Approach Lights	ALSF-2/SSALR	MALS	REIL	REIL
Instrument Approach Procedures	ILS, NDB, RNAV (GPS)	ILS, RNAV (GPS)	RNAV (GPS)	RNAV (GPS)

Source: Airnav; Airport inspection

PAPI: Precision approach path indicator

VASI: Visual approach slope indicator

REIL: Runway end identifier lights

MALS: Medium-intensity approach lighting system with runway alignment indicator lights

ALSF - High intensity approach lighting system with sequenced flashers and runway alignment indicator lights

ILS – Instrument Landing System

NDB – Nondirectional Beacon

RNAV – Area Navigation

TD - Touchdown

GPS – Global Positioning System

The RSA extends approximately 610 feet east of the Runway 29 end. Since the runway safety area (RSA) does not extend the standard 1,000 feet beyond the Runway 29 end, the Federal Aviation Administration (FAA) has reduced takeoff and landing distances on Runway 11 to ensure that a full standard RSA is factored into takeoff and landing calculations. Reducing the Runway 11 takeoff and landing distances utilizes a concept known as declared distances. The declared distance calculations are shown on **Table 3A**. The accelerate-stop distance available (ASDA) is the runway length declared available for the acceleration and deceleration of an aircraft aborting a takeoff, while the landing distance available (LDA) is equal to the runway length declared available and suitable for landing. Both the ASDA and LDA make allowances for providing the full RSA during takeoff and landing

at the airport. According to FAA regulations, the TORA and TODA are equal to the actual runway pavement length.

Runway 18-36 serves as the crosswind runway. It is 150 feet wide and 5,001 feet long. While capable of handling larger air carrier aircraft on an infrequent basis during certain wind and temperature conditions, it primarily serves general aviation and commuter/regional airline aircraft, particularly during high wind conditions and when advantageous to both air traffic control (ATC) and pilots.

- **Taxiways**

A series of two parallel and six exit taxiways provide adequate coverage of the airport, with easy access to all four runway ends and aprons.

- **Lighting and Markings**

The location of the airport at night is universally identified by a rotating beacon. A rotating beacon projects two beams of light, one white and one green, 180 degrees apart. The Jetport has a standard 36-inch rotating beacon located south and west at the airport maintenance facility.

Runway 11-29 is equipped with an approach lighting system (ALS) on both ends. Runway 18-36 has no ALS. Runway 29 is equipped with a medium intensity approach lighting system with runway alignment indicator lights (MALSR). The lights start 200 feet from the runway end, and extend across the Fore River, for a total distance of 1,400 feet. Runway 11 is equipped with a higher standard system, a dual mode system consisting of a high intensity ALS with sequenced flashers, Category II configuration (ALSF-2) and a simplified short approach lighting system with runway alignment indicator lights (SSALR). The ALSF-2 is necessary during periods when Category II approaches are in operation, permitting weather minimums to 100-foot cloud ceilings. This ALS operates as an SSALR system until the weather goes below visual weather minimums, then operates as an ALSF-2. This system is 3,000 feet long.

Runway edge lights are used to outline the edges of runways during periods of darkness or restricted visibility conditions. These light systems are classified according to the intensity or brightness they are capable of producing: they are the High Intensity Runway Lights (HIRL), Medium Intensity Runway Lights (MIRL), and the Low Intensity Runway Lights (LIRL). Runway 11-29 is equipped with HIRL and Runway 18-36 has MIRL.

Runway centerline lights are installed on Runway 11-29 to facilitate landing under adverse visibility conditions. They are located along the runway centerline and are spaced at 50-foot intervals.

Touchdown zone lights are installed on Runway 11 to indicate the touchdown zone when landing under adverse visibility conditions. They consist of two rows of transverse light bars disposed symmetrically about the runway centerline.

Runway end identifier lights (REIL) are installed on the Runway 18 and 36 ends to provide rapid and positive identification of the approach end of a particular runway.

All runway ends are equipped with a visual landing system; either a visual approach slope indicator (VASI) system or precision approach path indicator (PAPI) lights. The PAPIs provide approach path guidance with a series of light units. The four-unit PAPI gives the pilot an indication of whether their

approach is above, below, or on-path through the pattern of red and white light visible from the light unit. A VASI is the older version of the PAPI, and also provides approach path guidance through the patterns of red and white lights.

All taxiways at Portland International Jetport are equipped with medium intensity taxiway lights (MITL).

Runways 11 and 29 are equipped with precision runway markings. These identify the runway centerline, runway designation, threshold, pavement edges, touchdown point, and aiming point. The nonprecision runway markings to Runways 18 and 36 identify the runway centerline, runway designation, and threshold.

- **Instrument Approach Procedures**

Instrument approach procedures are a series of predetermined maneuvers established by the FAA that use electronic navigational aids that assist pilots in locating and landing at an airport, especially during instrument flight conditions. Portland International Jetport has six published instrument approach procedures. An instrument landing system (ILS) approach is provided to both Runways 11 and 29. An Area Navigation (RNAV) approach utilizing the global position system (GPS) is available to all four runway ends. With the exception of the RNAV approach to Runway 18, which only provides course guidance information, all instrument approaches at the airport provide both vertical descent and course guidance.

3.1.2 Landside Facilities

Landside facilities are essential to the daily operation of the airport and consist primarily of those facilities required to accommodate aircraft, pilots, and passengers while at the airport. Landside facilities at Portland International Jetport are depicted on **Exhibit 3B**.

- **Passenger Terminal Building**

The terminal is a two-story linear design. Departing passengers enter the terminal on ground level, generally through the west end of the terminal where all airline ticket counters are located. Security processing and gates are on the second level.

Arriving passengers exit the second level and proceed to the baggage claim area at the terminal's east end, then exit to ground transportation via the access points used by departing passengers and visitors. Rental car customers proceed to the east end of the new parking garage, lower level.

There are 11 loading gates, including seven serviced with aircraft loading fingers. Six are standard size, and three are designed for loading regional jets. The remaining two gates are designed for ground access to aircraft.

The apron area serving the passenger terminal building is a rectangular 96,000-square foot ramp (2,160 feet x 400 feet) adjacent to the terminal building, with adequate room to service seven to eight air transport category aircraft simultaneously. In addition, a belly cargo ramp west of the main ramp serves as a marshalling area for spare aircraft.



Overall, the airport has seven surface parking lots (five public and two employee) serving the passenger terminal building. These lots have a total capacity of 3,253 automobiles, including disabled passenger parking spaces. A six-level parking garage provides both long and short term parking. Rental car ready/return is available below ground level in this garage. A new five-level parking garage was under construction in 2008. This five-level parking garage replaces a three-level parking garage and will connect to the existing parking garage.

- **Air Cargo**

All air cargo facilities at the Jetport are located east of Runway 18-36 along Taxiway G. FedEx maintains air cargo facilities at the Jetport. FedEx facilities include a 16,500-square foot building, 11,100 square yards of apron, and 7,000 square yards of space used for automobile parking and trucking docking.

- **General Aviation**

General aviation facilities at the airport are primarily located west of Runway 18-36 and north of Runway 11-29. This area provides an aircraft parking apron, storage hangars, and office and terminal space. Three general aviation hangars are located east of Runway 18-36 along Taxiway G. Combined, the total amount of apron area dedicated to general aviation activities encompasses approximately 57,000 square yards, including space for aircraft tiedown and taxiway access. General aviation hangar area is approximately 66,500 square feet. A new general aviation area is under development along Taxiway C, west of the Runway 36 end. This area will include an apron and aircraft storage hangars. All typical fixed-base operator (FBO) services such as fuel sales, flight training, aircraft charter, aircraft sales, and maintenance are provided by private businesses at the airport.

- **Storage Tanks**

A wide range of fuel is stored on the airport in tanks ranging from small personal containers to 25,000-gallon bulk storage tanks. The significant facilities are listed in **Table 3B**.

3.2 LAND USE

Documentation in **Appendix G** (in the form of a Land Use Assurance letter) supports the City of Portland's assurance under 49 USC 47107(a)(10), formerly Section 511(a)(5) of the 1982 Airport Act, that appropriate action, including the adoption of zoning laws, would be taken, to the extent reasonable, to restrict the use of land adjacent to or in the immediate vicinity of the Portland International Jetport to activities and purposes compatible with normal Airport operations, including landing and takeoff of aircraft.

TABLE 3B
Fuel Tanks
Portland International Jetport

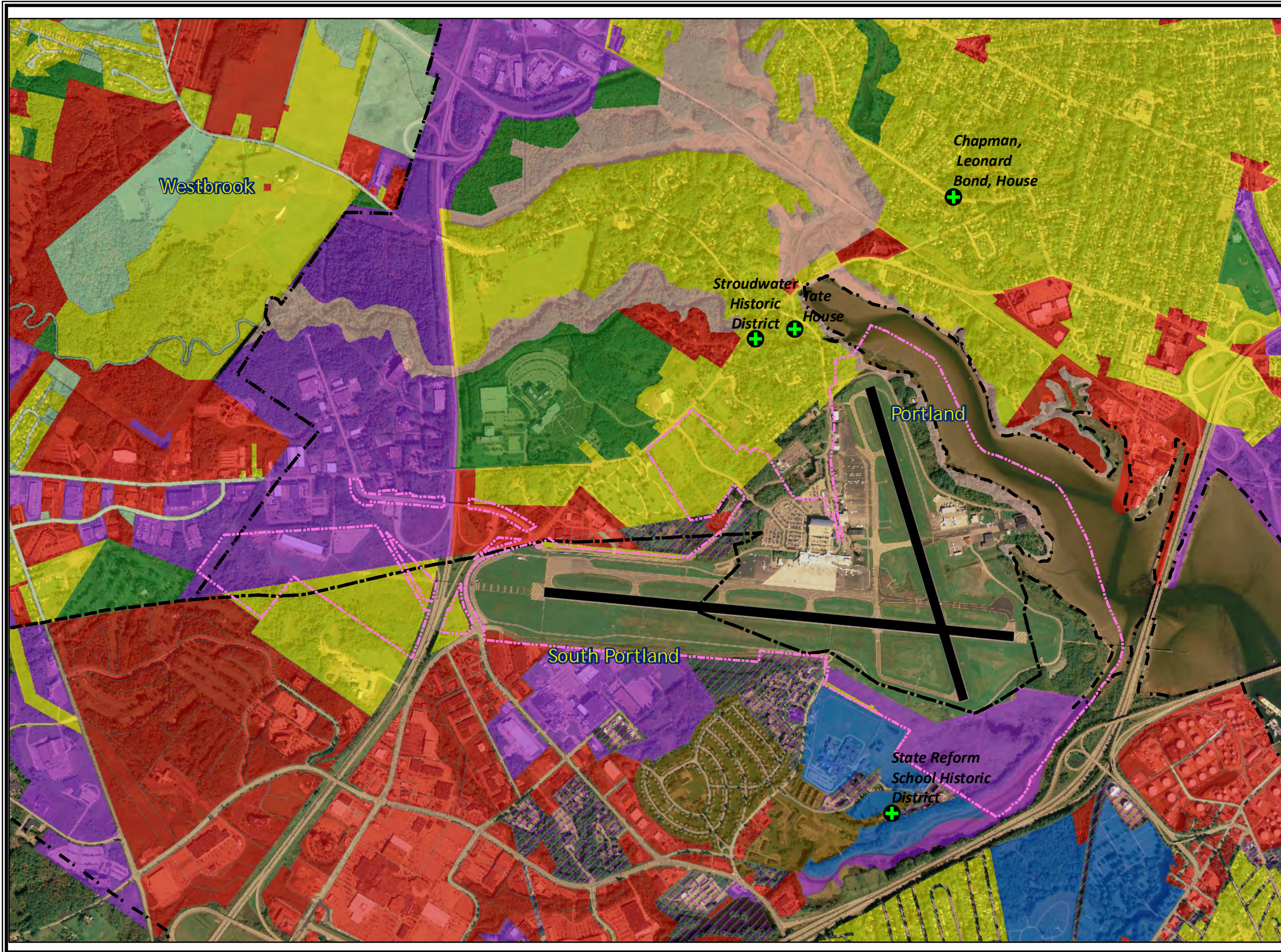
Location	Installed	Type Containment	Fuel Type	Capacity (gallons)	Ownership
East of Northeast Air's hangar on south side of GA ramp	1998	Double-walled steel tank sitting in concrete containment tub	Auto Gas	3,000	Northeast Air
East of Northeast Air's hangar on south side of GA ramp	1998	Double-walled steel tank	Jet A	25,000	Northeast Air
East of Northeast Air's hangar on south side of GA ramp	1998	Double-walled steel tank	Jet A	25,000	Northeast Air
East of Northeast Air's hangar on south side of GA ramp	1998	Double-walled steel tank	Jet A	12,000	Northeast Air
East of Northeast Air's hangar on south side of GA ramp	1998	Double-walled steel tank	Diesel	12,000	Northeast Air
Centered on west edge of GA ramp in the north complex	1960s	Double-walled steel tank in concrete containment tub	Avgas (100LL)	20,000	City of Portland
South of Jetport maintenance building	1999	Double-walled steel tank, bulk headed for diesel and auto gas	Auto Gas Diesel	4,000 6,000	City of Portland
North end of airfield lighting vault	2004	Double-walled steel tank	Diesel	2,000	City of Portland
Northeast corner of ALSF generator vault	2004	Double-walled steel tank surrounded by concrete vault	Diesel	2,000	FAA

Source: Airport Management (January 2005).

- **Existing Land Use**












Existing land uses surrounding Portland International Jetport are depicted on **Exhibit 3C**. The airport is bordered on the east by the Fore River. Several distinct land uses are located along the airport's northern property boundary along Congress Street. Along the northeast property boundary the airport abuts residential land uses associated with the Stroudwater Historic District. Immediately north of the passenger terminal building parking garage, there is a hotel site and rental car ready/return area located along Jetport Boulevard. The Brooklawn Memorial Cemetery is located to the northwest. Commercial/industrial land uses are located at the intersection of Jetport Boulevard and Congress Street. A hotel site is located in the northwest corner of the intersection of International Parkway and Jetport Boulevard. A golf course and commercial/industrial land uses are located adjacent to airport property located west of Interstate 95. Areas immediately east and west of the airport are vacant, undeveloped land.

Commercial/industrial land uses are located along the southwestern property boundary at the intersection of Johnson Road and Jetport Plaza Road. To the east of these facilities are residential land uses associated with the City of South Portland's Redbank neighborhood along Westbrook Street. A commercial/industrial facility is located at the Westbrook Street/Jetport Plaza Road intersection. Commercial development at this intersection contributes to increased traffic congestion in the area.

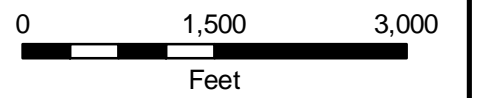


Portland International Jetport

Existing Land Use

-  National Register of Historic Places
-  Airport Property
-  Urban Areas
-  Single Family
-  Multi Family
-  Commercial
-  Industrial
-  Mixed Use
-  Public
-  Open Space
-  Protected Resource

Data Sources:
 Cumberland County Aerial Photography is from the NAIP 2006
 Westbrook Landuse data is from the City of Westbrook
 Portland Landuse data is from the City of Portland
 South Portland Landuse data is from the City of South Portland



The State Reform School/Brick Hill Historic District and Long Creek are located along the airport's southern property boundary east of Westbrook Street.

According to the State of Maine's Bureau of Remediation and Waste website¹, the EcoMaine Ash and Landfill is located approximately 8,400 feet west of the approach end of Runway 11. The EcoMaine facility burns waste for electricity and distributes the ash in the landfill.

- **Future Land Use**

Exhibit 3D depicts future land use planning for the areas surrounding Portland International Jetport. Future planned land uses are similar to existing land uses.

3.3 EXISTING ENVIRONMENT

This section provides background information on the existing natural and cultural environment within and surrounding Portland International Jetport. Environmental resources (as described within Appendix A of FAA Order 1050.1E) which are not located within the project area include the following:

- Coastal barriers – There are no coastal barriers within the airport environs.
- Farmland – Coordination with the National Resource Conservation Service (NRCS) during a 1999 Environmental Assessment for improvements at Portland International Jetport² resulted in the NRCS declaring that there are no prime or unique farmlands at the airport. This decision was based upon the fact that the airport is already designated as a non-agricultural zone, is zoned for urban use, and there is no special farmland protection zone designation for the property.
- Wild and Scenic Rivers – The closest Designated Wild and Scenic River is the Lamprey River (New Hampshire) which is approximately 50 miles southwest of the airport.

Appendix H provides a detailed description of each of the 20 plus environmental impact categories as defined within FAA Order 1050.1E.

3.3.1 Natural Resources

- **Air Quality**

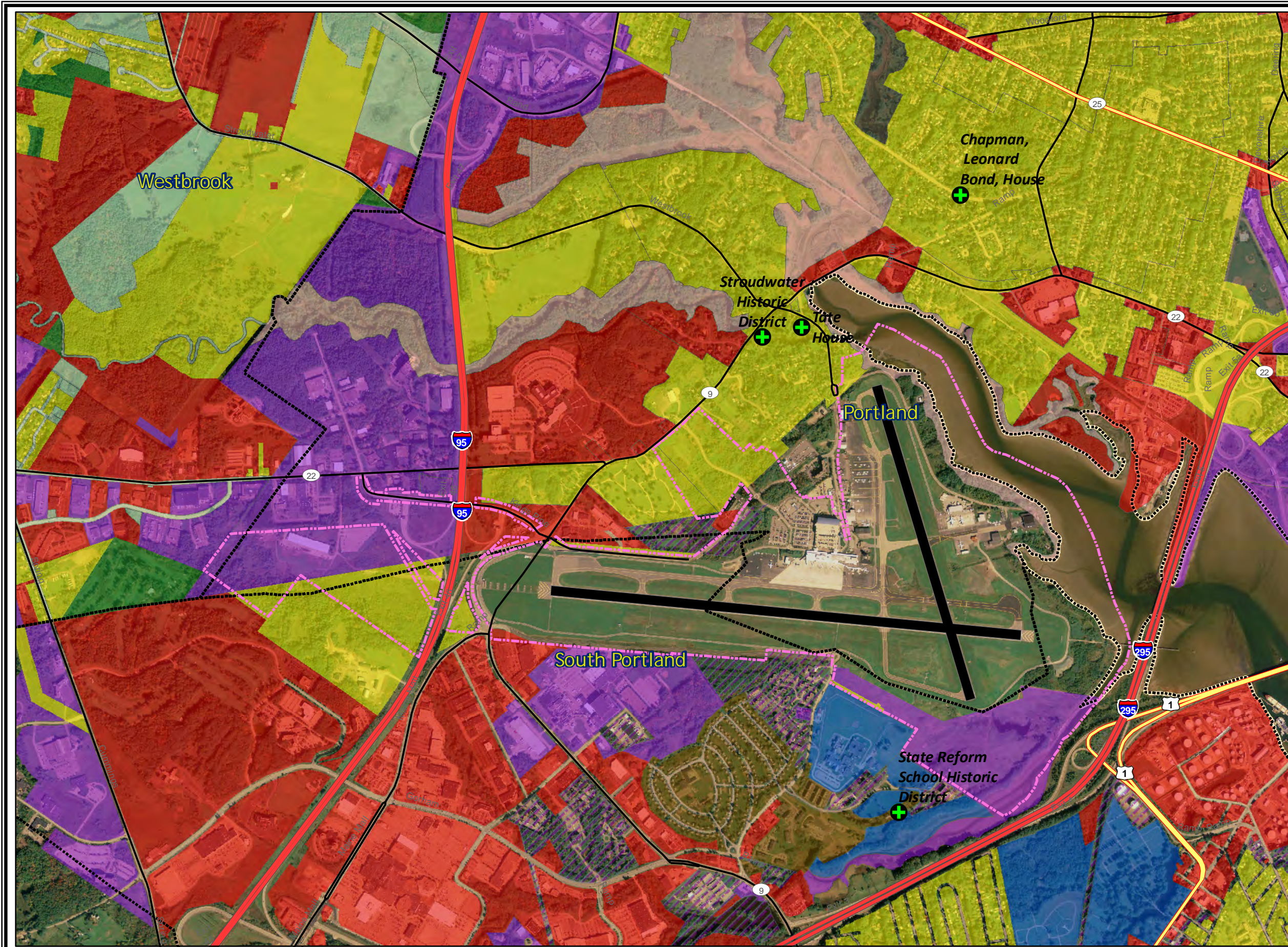
Portland International Jetport is located in Cumberland County, Maine. According to the most recent update contained on the Environmental Protection Agency's (EPA's) Greenbook website³, Cumberland County is classified as in maintenance for 8-hour Ozone and in attainment for all other criteria pollutants. The Portland International Jetport operates under Maine Air Emission License A-582-71-F-R/A⁴. This license allows for the operation of boilers and five generators.

¹ State of Maine, Department of Environmental Quality, Bureau of Remediation and Waste, <http://maine.gov/dep/rwm/solidwaste/landfillactive.xls>, accessed September 2008.

² *Environmental Assessment to provide RSA/OFA for Runway 11-29, Relocate and Widen SR 9 and Terminal Area Sufficiency*, Coffman Associates, May 1999.












³ <http://www.epa.gov/oar/oaqps/greenbk/anay.html>, accessed October 2008.

⁴ State of Maine, Bureau of Air Quality, List of Minor Source Licenses, <http://www.maine.gov/tools/whatsnew/index.php?topic=DEP+Minor+Source&orderby=headline>, accessed October 2008

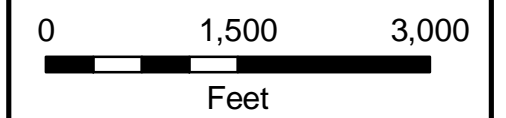


Portland International Jetport

Future Land Use

-  National Register of Historic Places
-  Urban Areas
-  Airport Property
-  Single Family
-  Multi Family
-  Commercial
-  Industrial
-  Mixed Use
-  Public
-  Open Space
-  Protected Resource
-  Waterfront

Data Sources:
 Cumberland County Aerial Photography is from the NAIP 2006
 Westbrook Landuse data is from the City of Westbrook
 Portland Landuse data is from the City of Portland
 South Portland Landuse data is from the City of South Portland



- **Biotic Resources/Federally-Listed Threatened and Endangered Species**

As detailed in the *Biological Resources Inventory (Appendix E)*, routine vegetation management for aviation safety requirements, general operations, and/or drainage and stormwater management occurs throughout virtually the entire area inside the existing airfield security fence at the Portland International Jetport. Vegetation management has occurred less frequently in shrubby and undeveloped areas where portions of the WHMP and new terminal apron, deicing fluid containment and processing equipment, and automobile parking areas are proposed.

“Beginning with Habitat Maps” and “Essential Wildlife Habitat Maps” prepared by MIF&W and appearing in **Appendix A** of the *Biological Resources Inventory* indicate no important deer wintering areas or nesting sites for bird colonies are present at Portland International Jetport. Given the nature of surrounding development, with Interstates 95 and 295 bounding the Jetport on the east and west and residential or commercial development including the Maine Mall to the north and south, areas of wildlife habitat are generally absent at the Jetport so that establishment of sufficient buffers for providing wildlife with travel lanes is not relevant in this part of Greater Portland.

Fresh and tidal wetland communities at Portland International Jetport, if not in an isolated depression, drain to the Fore River. Within the airfield security fencing, regularly mown emergent wetland communities can be classified as palustrine non-persistent emergent. Shrub thicket, dominated by hydrophytic shrubs such as speckled alder (*Alnus incana*) or arrowwood (*Viburnum dentatum*) and occurring in the wetland communities beyond Runway 29 where the WHMP improvements are proposed and to the northeast of the terminal apron area, would be classified as palustrine deciduous scrub-shrub. Outside the airfield security fence south of Runway 36, the wet pond southeast of the existing Runway 36 end and marsh community is dominated by species such as cattail (*Typha*) and would be classified as palustrine persistent emergent. A more detailed description of the delineated wetlands, plant species, and wetland communities can be found later in this chapter under Wetlands/Waters of the U.S. section.

The United States Fish and Wildlife Service (USFWS) and National Marine Fisheries (NMFS) were conducted via letter (**Appendix A**) at the initiation of this Environmental Assessment. In a letter dated November 13, 2007, the NMFS noted that “... no listed species under NMFS jurisdiction are known to occur in the proposed project area. Therefore, no further coordination with the NMFS Protected Resource Division is required.” The USFWS reply dated November 15, 2007 concluded that “no federally-listed species under the jurisdiction of the service [is] known to occur in the project area. Accordingly, no further action is required under Section 7 of the ESA...” The *Biological Resources Inventory* concludes that “results of supplemental onsite surveys and review of the literature and other information by environmental scientists and wildlife biologists presented in this *Biological Resources Inventory* report support this determination.” The *Biological Resources Inventory* further states “based on consideration of the determination and subsequent studies it can be concluded no federally-listed species or critical habitat are present in the proposed development areas at Portland International Jetport.”

In the same November 15, 2007 reply, the USFWS noted that the New England Cottontail rabbit (*Sylvilagus transitionalis*) “a candidate for federal listing has been observed in the vicinity of Portland Jetport and could occur on airport property.” The USFWS requested field surveys to determine the potential presence and habitat for the cottontail rabbit as well as consideration of the cottontail rabbit in project planning. Representative of the USFWS further communicated this during an on-site

interagency meeting at the Portland International Jetport on December 12, 2007. The cottontail rabbit is also classified as endangered under the Maine Endangered Species Act.

Following this request, track surveys were conducted at the Portland International Jetport. Three track surveys were conducted on December 12, 2007, December 14, 2007, and January 16, 2008 to determine the potential for the cottontail rabbit. Tracks consistent with the New England Cottontail Rabbit were found south of Runway 29 on January 16, 2008 in a run leading from a very dense sapling thicket and through the perimeter security fence. Fecal pellets collected during this survey were confirmed to be from a New England Cottontail Rabbit. On September 16, 2008, a field review was conducted of this area with the MIF&W and USFWS during which the determination was made that the entire shrub area inside the security fence and to the south of the medium intensity approach lighting system with runway alignment indicator lights (MALS) access road is cottontail rabbit habitat and also includes a small patch of shrubs on the north side of this road. This area is shown in purple cross hatch on Exhibit 1B. No cottontail rabbit indications were found in other areas of the airport.

The Maine Department of Inland Fisheries and Wildlife (MDIFW) visited the Portland International Jetport on July 19, 2007 in response to environmental scientists and wildlife biologists with TRC Companies, Inc. observing three and eight Upland sandpiper (*Bartramia Longicauda*), respectively, on June 18 and July 3, 2007 inside the airfield security fence south of Runway 29 end in the vicinity of a regularly mown area near Taxiway C. The Upland Sandpiper is classified as threatened under the *Maine Endangered Species Act*. The expansiveness and routine vegetation management of the airport are recognized as providing habitat requirements preferred by the Upland Sandpiper.

- **Coastal Zone Management**

Under the *Coastal Zone Management Act of 1972*, states with coastal lands may prepare and submit a Coastal Zone Management Plan (CZM) plan for approval with the National Oceanic and Atmospheric Administration (NOAA). These plans/programs are intended to preserve, protect, and enhance designated coastal areas. In 1978, the State of Maine initiated a coastal management program in accordance with the *Coastal Zone Management Act of 1972*. Coastal management policies are found within Title 38 of Maine Revised States, *Water and Navigation*, Chapter 19 *Coastal Management Policies*. Maine Revised Statutes Title 18, *Waters and Navigation*, Chapter 3, *Protection and Improvement of Waters*, Subchapter 1, *Environmental Protection Board*, Section 435, *Shoreland Areas*, establishes that shoreland areas in the State of Maine be subject to zoning and land use controls. Section 438-A, *Municipal Authority; State Oversight*, of Title 18, *Waters and Navigation*, Chapter 3, *Protection and Improvement of Waters*, Subchapter 1, *Environmental Protection Board*, compels municipalities to adopt zoning and land use controls for shoreland protection.

The City of South Portland enacted Chapter 27, *Zoning*⁵, Article XXX, *Shoreland Area*, pursuant to Section 438-A of the state statutes. Section 27-256 establishes the *Shoreland Area Overlay District*. The Shoreland Area Overlay District consists of the shoreland area and any and all buildings built on, over or abutting a dock, wharf or pier and any and all buildings and structures extending beyond the normal high-water line of a water body or within a wetland. Section 27-256 establishes the Shoreland Resource Protection Overlay District. The Shoreland Resource Protection Overlay District includes: A) Areas within 250 feet, horizontal distance, of the upland edge of shoreland freshwater wetlands, salt marshes and

⁵ City of South Portland Code of Ordinance accessed December 2008:
http://www.southportland.org/index.asp?Type=B_LIST&SEC={93286E1E-9FF8-40D2-AC30-8840DEB23A29}

salt meadows, and wetlands associated with great ponds and rivers, which are rated "moderate" or "high" value by the Maine Department of Inland Fisheries and Wildlife (MDIF&W) as of January 1, 1973; B) floodplains along rivers and floodplains along artificially formed great ponds along rivers, defined by the 100-year floodplain as designated on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps or Flood Hazard Boundary Maps, or the flood of record, or in the absence of these, by soil types identified as recent flood plain soils. This subdistrict shall also include 100-year floodplains adjacent to tidal waters as shown on FEMA's Flood Insurance Rate Maps or Flood Hazard Boundary Maps; C) Areas of two or more contiguous acres with sustained slopes of 20 percent or greater; D) Areas of two (2) or more contiguous shoreland freshwater wetland or coastal wetland as defined, and which are not surfically connected to a water body during normal spring high water; and E) Land areas along rivers subject to severe bank erosion, undercutting, or river bed movement and lands adjacent to tidal waters which are subject to severe erosion or mass movement, such as certain steep coastal bluffs. Section 27-257 establishes the Stream Protection Overlay Subdistrict, which includes all land within 75 feet, horizontal distance, of the normal high-water line of a stream. Development in the area north of runway 18, east of runway 29, and south of runway 36 is subject to these zoning requirements. The limits of the Shoreland Resource Protection Overlay District and the Stream Protection Overlay Subdistrict are shown on **Exhibit 3E**.

- **Floodplains**

A review of the Federal Emergency Management Agency's (FEMA's) Flood Insurance Rate Maps indicate that the airport is not within any 100-year floodplains. The airport is entirely contained within area designated as minimal risk for flooding. **Exhibit 3E** depicts the 100-year floodplains near the Portland International Jetport.

- **Section 4(f) Parks, Recreational, or Wilderness Areas**











49 USC Section 303(c), also known as Section 4(f), requires evaluation of any possible impacts to publicly owned parks, recreational areas, wildlife/waterfowl refuges and historic sites of national, state, or local significance.

There are two properties within the vicinity of the airport environs that meet this description. Both of these are designated Historic Districts under Section 106 of the National Historic Preservation Act (36 CFR 800, as amended). The first is the Stroudwater Historic District which is just northwest of Runway 18, and the second is the State Reform School/Brick Hill Historic District to the southwest of Runway 36. The location of these historic districts was shown previously on **Exhibit 3C**. Refer to Section 3.6 for more discussion of these historic districts.

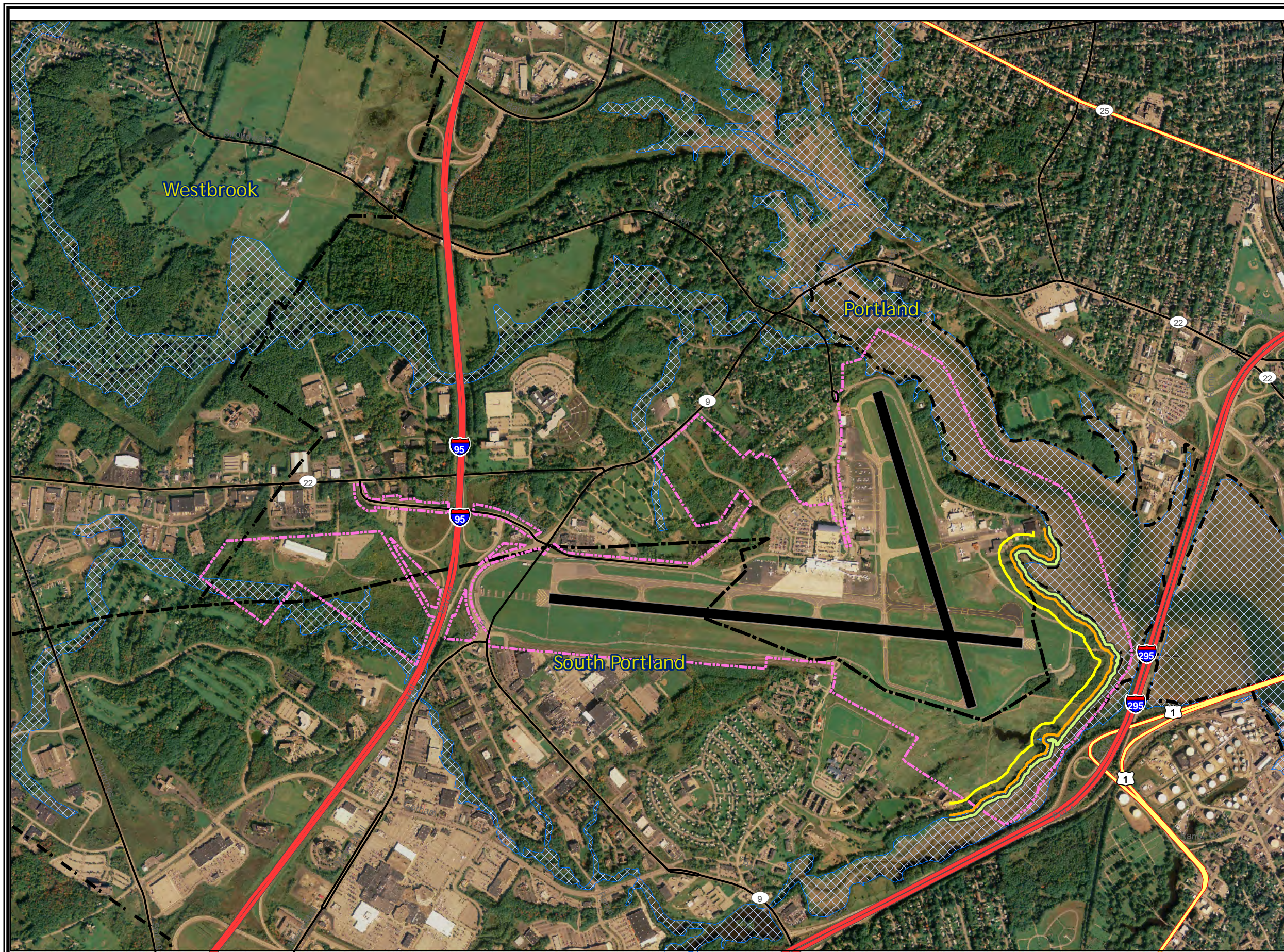
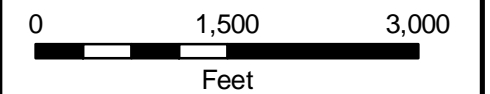
There are no public parks or recreation areas of national, state, or local significance in the vicinity of the airport. There are no wildlife or waterfowl refuges or national or state significance near the airport environs.

Portland International Jetport

Floodplains

-  Airport Property
 -  Urban Areas
 -  Airport Runway
 -  FloodPlain
- Major Roads**
-  Limited Access
 -  Highways
 -  Secondary Roads
 -  250' Shoreland Overlay District
 -  75' Resource Setback
 -  Spring High Tide

Data Sources:
Cumberland County Aerial Photography is from the NAIP 2006.
Floodplain data, digitized from georeferenced FIRM maps obtained from FEMA website on 12-17-08.



- **WATER QUALITY**

According to the Maine *2008 Integrated Water Quality Monitoring and Assessment Report*⁶, there are no impaired waters within the immediate environs of the airport. There are no known sole source aquifers near the project area.

The State of Maine requires facilities discharging storm water associated with industrial activity obtain a Maine Pollutant Discharge Elimination System (MEPDES) permit. The airport is currently operating under Maine's *Multi-Sector General Permit for Stormwater Discharge Associated with Industrial Activity* (MSGP) Permit Number MER05B425. This general permit provides authorization for point source discharges of storm water associated with industrial activity to surface water in the state (including direct discharges to surface water in the state and discharges to municipal separate storm sewer systems). As a requirement of this permit, the airport has prepared a storm water pollution prevention plan (SWPPP), addressing sources of potential pollution and describing practices to minimize and control pollutants. The current SWPPP was updated in December 2006.

Presently, aircraft deicing takes place on the northwest portion of the terminal apron near Taxiway A. Spent deicing fluid flows directly off the apron during storm events through the existing stormwater system at the airport. The Maine Department of Environmental Protection (MeDEP) is requiring that the Portland International Jetport implement procedures to remove as much aircraft deicing fluid as practicable from Portland International Jetport's storm water discharge by November 1, 2010.

- **Wetlands/Waters of the U.S.**

Exhibit 3F depicts all wetlands delineated at the Portland International Jetport for the *Natural Resource Protection Act* application prepared for wetland impacts due to project implementation. Freshwater and tidal wetland communities have been field-delineated based on the 1987 *U.S. Army Corps of Engineers Wetlands Delineation Manual* during four separate periods between 1991 and 2007. Copies of all data forms are included in an **Appendix D**.

Table 3C summarizes the wetland type and wetland functional value. Wetlands in the vicinity of the proposed project, if not in an isolated depression, drain to the Fore River. The following provides a summary of wetland features at the airport as detailed in the October 2008 *Natural Resources Protection Act* application for Portland International Jetport.

Runway 29

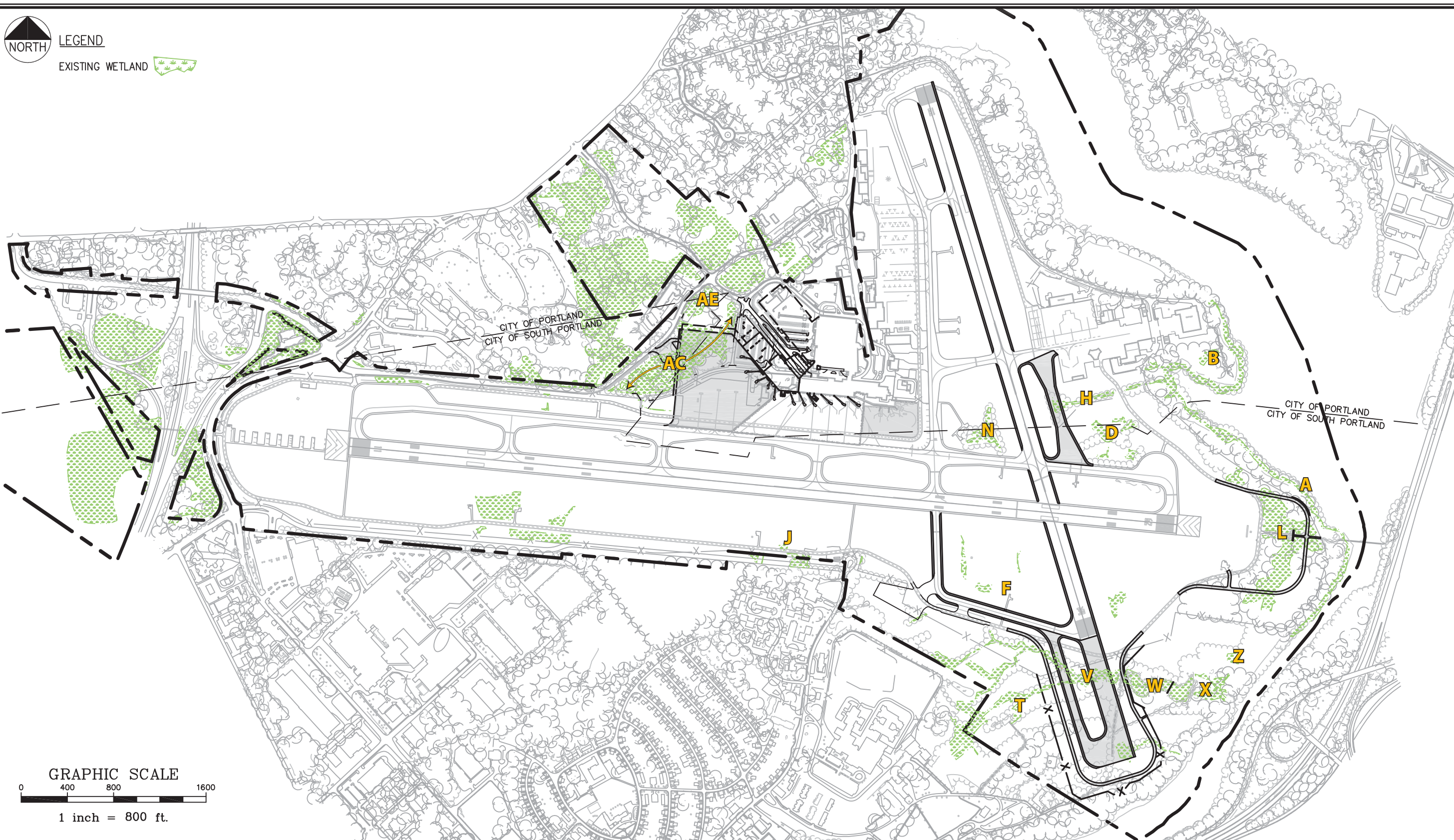
Two periods of significant and extensive earthwork activities undertaken as recently as 35 to 50 years ago are responsible for existing conditions at the east end of Runway 29. Examination of project plans as well as pre- and post-development aerial photographs from the 1950s through the 1970s document landscape level changes from placement of fill to heights of at least 30 vertical feet over horizontal distances of several hundred feet. These development activities east of the Runway 29 end were prior to promulgation of the Clean Water Act in 1972 and subsequently resulted in the opportunistic establishment of wetland plant communities in areas where fill was placed. Consequently, based on this origin, such wetland plant communities east of the Runway 29 end exhibit characteristics of "Man-

⁶ <http://www.maine.gov/dep/blwq/docmonitoring/305b/2008/report.pdf>



LEGEND

EXISTING WETLAND



GRAPHIC SCALE



1 inch = 800 ft.



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DRAWN:	LECJ	DATE:	MAY 2008
DESIGNED:	DDA	SCALE:	1" - 800'
CHECKED:	DDA	JOB NO.:	2743
FILE NAME:	2743-SP		

PORTLAND INTERNATIONAL JETPORT
ENVIRONMENTAL ASSESSMENT AND
REQUIRED ENVIRONMENTAL PERMITS

OVERALL WETLAND FIGURE



induced wetlands” described by the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual (Part IV, Section F 71.c (page 83)).

The area to the east of Runway 29 is addressed in WHMP and is designated as Wetland L on **Exhibit 3F**. This area includes a community of wetland plants dominated by shrubs and a stand of *Phragmites*. A ten-foot wide gravel road regularly used for operation and maintenance of runway MALSR lights crosses this area and leads to the airport security fence located atop a berm. The PEM1/PSS1 wetland community lies enclosed behind the two to four-foot high berm at an elevation of approximately 20 feet above mean water of the tidal Long Creek/Fore River. The only direct hydrologic connection that exists between this man-induced wetland and the traditional navigable waters of Long Creek and the Fore River is from a catch basin in Wetland L that drains through approximately 120 feet of deteriorated corrugated metal pipe (CMP) culvert buried more than 12 feet below grade. A smaller diameter (approximately 15-inch diameter) plastic pipe was “slip-lined” through the deteriorated CMP culvert during repair of storm damage from Hurricane Bob in 1991.

TABLE 3C
Summary of Wetland Characteristics
Portland International Jetport

Wetland	Wetland Type ¹	Wetland Function/Value(s) ²
A	E2EM1 (Fore River)	FFA, FSH, PE, SS, WLH, R, A
D	Mowed (airfield) PEM2	Surface water conveyance
E	Mowed (airfield) PEM2 (isolated)	
F	Mowed (airfield) PEM2 (isolated)	ESH
H	Drainage ditch PEM1	Surface water conveyance
L	PEM1 (wildlife hazard) / PSS1	WLH, ESH (PSS portion)
N	PSS1	Surface water conveyance
S	Mowed PEM2	WLH
T (B)	PEM1	STPR, WLH
V (D)	PEM1	STPR, NRRT, WLH
W (E)	POWh	STPR, NRRT, WLH, A
X (F)	PEM1	STPR, NRRT, WLH, A
Y (G)	E2EM1 (Long Creek)	FFA, FSH, PE, SS, WLH, R, A
Z (H)	PSS1 (isolated)	WLH
AC	PEM1/PSS1	STPR, WLH
AE	PFO1 (now isolated)	WLH

¹ Wetland types from USFWS *Classification of Wetlands and Deepwater Habitats* (Cowardin et al, 1979):

- E2EM – Estuarine, inter-tidal, persistent emergent
- POWh – Palustrine, open water, diked/impounded
- PEM1 – Palustrine, persistent emergent
- PEM2 – Palustrine, non-persistent (mown) emergent
- PSS1 – Palustrine, broad-leaved deciduous scrub shrub
- PFO1 – Palustrine, broad-leaved deciduous forested

² Based on the September 1999 supplement to the New England Division of the Corps Descriptive Approach to assessing wetland functions and values described in The Highway Methodology Workbook. Functions and values present in wetlands at PWM include: FFA – floodflow alteration; F/SH – fish/shellfish habitat; STPR – sediment, toxicant, pollutant retention; NRRT – nutrient removal/retention/transformation; PE – production export; SS – sediment/shoreline stabilization; WLH – wildlife habitat; R – recreation; A – Visual quality/aesthetics; ESH – threatened/endangered species habitat. Wetland functions and values are described in greater detail in Attachment 12 of the NRPA application.

Source: Natural Resources Protection Act Application, October 2008, Updated March 12, 2009

Runway 36

Although presently undeveloped, virtually all the proposed Runway 36 improvements outside the security fence occur on land of the former Carter Farm which became the site of the Maine State

Reform School (now Maine Youth Center). The extent of the creation or loss of wetland associated with agricultural activities at the Southern Maine Juvenile Facility/Maine Youth Center is challenging to document but is conspicuously evident in the form of linear swales dominated by invasive reed canary grass (*Phalaris arundinacea*) and identified as Wetland T. The swales drain into two impoundments dominated by cattail (PEM1) or open water (POWh) and then downstream into Long Creek. Roads separate Wetland segments V, W and X and provide access to the area south of Runway 29, including airfield gate 15. Wetland S located near the proposed terminus of Runway 36 is also dominated by reed canary grass and drains by a different route into Long Creek.

Access Taxiway

North of Runway 29 and south of the existing air cargo/general aviation areas along Taxiway G are the man-induced origin of wetland areas labeled as D, H, L and N on **Exhibit 3F**. These wetland communities' connections to the Fore River were created through runway construction since the late 1930s which elevated the runway surfaces above adjacent terrain surrounding area D on three sides so that any connection to the Fore River now only results from construction of the storm drain system. Similarly, areas identified as H are aligned along a ditch through upland that crosses an abandoned runway. The ditch conveys storm water captured by area N on the opposite (west) side of Runway 18-36. Opportunistic hydrophytes such as soft rush (*Juncus effusus*) dominate these altered soils and by occurring in a regularly mown part of the airfield are a non-persistent emergent community (PEM2).

Terminal Area

Improvements to the Terminal Area are proposed to the south of the intersection of Jetport Boulevard and International Parkway. An isolated forested wetland (PFO1) in this location dominated by red maple trees (*Acer rubrum*) is designated as Wetland AE. A nearby wetland that ultimately drains to the north is dominated by a mixture of alder and cattail (PSS1/PEM1) and is designated as Wetland AC (2.03 acres of Wetland AC were previously approved and compensated for impacts).

3.4 CULTURAL RESOURCES

The *TRC Portland Jetport Phase 0 Walkover Survey* report included in Appendix F details the results of a sensitivity assessment of new development at Portland International Jetport. On October 15, 2007, archeologists from Independent Archaeological Consulting, LLC (IAC) performed a walkover survey where future construction at the existing airport is planned. The archeologists found no potential Euroamerican archaeological sites where new construction is planned. No additional archaeological survey was recommended. During the walkover survey, IAC identified a wharf on the property that is most likely associated with the State Reform School. IAC recorded the wharf in the Maine Historical Archaeological Site Inventory as the Portland Jetport Wharf, ME 402-012.

A Phase II evaluation was conducted in July 2007 by IAC on two sites located south of Runway 36. These two sites were identified in a Phase I archaeological survey completed in 2002 and were identified as Site 8.22 and Site 8.24. Excavation activities failed to recover precontact period materials to verify those found during the 2002 Phase I investigation. While precontact resources were recovered, they are diffusely scattered and maintained no stratigraphic integrity. All materials were collected from the plow zone mixed with building and agricultural debris. The study concluded that Site 8.22 and Site 8.24 do not meet NRHP eligibility criteria. No further archeological investigations were recommended. A copy of the *Phase II Prehistoric Archaeological Investigation of the Portland International Jet Improvements*

Project, South Portland, Cumberland County, Maine which summarizes these study results can be found in Appendix F.

The Maine Historic Preservation Commission (MHPC) reviewed both reports. In a letter dated September 30, 2008 (Appendix A), Kirk Mohney, Deputy State Historic Preservation Officer, stated that “We [the MHPC] concur with the conclusions of the reports that 1) no historic archaeological sites are present in the project area, and 2) prehistoric archaeological sites 8.24 and 8.22 are not eligible for listing in the national register (not significant).”

The FAA Airports Division initiated consultation with the Penobscot Nation as required by Section 106 of the National Historic Preservation Act (NHPA) of 1966. By letter dated December 17, 2007, the Penobscot Nation indicated that the proposed projects would “have no impact on a structure or site of historic architectural or archeological significance to the Penobscot Nation.” A copy of this correspondence can be found in Appendix F.

3.5 NOISE

Existing Condition

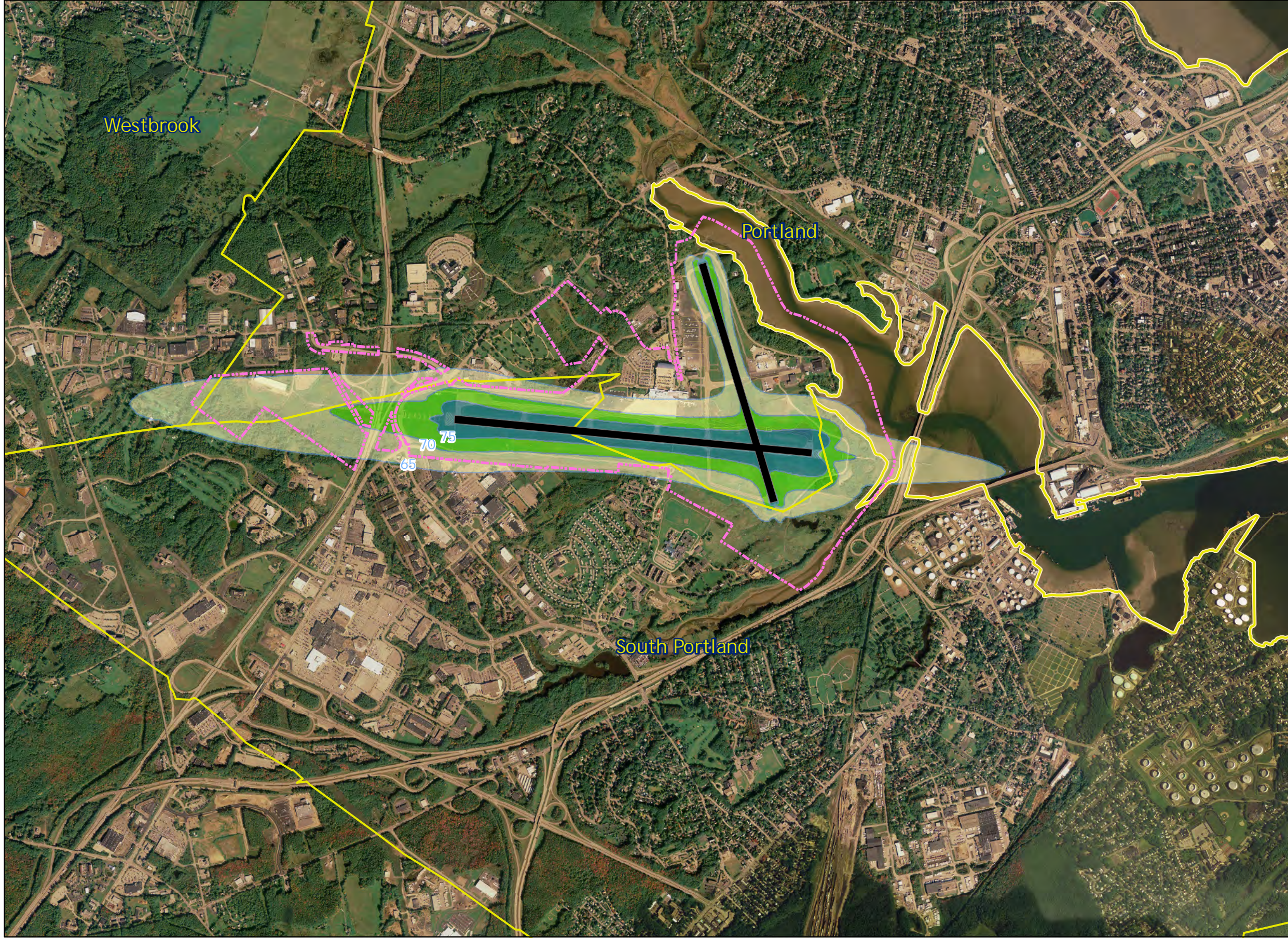
Exhibit 3G depicts the existing noise condition at the airport. Detailed descriptions of the modeling inputs, as well as the established thresholds of significance, are contained within the noise discussion in Appendix H. As indicated on the exhibit, the 65 Day Night Average Sound Level (DNL) noise contour remains almost entirely on airport property. Portions of the 65 DNL contour extend to the east over the Fore River. To the west, the 65 DNL contour extends across a golf course and industrial/commercial land uses. These land uses are considered compatible with the 65 DNL contour. There are no noise-sensitive land uses contained within the 65 DNL or higher noise contours.

3.6 SOCIOECONOMIC CHARACTERISTICS

The purpose of this section is to provide background material which will be utilized in the social and socioeconomic discussions within Chapter Four of this EA.

- **Population**

Table 3D presents historical population changes for Maine, Cumberland County, and the Portland Metropolitan Statistical Area (MSA). Population in the Portland MSA had a 1.3 percent average annual growth rate from 1970 to 2005, while Cumberland County and Maine grew by 1.0 percent and 0.8 percent respectively over the same time period.



Portland
International
Jetport

2008
Noise Contours

- 65 decibel
- 70 decibel
- 75 decibel
- Airport Property
- Airport Runway

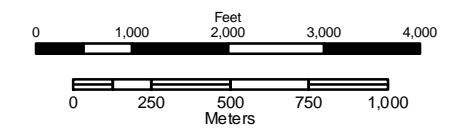


TABLE 3D
Historical Population
Cumberland County, Portland MSA and State of Maine

Year	Cumberland County	Percent Change	Portland MSA	Percent Change	State of Maine	Percent Change
1970	193,350	N/A	329,250	N/A	998,040	N/A
1980	216,580	12.0%	386,090	17.3%	1,127,820	13.0%
1990	243,865	12.6%	442,790	14.7%	1,227,928	8.9%
2000	266,138	9.1%	489,310	10.5%	1,274,923	3.8%
2005	274,950	3.2%	514,227	4.8%	1,321,505	3.5%
Average Annual Growth Rate						
1970-2005	Cumberland County – 1.0%		Portland MSA – 1.3%		Maine – 0.8%	

Source: U.S. Bureau of the Census

According to the EPA Enviromapper website, the airport is not located in an area with a high percentage of people living below poverty or having a large minority population. **Exhibit 3H** depicts these areas.

3.7 PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE ACTIONS

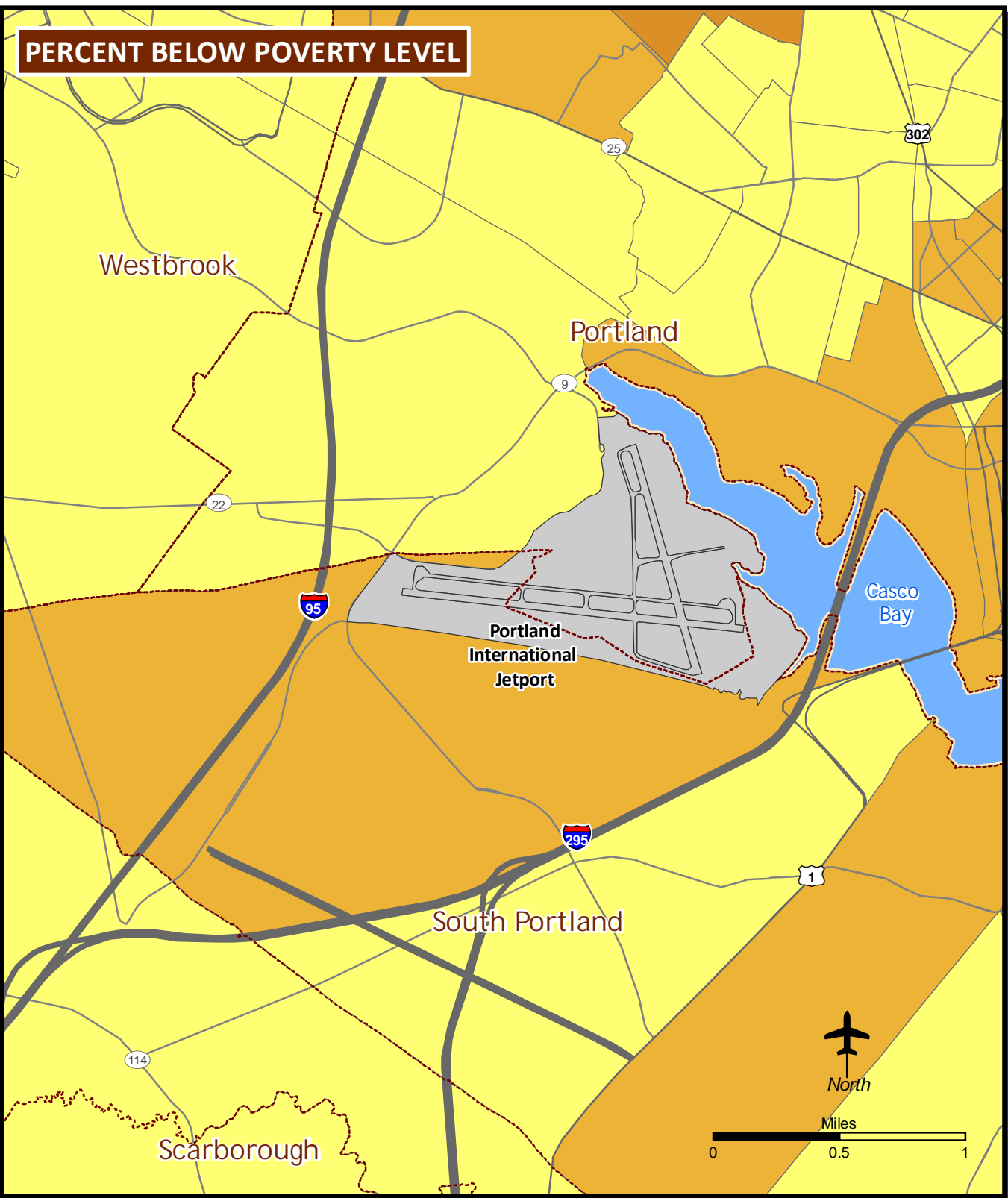
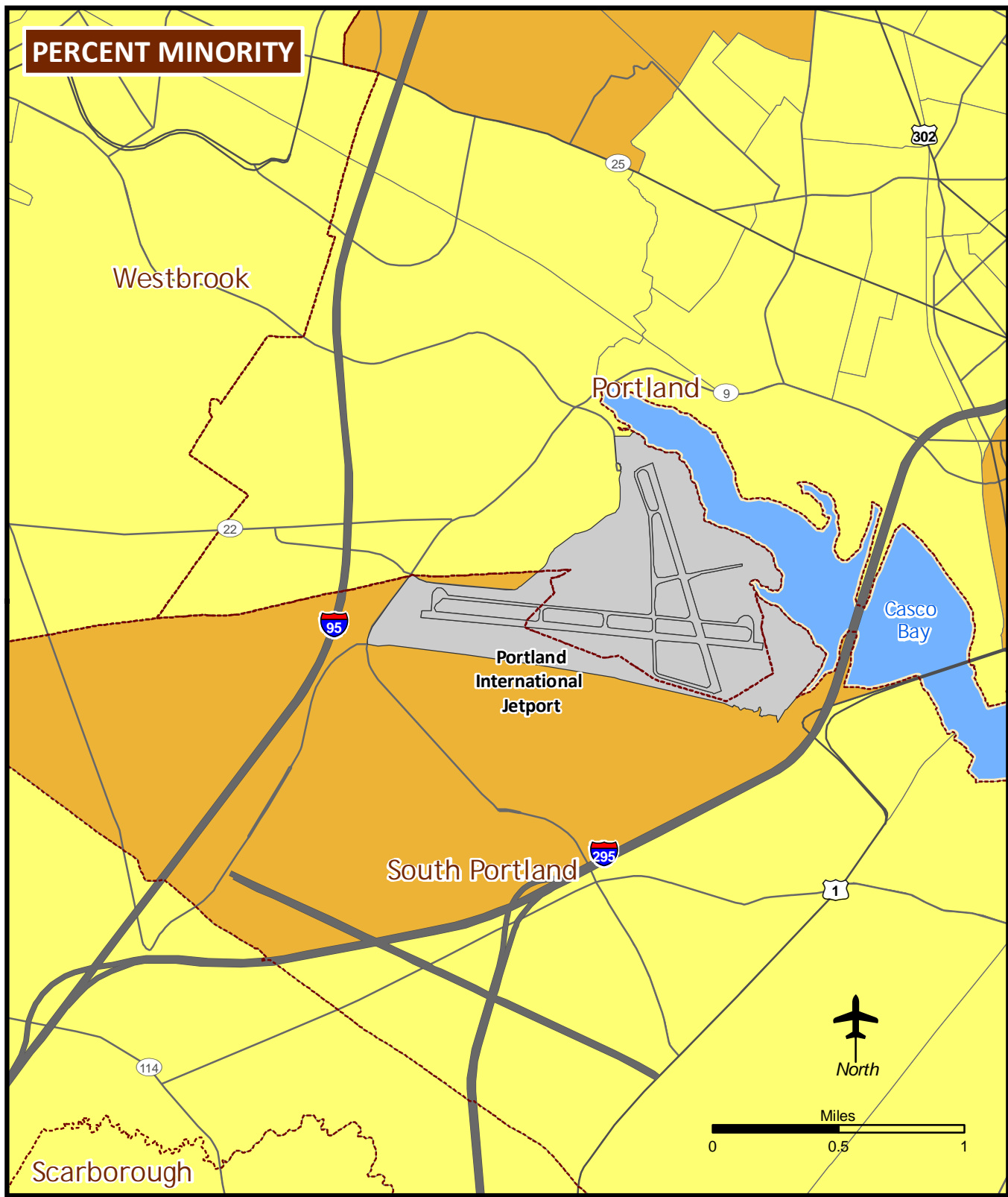
The purpose of this section is to outline those projects which will need to be considered during the cumulative impact analysis in Chapter Four of this EA. *Council on Environmental Quality* (CEQ), Section 1508.7, defines cumulative impact as the impact on the environment which results from the incremental 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 actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Past projects are defined as those which have been undertaken over the past few years. Foreseeable future actions are defined as those which are likely to become a reality and have begun the approval design or construction processes. Projects which are conceptual in nature are not considered as they may or may not be undertaken.

- **Airport Development**

Recent past on-site airport development includes:

- A 400-foot Extension of Runway 11-29
- Runway 11-29 Safety Area Construction
- Rehabilitation and Strengthening of Runway 11-29 including Snow Shoulders
- Rehabilitation and Widening of Taxiways A, B, C and D including Snow Shoulders
- Relocation of the Perimeter Access Road
- Rehabilitation of Westbrook Street including New Drainage
- A remote parking lot to the west of the Turnpike



Percent Minority by Blockgroup

0-10	10-20	20-30	30-40	40-100
------	-------	-------	-------	--------

Source: Blockgroup data is from the US Census Bureau, SF3 tables. Blockgroup shapefiles are from ESRI.

Percent of Families Below Poverty Level by Blockgroup

0-10	10-20	20-30	30-40	40-100
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Current development projects underway at Portland International Jetport include:

- Construction of a vehicle parking garage east of the terminal building
- Construction of apron and buildings in the south general aviation area

- **Off-site Development**

Off-site development which has occurred over the past decade in the vicinity of the Portland International Jetport includes the construction of the new Boy Scout Headquarters, the Congress Street interchange, Johnson Road relocation, the Jetport Plaza Access Road built by the City of South Portland, and the ongoing renovations and improvements to the Brick Hill Development and the Southern Maine Juvenile Facility.

Anticipated future off-site development in the vicinity of the Portland International Jetport includes the DOT's construction of a new lane on I-295 between Exits 4 and 3 southbound (construction underway Summer 2009), DEP/EPA water quality and stormwater improvements within the Long Creek Watershed, and the Maine Turnpike Authority's proposed widening of the turnpike. This is an area of active commercial, industrial, and residential development; therefore, there will undoubtedly be other, as yet unidentified, projects undertaken in this area in the future.

DeLuca-Hoffman Associates, Inc. contacted the Cities of Portland, South Portland, and Westbrook and the Maine Department of Environmental Protection (MeDEP) to inquire of other proposed developments in the vicinity of the Portland International Jetport. Projects identified were a potential hotel project near National Semiconductor in South Portland and the possibility of a loop road extending off Aviation Boulevard into the Brick Hill Development, development of Exit 4 as part of the Veterans Memorial Bridge Replacement, and a potential pedestrian bike bridge over Long Creek south of Exit 4.

Chapter Four

ENVIRONMENTAL CONSEQUENCES

Chapter Four

ENVIRONMENTAL CONSEQUENCES

*Environmental Assessment
Portland International Jetport*

FAA Orders 1050.1E, *Environmental Impacts: Policies and Procedures*, and 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*, defines the form and content of Environmental Assessments (EAs) and requires that an impact analysis be conducted for a number of specific categories to determine whether a potential for significant environmental impact from the proposed improvements exists. Impacts are determined by comparing the anticipated local environmental condition after development (implementation of the Proposed Action Alternative) to the conditions on and around the airport should no project be developed (implementation of the No Action Alternative). Data regarding the existing condition is provided within Chapter Three of this EA. Where necessary, mitigation measures are discussed which would reduce or eliminate anticipated environmental impacts for each of the alternatives.

As agency coordination did not reveal any unresolved conflicts, per Paragraph 405(d) of FAA Order 1050.1E, the range of alternatives to be considered in this EA is limited to the No Action Alternative and the Proposed Action Alternative. In accordance with the *Council on Environmental Quality (CEQ)* guidance, as contained within 40 CFR 1508, the environmental consequences of each impact category include consideration of the direct, indirect, and cumulative effects of the alternatives under consideration.

Where necessary, mitigation measures are discussed which would reduce or eliminate anticipated environmental impacts for each of the alternatives. Special purpose laws which protect various environmental resources will also be discussed. The No Action Alternative establishes the baseline impact level for the environmental consequences analysis.

4.1 RESOURCES NOT IMPACTED BY PROJECT ALTERNATIVES

As outlined within paragraph 706(f) of FAA Order 5050.4B, concise analysis was undertaken *only* for the potential impacts the alternatives under consideration may cause. A number of resources will not be impacted by implementation of the Proposed Action Alternative or No Action Alternative and are, therefore, not discussed in detail within this chapter of the EA. As identified in Chapter Three, resources which are not present within the study area, or are not impacted by either the Proposed Action Alternative or No Action Alternative include the following:

- RESOURCES NOT IMPACTED
 - Coastal Barriers – While the proposed improvements are located in an area subject to Coastal Zone Management, it is not in an area designated under Coastal Barrier rules and regulations.
 - Department of Transportation Act: Section 4(f) – The project will not require the use of any publicly owned park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land from a historic site of national, state, or local significance.
 - Environmental Justice - The proposed improvements do not result in any environmental impacts that would disproportionately impact any minority or low income populations.
 - Farmland - The proposed projects are not located in area that contains prime or unique farmland or farmland designated as important by a state or local agency; therefore, the *Farmland Protection Policy Act* does not apply.
 - Federally-Listed Endangered and Threatened Species - As detailed in correspondence found in Appendix A, the United States Fish and Wildlife Service (USFWS) concluded that “no federally-listed species under the jurisdiction of the service [is] known to occur in the project area. The *Biological Resources Inventory* in Appendix E further states “based on consideration of the determination and subsequent studies it can be concluded no federally-listed species or critical habitat are present in the proposed development areas at Portland International Jetport.”
 - Floodplains - A review of Flood Insurance Rate Maps for the area indicates that the proposed projects are located outside a 100-year floodplain. 100-year floodplains near the airport were shown previously on Exhibit 3E.
 - Wild and Scenic Rivers - The closest designated Wild and Scenic River is the Lamprey River (New Hampshire) which is approximately 50 miles southwest of the airport.

4.2 RESOURCE IMPACT EVALUATION

The following sections contain a detailed impact analysis for those resources potentially impacted by the Proposed Action Alternative or No Action Alternative. This analysis was undertaken in accordance with Appendix A of FAA Order 1050.1E and Table 7-1 of FAA Order 5050.4B.

4.2.1 Air Quality

Proposed Action

As discussed in Chapter Three, the airport is located in Cumberland County which is designated as in maintenance for 8-hour Ozone and in attainment for all other federal criteria pollutants as defined by the U.S. Environmental Protection Agency (EPA). Federal criteria pollutants are regulated under the

National Ambient Air Quality Standards (NAAQS) and include carbon monoxide (CO), ozone (O₃), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), particulate matter (PM₁₀ and PM_{2.5}), and lead (Pb).

Two Acts of Congress have been federally adopted to control air quality emissions: NEPA and the *Clean Air Act* (CAA). Each Act has separate requirements for evaluating a proposed action's impact on air quality, but the same analysis can fulfill the requirements of both acts.

- **National Environmental Policy Act**

An emissions inventory is required for Portland International Jetport as it is expected to exceed 1.3 million annual passengers. The following summarizes operational and construction emissions.

Operations

Air pollutant emissions at Portland International Jetport were calculated using the FAA's Emissions and Dispersion Modeling System (EDMS), Version 5.1. The EDMS model is listed among the EPA's preferred guideline models and has been identified by the FAA as the only acceptable model for estimating aircraft emissions at airports. It calculates emissions of pollutants associated with an airport, including aircraft, ground support equipment (i.e., fuel trucks), and automobiles. The emissions modeling element of EDMS summarizes pollutant levels in tons per year.

The emissions model does not calculate lead emissions; therefore, an assessment of these impacts cannot be made. Additionally, ozone emissions are not calculated by EDMS; however, volatile organic compounds (VOC) are a precursor to ozone. VOCs combine with sunlight and oxides of nitrogen (NO_x) to form ozone. As a result, VOC emissions are used to estimate ozone emissions. The aircraft fleet mix utilized for the preparation of noise analysis (Appendix H) was also utilized for the emissions analysis. Output data provided by the EDMS program are in tons per year.

Automobile trips associated with Portland International Jetport were also included in the analysis. For purposes of this study, the annual vehicle trips associated with the airport were calculated according to the Institute of Transportation Engineer's *Trip Generation Manual*, 7th Edition.

Table 4A provides the projected air pollutant emissions associated with the operations at Portland International Jetport under the Proposed Action Alternative and No Action Alternative. This includes emissions from aircraft, automobiles, ground support equipment, and fueling operations. The Proposed Action Alternative does not include any new point source air emissions. The operational assumptions are the same for the Proposed Action and No Action as the Proposed Action Alternative projects do not induce new aircraft operations at the Jetport. Since Runway 11-29 can accommodate the entire mix of aircraft operating at the airport due to the longer departure and landing lengths available on Runway 11-29 rather than Runway 18-36, the Proposed Action Alternative does not introduce new aircraft to the operating mix at the airport. Once extended, some operations on Runway 11-29 would shift to Runway 18-36 during certain wind conditions.

TABLE 4A
Emissions Inventory – Operational Emissions

Pollutant ¹	2012		2017	
	No Action (tons/year)	Proposed Action Alternative (tons/year)	No Action (tons/year)	Proposed Action Alternative (tons/year)
CO	552.699	552.699	508.896	508.896
VOC	81.785	81.785	84.019	84.019
NO _x	104.901	104.901	114.178	114.178
SO _x	14.881	14.881	17.042	17.042
PM ₁₀	3.761	3.761	4.096	4.096
PM _{2.5}	3.681	3.681	4.015	4.015

¹ EDMS does not calculate emissions for Lead

Note: No construction programmed in 2017

Source: Coffman Associates analysis.

Construction

Construction emissions were also evaluated for the Proposed Action Alternative. A construction emissions inventory was prepared using the Environmental Protection Agency’s NONROAD and MOBILE6.2 emissions models. The NONROAD model estimates emissions related to non-highway approved vehicles such as heavy construction equipment. The MOBILE6 model evaluates highway vehicle emissions such as those from dump trucks or light-duty work trucks.

The NONROAD and MOBILE6.2 models do not calculate lead emissions; therefore, an assessment of these impacts cannot be made. Additionally, ozone emissions are not calculated by the emissions models; however, volatile organic compounds (VOCs) are a precursor to ozone. VOCs combine with sunlight and oxides of nitrogen (NO_x) to form ozone. Therefore, VOC emissions are used to estimate ozone emissions.

Construction emissions for the Proposed Action Alternative are included in **Table 4B**. Output data from the NONROAD and MOBILE6.2 emissions models are expressed in tons per year. A summary of the construction emissions assumptions used for this analysis is included in **Appendix J**. Indirect impacts experienced during project construction are addressed in Section 4.2.5, Construction Impacts.

TABLE 4B
Construction Emissions Summary

Project	VOC	PM ₁₀	PM _{2.5}	CO	NO _x	SO _x
Water Quality Pond	0.545	0.599	0.581	3.161	7.588	1.315
Runway 18-36	6.269	6.471	6.277	34.025	74.172	12.786
Cargo Taxiway	2.402	2.554	2.477	13.582	30.688	5.222
Runway 11-29 Safety Area	1.874	2.069	2.007	10.843	26.398	4.637
Terminal	3.877	3.671	3.560	19.549	37.744	6.513
18-36 Snow Shoulder	1.144	1.236	1.199	6.388	14.178	2.527
Apron Phase 1	2.488	2.521	2.445	13.592	28.078	4.750
Apron Phase 2	2.414	2.566	2.489	13.513	30.537	5.244
Apron Phase 3	0.484	0.498	0.483	2.661	5.723	0.969
Taxiway C	0.763	0.842	0.816	4.454	10.365	1.779

Source: Coffman Associates analysis

Net Project Emissions

The operational emissions between the No Action Alternative and the Proposed Action Alternative are the same, as the Proposed Action Alternative projects do not induce new operations at the Jetport. Therefore, the only difference in emissions relates to individual construction projects between 2009 and 2012.

- **Clean Air Act**

The following sections address CAA provisions for general conformity, transportation conformity, and indirect source review.

General Conformity

To ensure that a federal action complies with the NAAQS, the CAA establishes the General Conformity Rule for all general federal actions, which includes all airport improvement projects. The General Conformity Rule (40 CFR Part 93) applies to federal actions that are:

- Federally funded or federally approved;
- Not a highway or transit project;
- Not identified as an exempt project under the CAA and is not listed on the federal agency's Presumed to Conform list; and
- Located within a non-attainment or maintenance area.

If a federal action meets all of the above criteria, the General Conformity Rule is applicable. The General Conformity Rule applies to the Proposed Action Alternative as Portland International Jetport meets all of the above criteria. The General Conformity evaluation is necessary to determine if each criteria pollutant or precursor generated by the Federal action would equal or exceed any of the rates outlined in **Table 4C**.

TABLE 4C
General Conformity Thresholds for Maintenance Areas

Pollutant or Precursor	Tons/Year
Ozone (NO _x , SO ₂ , or NO ₂) All maintenance areas	100
Ozone (VOC)	
Maintenance areas inside an ozone transport region	50
Maintenance areas outside an ozone transport region	100
Carbon monoxide – All maintenance areas	100
PM ₁₀ – All maintenance areas	100
PM _{2.5} – Direct emissions	100
SO ₂	100
NO _x	100
VOC	100
Pb	25

Source: Requirements for Preparation, Adoption, and Submittal of Implementation Plans
http://www.epa.gov/region01/topics/air/sips/me/2008_FR_1993_and_2006_Gen_Conformity.pdf

The net project emissions, represented by the construction totals in **Table 4B**, do not exceed the thresholds established for the General Conformity determination outlined in **Table 4C**; therefore, the Proposed Action is in conformance with the Maine State Implementation Plan.

Transportation Conformity

The CAA also establishes Transportation Conformity provisions for federal actions. Transportation Conformity is applicable to highway or transit projects that are not included in the region’s Transportation Plan or Transportation Improvement Plan, such as the proposed improvements at Portland International Jetport. However, the Proposed Action Alternative does not meet the CAA’s definition of a transportation project¹ which includes highway and transit projects, as the Proposed Action Alternative does not affect any roadways.

Indirect Source Review

Under the CAA General Conformity provisions, indirect source review is required in some states when a federal action has the potential to cause an increase in emissions from indirect sources. As indicated in the *Air Quality Procedures for Civilian Airports and Air Force Bases* publication, the State of Maine does not require indirect source review for the Proposed Action Alternative.

No Action

Under federal air quality modeling and analysis guidelines, the No Action Alternative represents the baseline condition to which the Proposed Action Alternative is compared. The No Action Alternative air pollutant emissions estimates represent total impacts of the airport and include the emissions from aircraft, ground support equipment, vehicle traffic, and stationary sources (fuel tanks and solvents). The

¹ 40 CFR 93.101, see definition of “transportation project.”

No Action Alternative is not expected to have construction-related air quality impacts as no new development at the airport would take place under this scenario.

Analysis and Mitigation

Implementation of the Proposed Action Alternative will not result in impacts which exceed one or more of the NAAQS for any of the time periods analyzed; therefore, impacts do not exceed the established threshold of significance.

The net project emissions, represented by the construction totals in **Table 4C**, do not exceed the thresholds established for the General Conformity determination outlined in **Table 4B**; therefore, the Proposed Action is in conformance with the Maine State Implementation Plan.

Construction-related emissions would be short term and localized to the construction area. Best management practices (BMPs) would be implemented to reduce particulate emissions and were not considered as part of this analysis. Indirect impacts experienced during project construction are addressed in Section 4.2.5, Construction Impacts.

The No Action Alternative will result in less-than-significant air quality impacts as the airport will continue to operate in a manner similar to what it does today.

4.2.2 Biotic Resources

Proposed Action

As detailed in correspondence which can be found in **Appendix A**, the National Marine Fisheries Service (NMFS) stated: "In summary, no listed species under NMFS jurisdiction are known to occur in the proposed project area. Therefore, no further coordination with the NMFS Protected Resources Division is required." During the July 8, 2008 interagency meeting convened for PWM by the Maine Department of Transportation, NMFS inquired about fisheries of the ± 1.8 -acre pond to the southeast of Runway 36 and recommended further information be obtained.

Grading plans and profiles of the pond prepared for the Portland International Jetport major amendment to the *Site Location of Development Permit* application indicate the existing pond reaches depths between four to eight feet. Outflow from the pond to the tidal Long Creek approximately 20 feet below is over a distance of approximately 450 feet and controlled by an outlet control structure and culvert through the dam. No persistent channel connects the pond to Long Creek, but instead drainage from the pond passes through an emergent wetland. The pond exhibits eutrophic conditions that are attributed to its origin, use, and hydrologic setting.

Live trapping of fish in the pond was conducted between August 11 and 14, 2008 for a total of approximately 144 trap hours, with two minnow-size traps at two locations in the pond. One location was in deeper water near the outlet structure and the second trap was located in shallower water off a small point at the southeast end of the pond. Fish and minnows captured were limited to small (<3-inch), warm-water species and included pumpkinseed sunfish (*Lepomis gibbosus*), blacknose dace (*Rhinichthys atratulus*) and three-spine stickleback (*Gasterosteus aculeatus*). Due to the absence of a persistent channel up or downstream of the pond, and with the exception of being flushed through the outlet con-

trol structure during overflow conditions, no hydrologic connection exists for movement of these common warm water species into or out of the constructed, eutrophic pond.

The upper approximately two-thirds of the pond is to be deepened behind sheet piling to approximately seven to eight feet below current permanent pool elevation. The lower third of the pond will remain unaltered, but the permanent pool depth of the pond will be raised approximately 0.6 feet to achieve a more consistent and extensive depth of seven-and-a-half to nine feet throughout the pond for stormwater quality management.

Segregation of the pond by the sheet pile during dredging will be a means to temporarily isolate the fish to the unaltered end of the pond until this work is completed to protect the water quality of Long Creek, the Fore River, and Casco Bay. Although these warm-water species are not wildlife hazards directly, these species serve as food/prey-based sources and are attractants for wading birds and kingfishers. Covering the pond with a low aerially suspended wide-spaced netting to deter feeding by wading birds is a form of food/prey-base habitat management recommended for the pond which will be implemented as part of the project.

As detailed in the *Biological Resources Inventory (Appendix E)*, field surveys conducted by environmental scientists and wildlife biologists with TRC Companies, Inc. observed the Upland sandpiper (*Bartramia Longicauda*) and New England Cottontail Rabbit (*Sylvilagus Transitionalis*). The Upland Sandpiper is classified as threatened under the *Maine Endangered Species Act*. The New England Cottontail Rabbit is classified as a federal candidate species by the USFWS and as endangered under the *Maine Endangered Species Act*.

The presence of the Upland sandpiper is likely the result of the Portland International Jetport's ongoing vegetation maintenance program that helps to sustain the habitat for this grassland shorebird. "Upland sandpipers require large (greater than 150 acres) fields with open short grass areas and prefer a mix of short and tall (less than 24-inch) grass interspersed with patches of bare ground. Fence posts are used for singing perches (MEIF&W, 2003).

Continued consultation between the Portland International Jetport and the Maine Department of Inland Fisheries and Wildlife is recommended to identify and cooperatively agree on potential conservation measures for the Upland sandpiper such as, but not limited to, live trapping, transplantation, habitat management, and other protective guidelines recognized by the *Maine Endangered Species Act* (12 MRSA §12804-12806.) It should be noted that conservation measures consider that the maintenance of habitat requirements conflicts with wildlife hazard management recommendations of FAA AC 150/5 5200-33B, *Hazardous Wildlife Attractants on or Near Airports*. Shorebirds share the same score as blackbirds/starlings in terms of the AC's ranking of "relative hazard to aircraft based on three criteria." In the 2002 MOA to Address Aircraft-Wildlife Strikes, 40 strikes with shorebirds (primarily Killdeers and Sandpipers) were reported between 1990 and 1999.

Removal of the wetland area east of Runway 29 as specified in the Wildlife Hazard Management Plan (WHMP) will also cause the removal of approximately 13 acres of New England cottontail rabbit habitat. The Biological Resources Inventory recommends consultation between the Portland International Jetport and the Maine Department of Inland Fisheries and Wildlife to agree on potential conservation measures for the New England cottontail rabbit, a candidate species for federal listing under the *Endangered Species Act* and listed as endangered by the State of Maine. On November 15, 2007, pursuant to the *Endangered Species Act* and the Fish and Wildlife Coordination Act, the USFWS provided the Portland International Jetport with comments relating to the potential occurrence of the New England cottontail rabbit. In addition, based on anticipated

necessary wetland impacts, the USFWS also suggested an interagency (IA) site visit for these impact locations. An IA site visit was held on December 12, 2007, and later that winter near the end of Runway 29, PWM confirmed the presence of the New England cottontail rabbit. Pursuant to the Maine Endangered Species Act (MESA), the Portland International Airport coordinated with the USFWS and MEIF&W in the development and approval of an Incidental Take Plan (ITP) to relocate New England cottontails from the Jetport to an off-site recovery location selected to prevent, minimize and mitigate to this species within the project area.

All of the project area constitutes habitat for birds protected under the *Migratory Bird Treaty Act* (MBTA); however, vegetation within the project area is not unique from a population standpoint for those species that occur in and adjacent to the project area. Bird species that breed regularly in and adjacent to the project area are likely to be common to the region because habitats in the area are widespread and largely disturbed. Therefore, clearing of mowed and maintained vegetation for the Proposed Action Alternative is not likely to result in impacts to birds protected under the MBTA. This clearing will be undertaken outside of the nesting season (March through September) to minimize impacts to migratory birds.

No Action

No construction will occur with implementation of the No Action Alternative; therefore, no impacts to Biotic Resources are anticipated.

Analysis and Mitigation

Removal of the wetland area east of the Runway 29 as specified in the Wildlife Hazard Management Plan (WHMP) will cause the removal of approximately 13 acres of cottontail rabbit habitat. To address this loss of habitat, an ITP was prepared. The stipulations of the ITP were mutually agreed upon by MEIF&W and the City of Portland. The ITP identifies the mitigation for impacts to the cottontail rabbit resulting from the implementation of the WHMP recommendations. The ITP specifies the method for capture, relocation, and monitoring of the cottontail rabbits currently located on the airport, and mitigation for habitat loss. As stated in the ITP, mitigation measures include the contribution of \$1,000,000 by Portland International Jetport to secure and permanently protect New England cottontail habitat and a contribution of \$20,000 toward the costs relating to capture and post capture monitoring of New England cottontails to be relocated from the airport. A copy of the ITP prepared by the MEIF&W is included in **Appendix E**.

Continued consultation between the Portland International Jetport and the Maine Department of Inland Fisheries and Wildlife is needed to identify and cooperatively agree on potential conservation measures for the Upland sandpiper such as, but not limited to, live trapping, transplantation, habitat management, and other protective guidelines recognized by the *Maine Endangered Species Act* (12 MRSA §12804-12806.) To minimize impacts to migratory birds, tree clearing will be undertaken outside of the nesting season (March through September) to minimize impacts to migratory birds.

4.2.3 Coastal Zone Management

Proposed Action

The portions of airport property extending along the Fore River and Long Creek are subject to the requirements of the State Of Maine Coastal Management Program developed in accordance with the *Coastal Zone Management Act of 1972*. Chapter 27, *Zoning*, Article XXX, *Shoreland Area*, of the City of South Portland Code of Ordinance, specifies the requirements of the Shoreline Resource Protection Overlay Subdistrict. Projects in the Proposed Action Alternative which fall within the Shoreline Resource Protection Overlay Subdistrict include the removal of wetlands, trees, and shrubs as specified in the WHMP and the construction of portions of the relocated perimeter service road around the Runway 29 end and extended Runway 36 end. Section 27-258, *Land Uses in the Shoreland Area*, subpart B (18), specifies the clearing of vegetation is “permitted in the Shoreland Resource Protection Overlay Subdistrict.” Therefore, the removal of the wetlands, trees, and shrubs as specified in the WHMP beyond Runway 29 can be completed by the City of Portland in compliance with the Shoreline Resource Protection Overlay Subdistrict and does not require approval by the City of South Portland. Section 27-259 D (1) states that roads “shall be set back at least seventy-five (75) feet, horizontal distance, from the normal high-water line of water bodies, tributary streams, or the upland edge of a wetland.” The relocation perimeter service road beyond the Runway 29 end and extended Runway 36 end are located outside this horizontal distance. Therefore, while the relocated service roads are located within the Shoreline Resource Protection Overlay Subdistrict, these relocated perimeter service roads comply with the zoning requirements of this section. The limits of the Shoreland Resource Protection Overlay District and the Stream Protection Overlay Subdistrict were previously shown on Exhibit 3E.

No Action

No construction will occur with implementation of the No Action Alternative; therefore, City of South Portland Shoreland Zoning requirements do not apply.

Analysis and Mitigation

The removal of wetlands, trees, and shrubs as specified in the WHMP and the construction of portions of the relocated perimeter service road around the Runway 29 end and extended Runway 36 end fall within the Shoreline Resource Protection Overlay Subdistrict. However, Section 27-258 B (18) allows for the clearing of vegetation within the Shoreline Resource Protection Overlay Subdistrict. Section 27-259 D (1) allows for roads that remain 75 feet horizontal distance from the normal high water mark. The proposed relocated perimeter service roads remain outside this limit. Therefore, Shoreland Area zoning requirements are met for these portions of the Proposed Action Alternative. Shoreland Area zoning requirements do not apply to the remaining elements of the Proposed Action Alternative.

4.2.4 Compatible Land Use

Proposed Action

As described within Section 4.2.9, no noise-sensitive development is contained within the 2011 or 2016 Proposed Action Alternative as the 65 DNL noise contour will be contained entirely on airport property. Furthermore, neither Cumberland County nor the City of Portland have established noise standards that differ from FAA's significant noise threshold; therefore, land within the 65 DNL noise contour is considered compatible with airport operations. The proposed projects are not in conflict with the planning guidelines outlined within the City Portland or City of South Portland General Plans or other planning documents. A land use assurance letter is included in **Appendix G**. Implementation of the Proposed Action Alternative would impact approximately 13.07 acres of wetlands and remove approximately 13 acres of habitat suitable for the cottontail rabbit.

No Action

No development would occur with implementation of the No Action Alternative. Therefore, there would be no changes to airport operations or noise, or impacts to wetlands or critical habitat alterations. The No Action Alternative will not result in induced socioeconomic impacts, community disruption, or business relocations.

Analysis and Mitigation

No noise-sensitive land uses are impacted with implementation of either the Proposed Action Alternative or No Action Alternative. The Proposed Action Alternative will not exceed the compatible land use thresholds outlined within **Appendix H** as it will not divide or disrupt an established community; result in induced socioeconomic impacts; or result in floodplain impacts. Further discussion related to the 13.07 acres of wetland impacts can be found in Section 4.2.14, Wetlands. The 13 acres of impacts to cottontail rabbit habitat was previously discussed in Section 4.2.2, Biotic Resources.

4.2.5 Construction Impacts

Proposed Action

Implementation of the Proposed Action Alternative will occur in a phased process over the next five years. Table 1A previously summarized projected project scheduling. Specific construction impacts will occur in the following three areas.

Noise. Implementation of the WHMP recommendations, Runway 29 runway safety area (RSA) improvements, and the extension of Runway 18-36 may result in temporary changes in runway use during construction activities. During construction, there will be periods when either Runway 11-29 or Runway 18-36 is closed or the useable runway length is shortened. This is due to specific FAA guidelines regarding runway use during construction activities. This change in runway use will shift noise from one runway to another; however, this shift will be temporary in nature. Since the 65 DNL noise contour does not contain noise-sensitive land uses, it is not anticipated that the short-term changes in the runway use

will result in a significant noise impact on noise-sensitive development. Since construction is expected during daytime, shifts in nighttime runway use are also not anticipated.

Implementation of all the projects in the Proposed Action Alternative will generate noise resulting from the use of construction equipment. Construction noise will be localized to the areas under development. It is anticipated that construction will occur during the daytime.

Removing rock through blasting will be a component of construction activities. Section 20, *Blasting*, of the *Site Location of Development Permit*² specifies the methods for blasting during construction activities. The measures in paragraphs 20.1 and 20.2 will become part of the contract documents for construction to address the proper methods for blasting and removal of rock during construction. Section 20.1 specifies the general contractor will be required to prepare a blasting plan and preblast survey prior to any rock removal. A written report of the preblast survey and blasting plan will be provided to the Airport Sponsor and will be available for review by the Maine Department of Environmental Protection (MeDEP). Section 20.1 specifies that blasting should only occur after Airport Sponsor approval and details methods for preventing flyrock from leaving the property, maximum allowable airblast decibels, the monitoring of airblast decibels, covering of the detonation cord, minimum radius for preblast survey, the period when blasting may occur, ground vibrations, and records of blasting procedures.

Air Quality. The generation of fugitive dust as a result of construction activities is anticipated. This impact is expected to be both temporary and localized.

Water Quality. A *Maine General Permit for Pollutant Discharge Elimination System* (MGDES) permit that authorizes the stormwater discharges associated with construction activity from the site will be required prior to construction of the proposed improvements. This permit requires a Notice of Intent for all construction activities disturbing one acre or more of land and a Notice of Termination when construction is complete. An Erosion and Sedimentation Control (ESC) plan is required for MGDES permit.

Section 14, *Basic Standards Erosion and Sedimentation Control Report*, of the *Site Location of Development Permit* summarizes erosion and sedimentation control measures to be implemented for the proposed improvements at the Portland International Jetport. The Erosion and Sedimentation Control (ESC) report specifies the following: existing conditions, soil erosion and sedimentation concerns, existing drainage features, critical areas, erosion/sedimentation control devices, erosion/sedimentation control measures, standards for stabilizing sites during winter, special measures for summer construction, sedimentation sumps, permanent erosion control measures, timing and sequence of erosion/sedimentation control measures, contracting procedure, provisions for maintenance of the erosion/sedimentation control features, and preconstruction conference.

No Action

No development is proposed under the No Action Alternative; therefore, no construction impacts will occur.

² *Site Location of Development Permit*, Major Amendment, For the Portland International Jetport Terminal Addition, Taxiway, Runway and Safety Area Improvements and Implementation of the WHMP, Volume I of II, October 2008

Analysis and Mitigation

Construction activities have the potential to result in temporary water quality impacts, particularly suspended sediments, during and shortly after precipitation events occurring during the construction phase. Recommendations established in FAA Advisory Circular 150/5371-10, *Standards for Specifying Construction of Airports, Item P-156, Temporary Air and Water Pollution, Soil Erosion and Siltation Control*, will be incorporated into project design specifications to further mitigate potential impacts. These standards include temporary measures to control water pollution, soil erosion, and siltation through the use of berms, fiber mats, gravels, mulches, slope drains, and other erosion control methods. Construction activities will need to comply with Section 14, *Basic Standards Erosion and Sedimentation Control Report*, of the *Site Location of Development Permit* for erosion and sediment control as well as Section 20, *Blasting*, of the *Site Location of Development Permit* for blasting activities related to removing rock. In addition, the airport sponsor will comply with the Maine General Permit for Pollutant Discharge Elimination System (MGDES) permit regarding filing Notice of Intent prior to construction activities affecting more than one acre.

The project design and construction of the Proposed Action Alternative will incorporate BMPs to reduce erosion, minimize sedimentation, and control non-stormwater discharges in order to protect the quality of surface water features on and off the airport. BMPs are defined as nonstructural and structural practices that provide the most efficient and practical means of reducing or preventing pollution of stormwater.

The mitigation measures outlined below will be put in place to limit construction impacts on the surrounding environment.

Site Preparation

- Minimize land disturbance.
- Use watering trucks to minimize dust.
- Cover trucks when hauling dirt.
- Stabilize the surface of dirt piles if not removed immediately.
- Use windbreaks to prevent accidental dust pollution.
- Limit vehicular paths and stabilize these temporary roads.
- Grade to prevent soil from washing onto paved roadways.

Construction

- Cover trucks when transferring materials.
- Use dust suppressants on traveled paths which are not paved.
- Minimize unnecessary vehicular and machinery activities.
- Minimize dirt track-out by washing or cleaning trucks before leaving the construction site.

Post Construction

- Revegetate any disturbed land not used.
- Remove unused material.
- Remove dirt piles.
- Revegetate all vehicular paths created during construction to avoid future off-road vehicular activities.

Construction Scheduling

- Sequence construction activities so that areas void of vegetation are not exposed for long periods of time.
- Schedule landscaping and other work that permanently stabilizes the area, to be done immediately after the land has been graded to its final contour.
- Alter the project schedule to minimize the amount of denuded areas during wet months.
- Construct permanent stormwater control facilities early in the project schedule and then utilize these structures for controlling erosion and sedimentation.

Limiting Exposed Areas

- Divert up-slope water from entering the denuded areas of the construction site by constructing dikes and swales.
- Divert or intercept stormwater before it reaches long and/or steep slopes.
- Release captured stormwater at a slow and controlled rate to prevent damage to downstream drainageways and structures.
- Increase the soil's ability to absorb moisture through vegetative means, surface roughening, and/or mulching.
- Stage grading so that the native vegetation provides a buffer to slow and disperse run-off.

Runoff Velocity Reduction

- Build check dams or other energy dissipation structures in unlined drainage channels to slow runoff velocity and encourage settlement of sediments.
- Limit slopes to 3:1 wherever practical.
- Intercept runoff before it reaches steep slopes using diversion dikes, swales, or other barriers.
- Protect slopes with mulches, matting, or other types of temporary or permanent soil stabilization.
- Provide velocity-reducing structures or rip rap linings at stormwater outfalls.

Sediment Trapping

- Direct sediment-laden stormwater to temporary sediment traps.
- Construct temporary sediment traps or basins at the drainage outlet for the site.
- Use temporary sediment barriers such as silt fences, straw bale barriers, sand bag barriers, and gravel filter barriers for construction sites with relatively flat slopes that produce sheet flow runoff.

Good Housekeeping

- Schedule regular inspections of stormwater and sediment control devices.
- Repair and/or replace stormwater and sediment control devices as often as necessary to maintain their effectiveness.

4.2.6 Energy Supplies, Natural Resources, and Sustainable Design

Proposed Action

The primary impact on natural resources resulting from the implementation of the Proposed Action Alternative is related to fuel usage during construction of the proposed airport improvements. Indirect impacts attributed to construction activities could temporarily increase the use of some or all of the fol-

lowing: electricity, fuel, oil, chemicals, water, and other forms of energy and resources needed to construct the proposed improvements.

The terminal addition is expected to use less energy than the existing areas of the terminal due to more efficient cooling and heating systems and newer construction materials that reduce energy consumption. Additionally, the new terminal may be designed to the *Leadership in Energy and Environmental Design (LEED) Green Building Standards*. LEED is a voluntary, consensus-based national standard for developing high performance, sustainable buildings.

No Action

No construction will occur with implementation of the No Action Alternative; therefore, natural resources and energy supply would be utilized in a manner similar as to what is experienced today.

Analysis and Mitigation

Implementation of the Proposed Action Alternative will result in an increased use of energy and natural resources during construction. However, it is anticipated that overall energy consumption during operation may be less due to more efficient cooling and heating systems and newer construction materials that reduce energy consumption. Additionally, some elements of the new terminal may be designed to the *Leadership in Energy and Environmental Design (LEED) Green Building Standards*. It is not anticipated that the demand for these resources will exceed supply.

No mitigation measures are required.

4.2.7 Hazardous Materials

Proposed Action

Construction of the Proposed Action Alternative will result in earthwork disturbances. Previous construction at the airport has not resulted in uncovering of any hazardous materials; therefore, it is unlikely that earthwork will expose any hazardous materials. The site does not contain a known source of contamination. There are no sites in the project area listed or under consideration for listing on the National Priority List in accordance with the *Comprehensive Environmental Response Compensation and Liability Act* as amended by the *Superfund Amendment and Reauthorization Act*.

In the event of a discovery of a hazardous substance in an amount greater than the reportable quantity as established by the EPA, the contractor shall notify the city's designated person responsible for the administration of the Spill Prevention Control Plan. The city representative will contact the National Response Center and provide details of the incident and measures taken to reduce the impact of the release.

No Action

No construction would occur with implementation of the No Action Alternative; therefore, no impacts to hazardous materials are anticipated to result from alternative implementation.

Analysis and Mitigation

The city will obtain and modify necessary permits for operation of the airport and construction of the proposed improvements. These actions will help ensure that any potential impacts are properly mitigated. Initial coordination with affected resource agencies has not identified any mitigation measures which may be required.

4.2.8 Historical, Architectural, Archaeological, and Cultural Resources

Proposed Action

As detailed previously in Chapter Three, Section 3.3, a walkover survey was conducted of the proposed areas for development. Additionally, a Phase II evaluation was conducted in July 2007 on two sites located south of Runway 36 identified in a Phase I archaeological survey in 2002 that required further analysis. The two sites were identified as Site 8.22 and Site 8.24. A copy of both reports is provided in **Appendix F**. The Maine Historic Preservation Commission (MHPC) reviewed the findings of reports published for the Phase II survey and walkover study. In a letter dated September 30, 2008 (**Appendix A**), Kirk Mohney, Deputy State Historic Preservation Officer, stated that “We [the MHPC] concur with the conclusions of the reports that 1) no historic archaeological sites are present in the project area, and 2) prehistoric archaeological sites 8.24 and 8.22 are not eligible for listing in the national register (not significant).”

In a letter dated November 19, 2007 (Appendix F), Mr. Earle G. Shettleworth, Jr., the State Historic Preservation Officer, stated that “A full evaluation of the audible and visual impacts of the proposed projects on historic resources needs to be conducted.” Audible impacts are addressed in Section 4.2.10, Noise.

In response to the request for an assessment of visual impacts, VHB/Vanasse Hangen Brustlin, Inc. completed an *Assessment of Visual Effects – Environmental Assessment for Proposed Improvements at Portland International Jetport*. A copy of which can be found in **Appendix F**.

The visual effects assessment was based on:

1. The National Register-qualifying characteristics that might be adversely affected by the introduction of new visual elements associated with the project (historic properties for which visual setting is one of the characteristics that qualify them for listing in the National Register); and
2. Evaluating whether or not the proposed new visual elements would affect the characteristics that qualify the resources for inclusion in the National Register in a manner that would diminish their integrity.

An *Adverse Effect* is found when an undertaking may alter, directly or indirectly, the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would

diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

The *Assessment of Visual Effects* concluded that the proposed improvements at the Portland International Jetport will not alter, directly or indirectly, any of the characteristics of the State Reform School/Brick Hill Historic District and Stroudwater Historic District that qualify these properties for inclusion in the National Register of Historic Places and would not diminish the integrity of the properties' location, design, setting, materials, workmanship, feeling, or association. While the Runway 36 departure position is moved 1,100 feet south, which moves plane departures visually closer to the State Reform School Historic District, the improvements will not result in larger planes using Runway 18-36, nor will it increase the number of takeoffs and landings on this runway. No impact to the Stroudwater Historic District would occur as the landing threshold is moved south and aircraft would be higher on approach and the extension to the south is opposite the Stroudwater Historic District. Furthermore, the departure point for planes on Runway 18 will remain the same. The building and parking additions proposed at the terminal area east of Runway 11-29 are at too far of a distance visually from both districts to produce an adverse visual effect, particularly since existing airport buildings and structures are already in these areas. The filling of the wetland and removal of vegetation adjacent to this wetland in the approach area of Runway 29 to improve safety conditions will have no adverse visual effect as these areas are too far removed visually from the districts. Alterations to access roads and taxiways will not produce visual adverse effects as the improvements only involve re-alignment and paving.

The FAA Airports Division initiated consultation with the Penobscot Nation as required by Section 106 of the National Historic Preservation Act (NHPA) of 1966. By letter dated December 17, 2007, the Penobscot Nation indicated that the proposed projects would "have no impact on a structure or site of historic architectural or archeological significance to the Penobscot Nation." A copy of this correspondence can be found in **Appendix F**.

No Action

As no development would occur with implementation of the No Action Alternative, no impacts are anticipated.

Analysis and Mitigation

As detailed in correspondence found in **Appendix F**, the Maine Historic Preservation Commission concluded that the Proposed Action Alternative "will have no adverse effect upon historic properties, as defined by Section 106." No mitigation is required.

4.2.9 Light Emissions and Visual Impacts

Proposed Action

Implementation of the Proposed Action Alternative will result in a number of lighting changes. Additional medium intensity runway lighting (MIRL) and medium intensity taxiway lighting (MITL) will be added to the Runway 18-36 extension. The existing visual approach slope indicators (VASI) at the Runway 18 and Runway 36 ends will be relocated to coincide with the new landing thresholds. The Runway 36 runway end identifier lights (REILs) will be relocated to the extended Runway 36 end. New MITL will

be installed along the length of the new taxiway extending between Taxiway G and Taxiway A. New exterior lighting will be added to the terminal apron addition and terminal building new core structure commensurate with security and safety requirements. Existing automobile parking lots will be relocated to the north near the International Parkway/Jetport Boulevard intersection when the terminal addition is constructed.

The relocation of the Runway 18 VASI will move this lighting aid approximately 450 feet south and away from the Stroudwater neighborhood. The Runway 36 VASI, REILs, MITL, and MIRL will be relocated approximately 1,100 feet south. These Runway 36 lighting aids may be more visible to areas in the State Reform School/Brickhill Historic School. If the lighting becomes problematic, the airport has the ability to shield the lights, thereby making them visible only to pilots arriving at the airport. Existing vegetative buffers shield any new lighting from the terminal area for residents in the Stroudwater neighborhood.

No Action

As no development would occur with implementation of the No Action Alternative, no lighting or visual impacts are anticipated.

Analysis and Mitigation

Implementation of the Proposed Action Alternative will result in the relocation of aircraft navigation lighting closer to the State Reform School/Brickhill Historic School. If the relocated lighting becomes problematic, the airport can mitigate the impact by shielding the lighting to make it visible only to aircraft and/or installing a vegetative buffer.

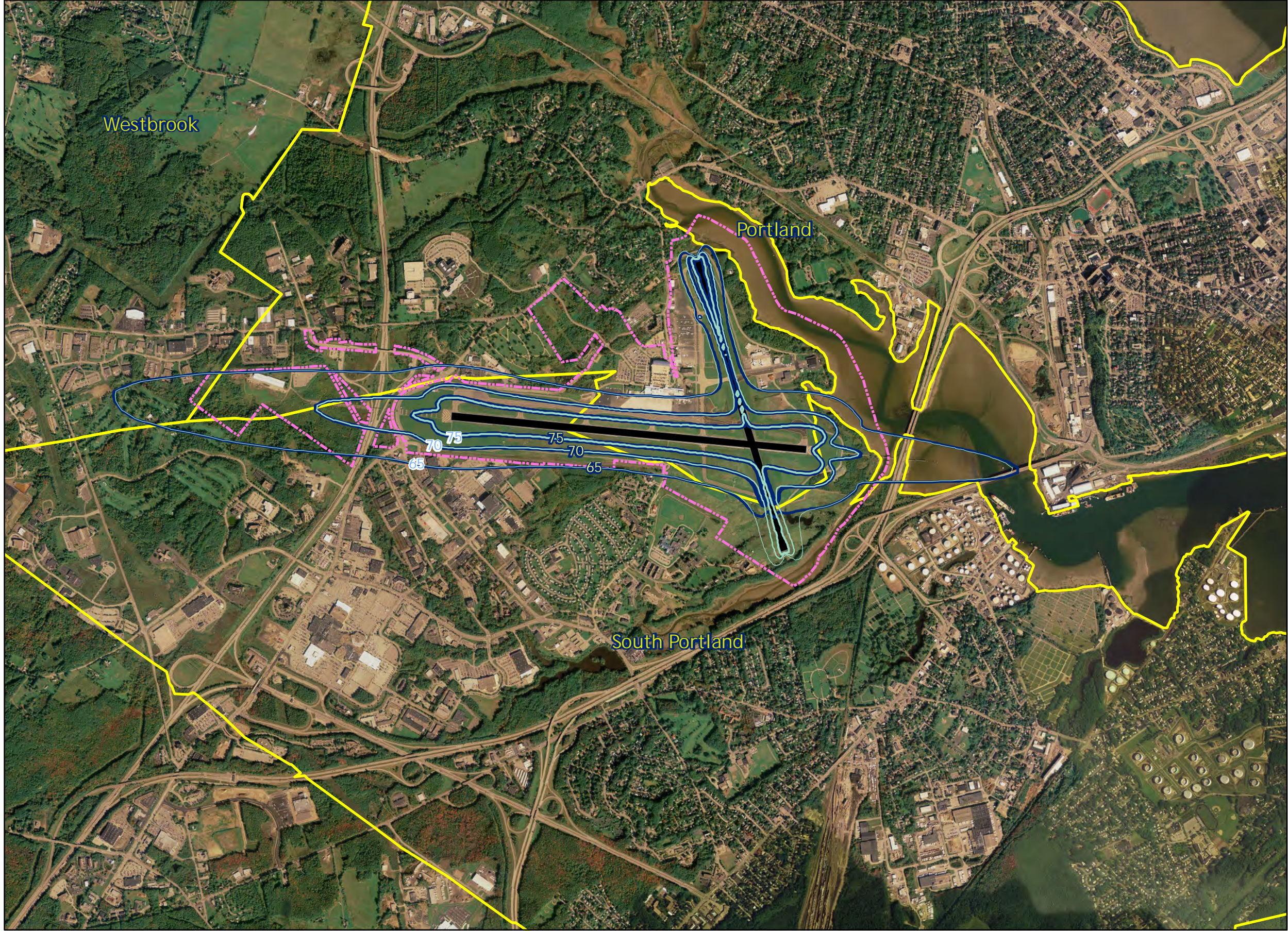
4.2.10 Noise

In accordance with FAA Orders 1050.1E and 5050.4B, the anticipated noise condition was prepared for the existing condition as well as the alternatives under consideration. Future analysis time periods include the anticipated final year of project implementation (2012) and five years from the implementation date (2017). Detailed descriptions of the modeling inputs are contained within the noise discussion in **Appendix H**.

Proposed Action




Exhibit 4A depicts the 65, 70, and 75 DNL noise contours for the final year of project implementation (2012). Portions of the Proposed Action Alternative 65 DNL contours extend beyond airport property to the east over the Fore River. To the west, the 65 DNL contour extends beyond airport property across a golf course and industrial/commercial land uses which are considered compatible. No noise-sensitive development is contained within any of the depicted contours.

Exhibit 4B depicts the 65, 70, and 75 DNL noise contours for five years after project implementation (2017). Portions of the Proposed Action Alternative 65 DNL contours extend beyond airport property to the east over the Fore River. To the west, the 65 DNL contour extends beyond airport property across a golf course and industrial/commercial land uses which are considered compatible. No noise-sensitive development is contained within any of the depicted contours.









Portland International Jetport
Noise Contours

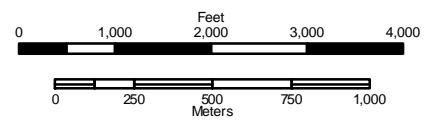
2012 Action

-  65 Decibel
-  70 Decibel
-  75 Decibel

2012 No Action

-  65 Decibel
-  70 Decibel
-  75 Decibel

-  Airport Property
-  Airport Runway
-  Urban Areas





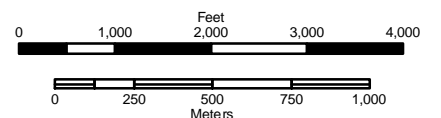
Portland International Jetport
Noise Contours

2017 Action

- 65 Decibel
- 70 Decibel
- 75 Decibel

2017 No Action

- 65 Decibel
- 70 Decibel
- 75 Decibel
- Airport Property
- Airport Runway
- Urban Areas



Indirect noise impacts primarily relate to those that occur during construction of the proposed airport improvements. These impacts were discussed within Section 4.2.5, Construction Impacts.

No Action

For comparison purposes, the No Action Alternative noise contours are also depicted on **Exhibits 4A** and **4B**. As with the Proposed Action Alternative, portions of the No Action Alternative 65 DNL contours extend beyond airport property to the east over the Fore River. To the west, the 65 DNL contour extends beyond airport property across a golf course and industrial/commercial land uses which are considered compatible. No noise-sensitive development is contained within any of the depicted contours.

Analysis and Mitigation

When compared to the No Action Alternative, implementation of the Proposed Action Alternative does not result in a significant noise impact as defined by the FAA. A significant noise impact is defined as one which would occur if the Proposed Action would cause noise-sensitive areas to experience an increase in noise of 1.5 DNL or more, at or above the 65 DNL noise exposure level when compared to the No Action Alternative for the same timeframe. There are no noise-sensitive land uses contained within the 65 DNL or higher noise contours for the Portland International Jetport with or without project implementation. The threshold of significance is not exceeded. No mitigation measures are required.

4.2.11 Secondary (Induced) Impacts

Proposed Action

The terminal building improvements are being undertaken to meet existing passenger demand levels and requirements for security. The implementation of the WHMP and airfield improvements are being undertaken to meet safety requirements the FAA. Implementation of the Proposed Action Alternative will not result in shifts in patterns of population movement or growth, or changes in business or economic activities as all development will occur on existing airport property. Increases in public service demands are not anticipated as these improvements serve existing demand levels and would not alter requirements for police and fire protection, educational, or utility services. The Proposed Action Alternative is consistent with the adopted City of Portland's Master Plan for the Portland International Jetport.

Indirect impacts for each element of the Proposed Action are varied. The implementation of the deicing facility has the positive impact of removing deicing compounds from the surface stormwater conveyance system. All deicing compounds will be collected and recycled instead of flowing through the surface stormwater systems to the Fore River. The shifting of the Runway 36 threshold to the south will require the removal of trees along the northern bank of Long Creek to protect aircraft approach and departure paths. This loss of riparian buffer vegetation may reduce some of the aesthetic qualities of this portion of Long Creek. Other vegetation removal associated with the wetland area east of the Runway 29 end will occur on airport property with the existing vegetation along the banks of the Fore River remaining unchanged. Positive indirect water quality improvements are expected. While additional impervious surfaces will be created which can increase stormwater run-off and the conveyance of volatile organic compounds from vehicle and aircraft operations, the Proposed Action includes three new vegetated underdrained soil filters and increased depth in the pond at the south side of Runway 18-36,

which increase the ability to remove materials from the stormwater conveyance systems before draining into the Fore River.

No Action

Implementation of the No Action Alternative would not address the safety and security needs of the existing airport users. This alternative is not consistent with the City of Portland's Master Plan for the Portland International Jetport.

Analysis and Mitigation

Implementation of the Proposed Action Alternative will not result in shifts in patterns of population movement or growth, increases in public service demands, nor changes in business or economic activities. The Proposed Action Alternative is consistent with the adopted City of Portland's Master Plan for the Portland International Jetport.

No mitigation measures are required.

4.2.12 Social Impacts

Proposed Action

Socioeconomic Impacts

Division or disruption of existing communities or interference with orderly planned development will not occur with implementation of the proposed project. The improvements outlined are expected to have only local impacts; the division or disruption of established communities is not anticipated as a result of the proposed project.

Children's Environmental Health and Safety

After implementation of the proposed airport improvements, the airport will continue to operate in a manner similar as it does today. Therefore, access to substances which could affect a child's health or safety will still be limited. The perimeter fence would be maintained to restrict unauthorized persons from gaining access to the runway and other areas of potential health and safety risks. Potential elevated health and safety risks to children could result during construction of the proposed projects as disturbed soils and stockpiled materials pose potential pathways for increased fugitive soil/dust inhalation and ingestion by children. Additionally, the construction site, including areas of excavation, soil, and materials stockpiles, and construction equipment pose potential physical safety risks.

No Action

Because no construction will occur with implementation of the No Action Alternative, no disruption in orderly or planned development will occur and access to substances which could affect a child's health or safety will still be limited. Implementation of the No Action Alternative is not anticipated to result in children's environmental health and safety impacts.

Analysis and Mitigation

Implementation of the No Action Alternative will result in no socioeconomic impacts. Access to substances which could affect a child's health or safety will still be limited.

Potential health and safety risks to children will be minimized through adherence to standard construction and safety practices implemented by the construction contractor. The disturbance and/or stockpiling of contaminated soils are not anticipated. Fugitive dust will be controlled by the application and maintenance of standard erosion and sedimentation control measures. The airport security fence will be relocated during construction; however, a secure perimeter would be maintained at all times.

The construction contractor will employ best management practices (BMPs) to restrict children from the construction site. These practices may include the posting of signs around the construction site, prohibiting access, fencing, warnings posted around areas of open excavation, and site policing.

4.2.13 Solid Waste

Implementation of the WHMP will clear the equivalent of approximately eight acres of wooded area. At 300 cubic yards of stumps and grubbing per acre, this results in approximately 2,400 cubic yards, which will be processed into erosion control mix to be used on site or transported to a MeDEP licensed disposal facility. All waste will be disposed of locally at a MeDEP licensed disposal facility.

The remaining projects in the Proposed Action Alternative are being undertaken to accommodate existing airline passenger and aircraft operational demand levels as well as meet safety and security requirements of the FAA. The improvements are not necessarily being undertaken to increase capacity at the airport; therefore, solid waste impacts are not anticipated as the airport will serve the same number of operations and annual airline passengers regardless of whether or not the improvements are made. Solid waste will continue to be disposed of in MeDEP licensed disposal facility.

No Action

No construction would occur with implementation of the No Action Alternative; therefore, solid waste will continue to be generated at the same rate as the Proposed Action Alternative.

Analysis and Mitigation

Approximately 2,400 cubic yards of stumps and grubbing will be accumulated when clearing the wooded area east of Runway 29 as part of the WHMP recommendations. This organic material will be processed into erosion control mix to be used on-site or transported to a MeDEP licensed disposal facility. All other solid waste will continue to be disposed of at a MeDEP licensed disposal facility. Initial coordination with affected resource agencies has not identified any mitigation measures which may be required.

4.2.14 Water Quality

Proposed Action

As shown in **Table 4D**, implementation of the Proposed Action Alternative will result in an increase of 31.4 acres of impermeable surfaces. This will require a modification to the airport’s existing *Site Location of Development Permit*. Section 12, Stormwater Management, of the *Site Location of Development Permit* application details the water quality measures for the Proposed Action Alternative which were designed in accordance with MeDEP Stormwater Law (Chapter 500). A 28,877 square-foot (s.f.) surface area vegetated, underdrained soil filter is planned for the deice facility area and portions of aircraft apron adjacent to the terminal. An 18,781 square-foot (s.f.) surface area vegetated, underdrained soil filter is planned for the new taxiway and portions of the Runway 18-36 snow shoulders. A 449,322 cubic-foot wet pond will serve the Runway 18-36 extension. Two vegetated, underdrained soil filters are planned for the relocated parking areas east of the terminal addition.

TABLE 4D
New Impervious Area

Description	New Impervious Area (acres)
WHMP Implementation and Runway 11-29 RSA Improvements	1.33
Terminal Building Addition, Terminal Apron, Deicing Fluid Recovery and Treatment Facility, Roadway Improvements. Automobile Parking Improvements	11.56
New taxiway	3.87
Runway 18-36 snow shoulders, extension, and RSA improvements	14.64
Total	31.40

Source: *Site Location of Development Permit*, October 2008

RSA – Runway Safety Area

WHMP – Wildlife Hazard Management Plan

The *Site Location of Development Permit* application identifies additional storm drain improvements. This includes a new 60-inch storm drain outfall to the Fore River which will extend under Runway 18-36 to help decrease the tailwater effects on the existing 48-inch culvert under Runway 18-36. Additionally, the permit application identifies a proposed 30-inch storm drain outfall to the Fore River east of Runway 29 and a new 54-inch storm drain parallel with Taxiway A.

Presently, aircraft deicing is conducted on the apron area. Spent deicing fluids flow from the apron into the existing stormwater collection systems. The Portland International Jetport is required by MeDEP to collect and pre-treat spent deicing fluid in the form of recycling and discharge of distillate to the Portland’s Wastewater Treatment Facility by November 2010. The Proposed Action Alternative includes provisions to collect spent deicing fluid from central aircraft deicing pads. The spent deicing fluid will then flow through collection drain trenches to the east where the proposed deicing fluid collection, storage, and recycling facilities are located. The facilities will include an area to house up to two glycol concentrators, a limited number of aboveground tanks associated with glycol processing and storage, a 500,000-gallon underground storage tank to hold spent deicing fluid prior to processing, and pumping stations to support operations. The distillate from spent deicing fluid processing will be sent to the City of Portland’s waste water treatment facility for treatment prior to discharge. Recycled glycol will be trucked offsite by the company selected to perform deicing fluid recovery and processing operations.

Construction of the proposed improvements may have limited, near-term effects on surface water quality, particularly an increase in suspended sediments during and shortly after precipitation events occurring during the construction phase. As a result, a *Maine General Permit for Pollutant Discharge Elimination System* (MGDES) permit that authorizes the stormwater discharges associated with construction activity from the site will be required prior to construction of the proposed improvements. This permit requires a Notice of Intent for all construction activities disturbing one acre or more of land and a Notice of Termination when construction is complete. An Erosion and Sedimentation Control (ESC) plan is required for MGDES permit. The ESC is also a component of the *Site Location of Development Permit*. This project will not impact any *Clean Water Act*, Section 303(d), listed waters, sole source aquifers, a public drinking water supply, or waters of national significance.

As discussed within Chapter Three, the airport is operating under Maine's *Multi-Sector General Permit for Stormwater Discharge Associated with Industrial Activity* (MSGP) Permit Number MER05B425. Implementation of the Proposed Action Alternative will require a modification of this permit and the Storm Water Pollution Prevention Plan (SWPPP) to reflect the additional impervious surfaces and the new deice fluid collection system. Construction-related water quality impacts are discussed in Section 4.2.5, and will be minimized through the use of best management practices (BMPs).

As discussed in Section 4.2.15, Wetlands, the Proposed Action Alternative will impact approximately 13.61 acres of wetlands. Approximately 2.03 acres of wetlands have already been approved and compensated for development, but not yet disturbed. The net total of wetland impacts to be compensated for development is 11.58 acres. An Individual Permit under Section 404 of the *Clean Water Act* from the U.S. Army Corp of Engineers and a Tier III *Natural Resources Protection Act* (NRPA) permit is required for these wetland impacts. These permits and mitigation are discussed in Section 4.2.15, Wetlands.

No Action

Implementation of the No Action Alternative will result in no construction activities; therefore, there will be no changes to impervious surfaces or stormwater runoff. The airport will need to continue to comply with provisions outlined in their existing MSGP Permit Number MER05B425. The No Action Alternative would not construct a deicing fluid collection and treatment system. Without this system in place, the Portland International Jetport would be in violation of MeDEP requirements for the airport's MSGP.

Analysis and Mitigation

Implementation of the Proposed Action Alternative will result in an increase of 31.4 acres of impermeable surfaces. This will require a modification to the airport's existing *Site Location of Development Permit*. The increase in impermeable surfaces requires several water quality measures to meet the requirements of the MeDEP Stormwater Law (Chapter 500). Water quality measures includes the construction of a 28,877 square-foot (s.f.) surface area vegetated, underdrained soil filter for the deice facility area and portions of aircraft apron adjacent to the terminal, an 18,781 square-foot (s.f.) surface area vegetated, underdrained soil filter for the new taxiway and portions of the Runway 18-36 snow shoulders, a 449,322 cubic-foot wet pond to serve the Runway 18-36 extension, and two vegetated, underdrained soil filters are for the relocated parking areas east of the terminal addition.

Storm drain outfall improvements are also needed to meet stormwater conveyance requirements. This includes a new 60-inch storm drain outfall to the Fore River which will extend under Runway 18-36 to

help decrease the tailwater effects on the existing 48-inch culvert under Runway 18-36. Additionally, the permit application identifies a proposed 30-inch storm drain outfall to the Fore River east of Runway 29 and a new 54-inch storm drain parallel with Taxiway A.

Permitting agencies, specifically the Maine Department of Environmental Protection and U.S. Army Corp of Engineers, have not indicated concerns regarding the issuance of permits for the projects outlined within the Proposed Action Alternative. The existing MSGP Permit Number MER05B425 associated SWPPP will be updated to reflect conditions at the airport after construction. An Individual Permit under Section 404 of the *Clean Water Act* from the U.S. Army Corp of Engineers and a Tier III *Natural Resources Protection Act* (NRPA) permit is required for these wetland impacts. These permits and mitigation are discussed in Section 4.2.15, Wetlands.

The No Action Alternative results in no improvement to the airport; therefore, no water quality impacts would occur. However, under the No Action Alternative, the deicing fluid collection and treatment system would not be constructed. Without this system in place, the Portland International Jetport would be in violation of MeDEP requirements for the airport's MSGP to collect and pre-treat spent deice fluids.

A *Maine General Permit for Pollutant Discharge Elimination System* (MGDES) permit that authorizes the stormwater discharges associated with construction activity from the site will be required prior to construction of the proposed improvements. Construction-related water quality impacts are discussed in Section 4.2.5, and will be minimized through the use of best management practices (BMPs).

4.2.15 Wetlands/Waters of the U.S.

Proposed Action

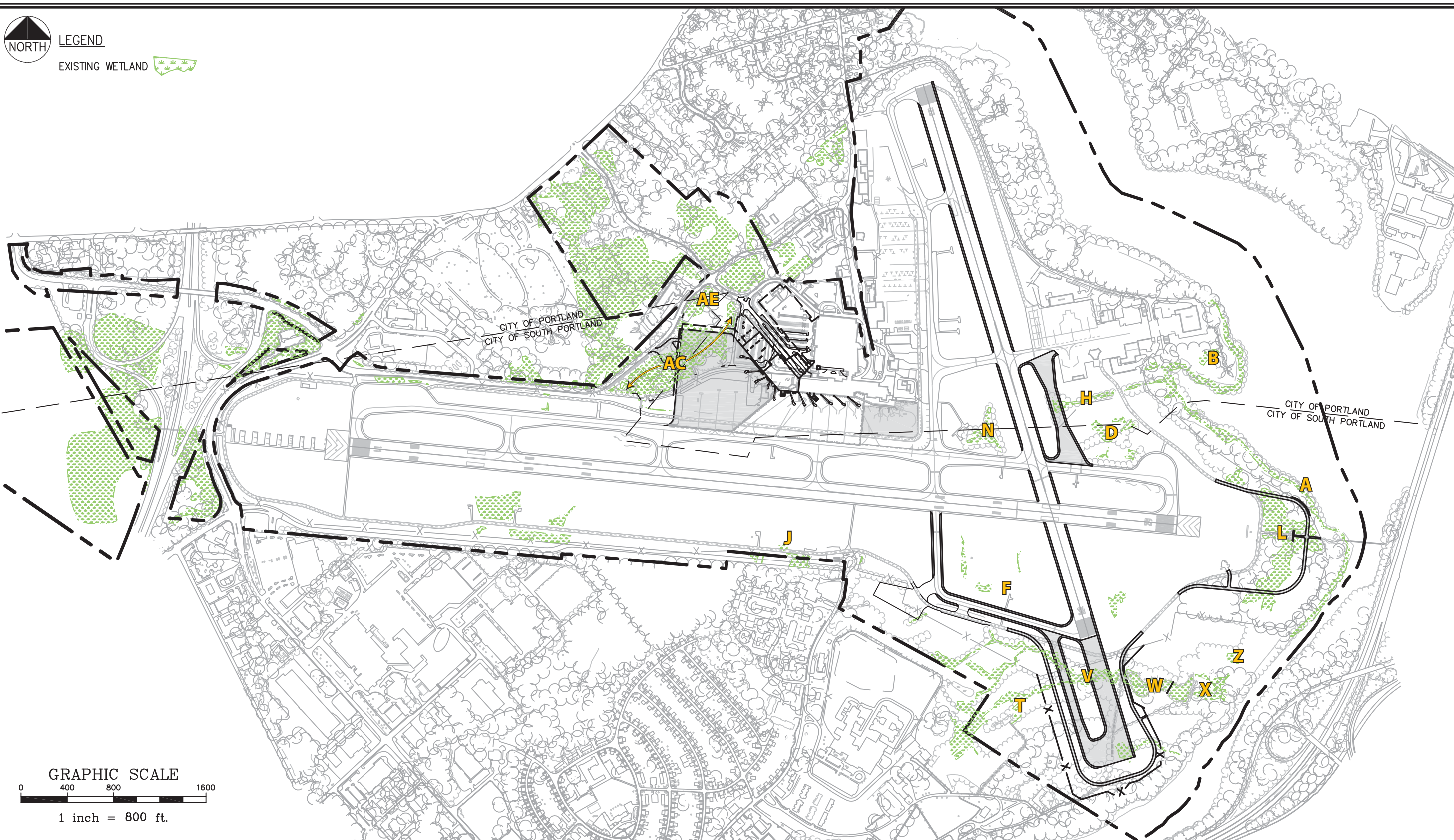
As detailed in Section 9 of the *Natural Resources Protection Act*³ application, the Proposed Action Alternative would impact approximately 13.61 acres of wetlands. This acreage includes 2.03 acres of wetlands that have already been approved and compensated for development, but not yet disturbed. Therefore, net wetland impacts total approximately 11.58 acres. The impacted wetlands are shown on **Exhibit 4C. Table 4E** summarizes the proposed project areas, total acres of wetlands impacted, and wetland type. An Individual Permit under Section 404 of the *Clean Water Act* from the U.S. Army Corp of Engineers and a Tier III *Natural Resources Protection Act* (NRPA) permit are required for these wetland impacts..

³ *Natural Resources Protection Act Application*, TRC Companies, October 2008



LEGEND

EXISTING WETLAND 



GRAPHIC SCALE



1 inch = 800 ft.



DeLuca-Hoffman Associates, Inc.

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SOUTH PORTLAND, ME 04106
207.775.1121
WWW.DELUCAHOFFMAN.COM

DRAWN:	LECJ	DATE:	MAY 2008
DESIGNED:	DDA	SCALE:	1" - 800'
CHECKED:	DDA	JOB NO.:	2743
FILE NAME:	2743-SP		

PORTLAND INTERNATIONAL JETPORT
ENVIRONMENTAL ASSESSMENT AND
REQUIRED ENVIRONMENTAL PERMITS

OVERALL WETLAND FIGURE



TABLE 4E
Summary of Wetlands in the Proposed Project Area

Project Area	ID	Wetland Type ¹	Wetland Function/Value(s) ²	Acre(s)
Terminal Building Addition, Terminal Apron, Deicing Fluid Recovery And Treatment Facility, Roadway Improvements. Automobile Parking Improvements	AC	PEM1	STPR/ WLH	2.98 PSS ¹
	AE	PFO1 (now isolated)	WLH	0.87 PFO
Access Taxiway Improvements	H	Drainage Ditch PEM1	Surface water conveyance	0.64
Wildlife Hazard Management Plan and Runway 11-29 Improvements	L	PEM1 (wildlife hazard)/PSS1	WLH, ESH (PSS1 Portion)	2.58 PEM 2.31 PSS
	S	Mowed PEM2	WLH	0.54 PEM
Runway 18-36 Improvements	W	POWh	STPR, NRRT, WLH, A	0.05 POW
	V	PEM1	STPR, NRRT, WLH	1.61 PEM
Total Impacts				13.61
Previously compensated, but not yet impacted wetlands				2.03
Net wetland impacts				11.58
¹ Wetland types: <ul style="list-style-type: none"> • PEM1 – Palustrine, persistent emergent • PEM2 – Palustrine, non-persistent (mown) emergent • PSS1 – Palustrine, broad-leaved deciduous forested • PFO1 – Palustrine, broad-leaved deciduous forested • POWh – Palustrine, open water, diked/impounded ² Wetland functional values: <ul style="list-style-type: none"> • NRRT – Nutrient removal/retention/transformation • STPR – Sediment, toxicant, pollutant retention • WLH – Wildlife habitat • ESH – Threatened/endangered species habitat 				

¹ 2.03 acres of impact to this wetland has been previously compensated

Source: *Wetland Resources Report, Portland International Jetport (PWM), Portland and South Portland, Maine.* TRC Companies, Inc., 2008, updated March 12, 2009.

• **Terminal Area Improvements**

The terminal area improvements impact wetlands AE and AC as identified on **Exhibit 4C**. Wetland AE is isolated forested wetland. No practicable alternative exists to avoid impacts to this wetland community. Wetland AE serves a function of wildlife habitat. This wetland community does not provide habitat for any state or federally listed candidate, threatened, or endangered species.

Wetland AC is classified as a palustrine, broad-leaved deciduous scrub shrub and palustrine, persistent emergent wetland community that functions sediment, toxicant, and pollutant retention. Wetland AC ultimately drains to the north and connects to a larger wetland community via a culvert placed under Jetport Boulevard. Approximately 2.03 acres of Wetland AC have previously been approved and compensated for development; however, this portion of Wetland AC has yet to be disturbed. The Proposed Action Alternative limits impacts to this wetland. As shown on **Exhibit 4C**, a portion of Wetland AC south of Jetport Boulevard to the limits of the previously permitted and compensated for impact will remain. Hydrology in Wetland AC is unlikely to be impacted by the Proposed Action Alternative. Wet-

land AC is linked via a culvert to the wetland area north of Jetport Boulevard that is not disturbed. As detailed in Chapter Two, all practicable alternatives resulted in similar impacts to these wetlands. Three vegetated underdrained soil filters are planned to serve the water quality functions of these wetland areas.

- **Access Taxiway Improvements**

Wetland H is impacted by the proposed access taxiway. Opportunistic hydrophytes dominate the altered soils in this wetland. This regularly mown part of the airfield wetland is a non-persistent emergent community (PEM2). This wetland serves surface water conveyance to the Fore River. As detailed in Chapter Two, there are no practicable alternatives to avoid impacts to this wetland. Implementation of the Proposed Action Alternative will direct surface water conveyance through a new water quality filter located to the east of the access taxiway, then via a 30-inch culvert to the Fore River.

- **Wildlife Hazard Management Plan And Runway 11-29 Improvements**

Wetland L is impacted by the implementation of the WHMP recommendations and improvements to Runway 11-29. As detailed in Chapter Two, no practicable alternative exists to avoid impacts to this wetland. Wetland L is classified as a palustrine, broad-leaved deciduous forested and palustrine, persistent emergent wetland community. The palustrine, broad-leaved deciduous forested portion of the wetland provides habitat for the New England Cottontail rabbit, which is classified as a federal candidate species by the USFWS and as endangered under the *Maine Endangered Species Act*. Section 4.2.2 provides more detail on the impacts to the cottontail rabbit.

- **Runway 18-36 Improvements**

Wetland W, Wetland V, and Wetland S are impacted by the southerly extension of Runway 18-36. As shown in Chapter Two, no practicable alternative exists to avoid impacts to Wetland V. However, impacts to Wetland V and Wetland W were limited by a reconfiguration of the perimeter service road. By approving a modification to design standard, the FAA allowed for the perimeter service road to be located within the Runway 18-36 object free area (OFA). This reduced impacts to Wetland V and Wetland W by approximately 1.03 acres.

Wetland V is a palustrine, persistent emergent wetland that serves nutrient removal/retention/ transformation; sediment, toxicant, and pollutant retention; and wildlife habitat. This wetland community does not provide habitat for any state or federally listed candidate, threatened, or endangered species. Culverts placed under Runway 18-36 will maintain existing hydrological flow. The functions of this wetland will now be served by Wetland W, the wet pond. Wetland W is a palustrine, open water, diked/impounded wetland that serves nutrient removal/retention/transformation; sediment, toxicant, and pollutant retention; wildlife habitat and visual quality/aesthetics. Improvements to Wetland W include increasing the depth and the addition of vegetative water quality filter.

Wetland S is a palustrine, non-persistent (mown) emergent wetland that supports wildlife habitat. This wetland community does not provide habitat for any state or federally listed candidate, threatened, or endangered species.

No Action

Implementation of the No Action Alternative will result in no construction activities; therefore, no wetlands will be impacted.

Analysis and Mitigation

Implementation of the Proposed Action Alternative will impact 13.61 acres of wetlands. Approximately 2.03 acres of these wetlands have already been approved and compensated for development, but not yet disturbed. The net total wetland impact is 11.58 acres. No wetland impacts would occur with the implementation of the No Action Alternative.

Compensation for wetland impacts from implementation of the Proposed Action Alternative is proposed to occur at two offsite locations referred to as the Maine Wetlands Bank (MWB) and Larrabee Farms in Scarborough, Maine. Onsite wetland compensation is discouraged by the FAA. The FAA recommends that wetland mitigation projects at airports such as Portland International Jetport be located at least 10,000 feet from the airport.⁴

Wetland compensation at MWB envelops and incorporates an unnamed, perennial tributary of Long Creek which flows into the Fore River. Long Creek extends along the Portland International Jetport's southern boundary. Therefore, MWB occurs in the same watershed. MWB provided wetland compensation for two previous projects for the Portland International Jetport.

The proposed compensation at MWB covers a land area of 10.04 acres comprised of two acres of wetland restoration now in place in a stormwater management basin retrofitted in 2006, restoration of 1.7 acres of wetland by removal of illegal fill, enhancement of an additional 2.3 acres of existing wetland, and the preservation from future development of 4.0 acres of upland and wetland in the Glassworld Industrial Park. **Exhibit 4D** depicts proposed wetland compensation at MWB. The specific mitigation plan is included in **Appendix D**.

The Larrabee Farm compensation site is approximately four miles southwest of Portland International Jetport. The Larabee Farm site protects more than 1.4 miles of both sides of the Nonesuch River, a tributary of the Scarborough River watershed. Wetland compensation proposed at Larrabee Farms covers a land area of 100.01 acres comprised of 3.53 acres of wetland creation and 96.48 acres of preservation that interlinks two existing wetland compensation areas covering a combined area of 88.46 acres and secures an additional 0.8-mile stretch of the Nonesuch River riparian corridor for a combined distance of 1.6 miles when considering both sides of the river. **Exhibit 4E** depicts proposed wetland compensation at Larrabee Farms. The specific mitigation plan for Larrabee Farms is included in **Appendix D**.

An Individual Permit application under Section 404 of the *Clean Water Act* from the U.S. Army Corp of Engineers was made on November 12, 2008. A Tier III *Natural Resources Protection Act* (NRPA) permit application was made to the MeDEP on October 31, 2008. **Appendix D** includes correspondence from the U.S. Army Corp of Engineers on November 21, 2008 requesting additional information to process the individual permit application. The requested information has been provided to the U.S. Army Corp of Engineers. As shown on the Mitigation Plan Checklist in **Appendix D**, the U.S. Army Corp of Engineers reviewed the proposed mitigation plan on December 12, 2008. Section Q notes that "Overall, use of the

⁴ *Hazardous Wildlife Attractants on or Near Airports*, FAA Advisory Circular 150/5200-33B, August 8, 2007

BUFFER ENHANCEMENT PLAN



PLANT SPECIFICATIONS

Qty.	Ref.#	Botanical Name	Common Name	Size
Trees				
140		<i>Pinus strobus</i>	White Pine	2-3 ft.
50		<i>Fraxinus pennsylvanica</i>	Green Ash	2-3 ft.
50		<i>Crataegus crusgalli</i>	Hawthorn	2-3 ft.
Shrubs				
60		<i>Cornus stolonifera</i>	Red osier dogwood	18-24 in.
50		<i>Salix nigra</i>	Black Willow	18-24 in.
50		<i>Aronia melanocarpa</i>	Black Chokeberry	18-24 in.

SEEDING SPECIFICATIONS

PEM OBL-FACW Food and Cover Wetland Mix		
10%	<i>Asclepias incarnata</i>	Swamp milkweed
30%	<i>Elymus virginicus</i>	Virginia wild rye
10%	<i>Leersia virginica</i>	Rice cutgrass
10%	<i>Onoclea sensibilis</i>	Sensitive fern
6%	<i>Scirpus cyperinus</i>	Wool grass
6%	<i>Sparganium eurycarpum</i>	Giant bur-reed
5%	<i>Polygonum arifolium</i>	Tearthumb
5%	<i>Carex comosa</i>	Cosmos sedge
1-3% 3-9 other native species in commercially available mix		



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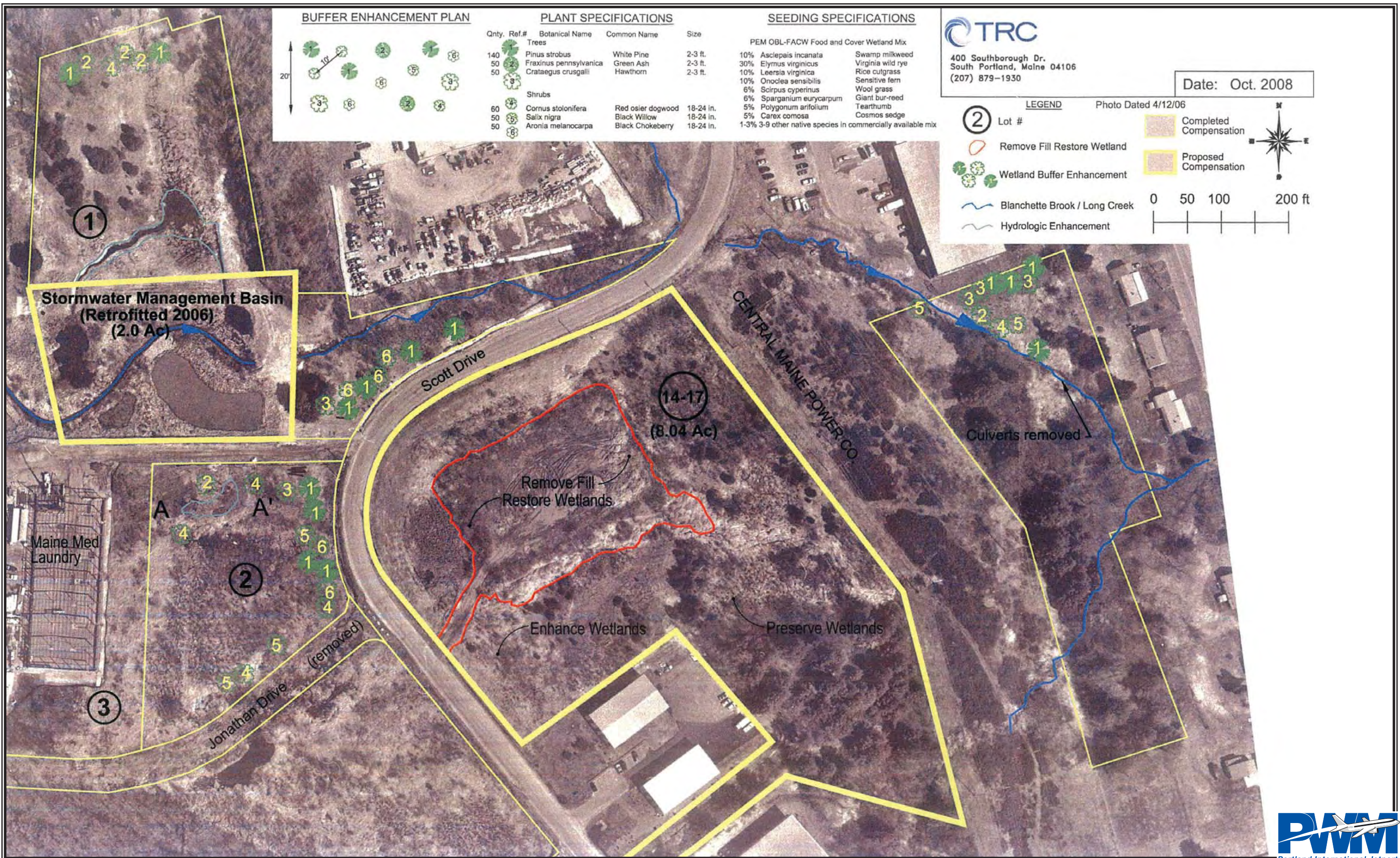
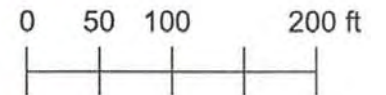
Date: Oct. 2008

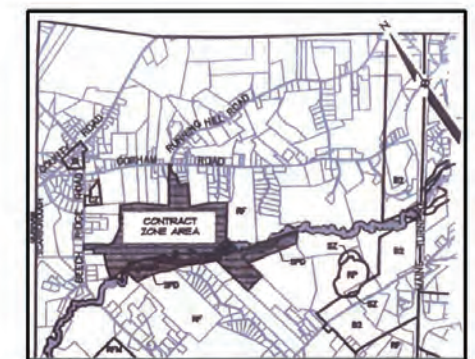
LEGEND

- ② Lot #
- Remove Fill Restore Wetland
- Wetland Buffer Enhancement
- Blanchette Brook / Long Creek
- Hydrologic Enhancement

Photo Dated 4/12/06

- Completed Compensation
- Proposed Compensation





LOCATION MAP



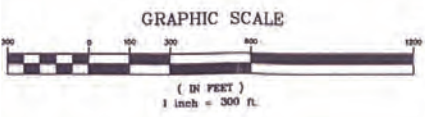
PRELIMINARY PLAN
NOT FOR CONSTRUCTION

APPROVED / IMPLEMENTED
MITIGATION AREAS

POTENTIAL MITIGATION AREAS

GENERAL NOTES:

1. THE RECORD OWNER OF THE PARCEL IS ROBERT & PHILIP GRONIN BY DEEDS RECORDED AT THE CLIFTON COUNTY REGISTRY OF DEEDS.
2. THE PROPERTY IS SHOWN AS LOTS 6 & 7 ON THE TOWN OF SCARBOROUGH TAX MAP R3, LOTS 3 & 4 ON MAP R4 AND LOT 20 ON MAP R5.
3. TOTAL AREA OF PROPERTY = 3312 ACRES.
4. PROPERTY IS LOCATED WITHIN THE CONTRACT ZONE #8. THE ADDITIONAL 53-ACRE SCARBOROUGH FISH AND GAME PROPERTY IS PROPOSED TO BE ADDED TO THE CONTRACT ZONE.
5. MITIGATION AREAS ARE TO BE PREPARED IN SEPARATE AREAS AS INDICATED ON THIS PLAN PRIOR TO THE START OF PREPARATION OF EACH MITIGATION AREA. AN AMOUNT MUST BE ESTABLISHED WITH THE TOWN ENGINEER FOR A PERFORMANCE GUARANTEE AND ANY INSPECTION FEES RELATED TO THAT MITIGATION AREA. REFER TO REQUIREMENTS OF THE CONTRACT ZONE AGREEMENT.
6. WETLAND MAPPING COMPLETED BY MARK HAMPION OF MARK HAMPION ASSOCIATES AND LOCATED BY GPS METHODS.
7. FUTURE CREATION AND PRESERVATION AREAS ARE APPROXIMATE AND SUBJECT TO EXPANSION OR CHANGE IN CONFIGURATION AS REQUIRED TO MEET FUTURE MITIGATION NEEDS AND REGULATORY PERMITTING REQUIREMENTS. AS SPECIFIED IN THE CONTRACT ZONE, "IN ACCORDANCE WITH CONTRACT ZONE SECTION 3(K), ANY DEVIATIONS IN WETLAND CREATION AREAS FROM THE DEPICTIONS ON THE PLAN SHALL REQUIRE TOWN ENGINEER APPROVAL IN ACCORDANCE WITH SECTION 3(K) OF THE CONTRACT ZONE. SUBSTANTIAL CHANGES TO THE PLAN AS DETERMINED BY THE TOWN ENGINEER, SHALL REQUIRE APPROVAL FROM THE PLANNING BOARD."
8. THIS PLAN IS PART OF A TOWN OF SCARBOROUGH CONTRACT ZONE NO. 8 (LARRABEE FARMS MITIGATION PROJECT). REFER TO CONTRACT ZONE TEXT FOR ADDITIONAL REQUIREMENTS.
9. THE BOUNDARY SHOWN HEREIN LOCATED NORTHERLY OF THE NONESUCH RIVER IS BASED SOLELY ON A PLAN ENTITLED, "STANDARD BOUNDARY SURVEY OF LINWOOD H. HIGGINS AND HERBERT A. WALDRON, BY RICHARD HARTHORN, DATED OCTOBER 8, 1993. PROPERTY MONUMENTATION NEAR BEECH RIDGE ROAD AND GORHAM ROAD WERE LOCATED TO THE AERIAL SURVEY INFORMATION INTO THE BOUNDARY INFORMATION. NO FURTHER BOUNDARY WORK HAS BEEN COMPLETED. THE BEARINGS SHOWN HEREIN HAVE BEEN ROTATED ONTO THE STATE COORDINATE GRID. THE BOUNDARY INFORMATION FOR PROPERTY SHOWN HEREIN AS "THE FISH AND GAME PARCEL" LOCATED SOUTHERLY OF THE NONESUCH RIVER IS BASED SOLELY UPON A PLAN OF LAND TITLED "PROPOSED CONSERVATION EASEMENT FOR SCARBOROUGH FISH AND GAME" DATED THROUGH MARCH 23, 2007 BY TICOPIS ASSOCIATES.
10. THE TEST PITS SHOWN HEREIN IN POINT RANGE 142-78 ARE APPROXIMATE. THEY WERE LOCATED WITH HANDHELD GPS AND SHOULD HAVE AN ERROR UNDER 50 FEET.
11. THE MONITORING WELLS HEREIN WERE GPS OR INSTRUMENT LOCATED AND ARE RELATIVE TO THE AERIAL WORK HORIZONTALLY AND VERTICALLY.
12. ALL OTHER INFORMATION HEREIN WAS PROVIDED BY PHOTOGRAMMETRIC TECHNIQUE.
13. A PRE-CONSTRUCTION MEETING BETWEEN THE SCARBOROUGH ENGINEERING DEPARTMENT AND THE DEVELOPER/CONTRACTOR IS REQUIRED PRIOR TO THE START OF ANY WORK.
14. CONTRACTOR SHALL CLEAN, REMOVE DEBRIS & SEDIMENT DEPOSITED ON PUBLIC STREETS (BEECH RIDGE ROAD) DUE TO SITE WORK ACTIVITIES. THIS WORK SHALL INCLUDE REGULAR GREETINGS, APPLICATION OF SOIL STABILIZER WITH DUST SUPPRESSANT, MAINTENANCE OF STONE STABILIZATION PAD & OTHER WORK AS NECESSARY TO KEEP ACCESS ROAD & BEECH RIDGE ROAD FREE OF DEBRIS, SEDIMENT & TRACKED MATERIALS.



Maine Wetlands Bank and Larrabee Farms for compensatory mitigation for this project appears appropriate.” However, the U.S. Army Corp of Engineers commented that compensatory mitigation may need to increase by 1.0 credits to meet U.S. Army Corp of Engineers requirements. A meeting with the U.S. Army Corp of Engineers held in February 2009 resulted in no additional mitigation requirements and the additional 1.0 credit requirement was eliminated. The U.S. Army Corps of Engineers published a Public Notice to conduct work in waters of the U.S. on March 31, 2009. A copy of the Public Notice can be found in Appendix D.

4.3 CUMULATIVE IMPACTS

Analysis of the cumulative overall impact of a Proposed Action Alternative and the consequences of subsequent related actions is required to determine the significance of the impact on the environment resulting from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of the actions’ originator.

Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time. Cumulative impact analysis considers connected actions, projects related and dependent upon the completion of the proposed airport project; cumulative actions, reasonably foreseeable independent projects; and similar actions or projects having a common geography or timing that provide a basis for considering their impact together with the proposed airport project.

As discussed within Chapter Three, the airport has recently undertaken numerous improvement projects:

- **Airport Development**

Recent past on-site airport development includes:

- A 400-foot Extension of Runway 11-29
- Runway 11-29 Safety Area Construction
- Rehabilitation and Strengthening of Runway 11-29 including Snow Shoulders
- Rehabilitation and Widening of Taxiways A, B, C and D including Snow Shoulders
- Relocation of the Perimeter Access Road
- Rehabilitation of Westbrook Street including New Drainage
- A remote parking lot to the west of the Turnpike

Current development projects underway at Portland International Jetport include:

- Construction of a vehicle parking garage east of the terminal building
- Construction of apron and buildings in the south general aviation area

- **Off-site Development**

Off-site development which has occurred over the past decade in the vicinity of the Portland International Jetport includes the construction of the new Boy Scout Headquarters, the Congress Street interchange, Johnson Road relocation, the Jetport Plaza Access Road built by the City of South Portland, and

the ongoing renovations and improvements to the Brick Hill Development and the Southern Maine Juvenile Facility.

Anticipated future off-site development in the vicinity of the Portland International Jetport includes the DOT's construction of a new lane on I-295 between Exits 4 and 3 southbound (construction underway Summer 2009), DEP/EPA water quality and stormwater improvements within the Long Creek Watershed, and the Maine Turnpike Authority's proposed widening of the turnpike. This is an area of active commercial, industrial, and residential development; therefore, there will undoubtedly be other, as yet unidentified, projects undertaken in this area in the future.

DeLuca-Hoffman Associates, Inc. contacted the Cities of Portland, South Portland, and Westbrook and the MeDEP to inquire of other proposed developments in the vicinity of the Portland International Jetport. Projects identified were a potential hotel project near National Semiconductor in South Portland and the possibility of a loop road extending off Aviation Boulevard into the Brick Hill Development, development of Exit 4 as part of the Veterans Memorial Bridge Replacement, and a potential pedestrian bike bridge over Long Creek south of Exit 4.

Proposed Action Alternative

The proposed airport improvements would allow the airport to safely accommodate existing airport users and meet FAA safety standards and Transportation Security Administration (TSA) security requirements. The proposed and recently completed airport improvements are consistent with the recently completed airport master plan.

Resource issues that are appropriate for analysis under a cumulative impact assessment are addressed below. Much of the discussion contained within the following sections is also reflected within the various impact analyses. The discussions have been consolidated within this section to summarize the qualitative cumulative impact analysis which was completed for the project.

BIOTIC RESOURCES

On November 15, 2007 pursuant to the *Endangered Species Act* and the Fish and Wildlife Coordination Act, the USFWS provided the Portland International Jetport with comments relating to the potential occurrence of the New England cottontail, a candidate for federal ESA listing. In addition, based on anticipated necessary wetland impacts, the USFWS also suggested an interagency (IA) site visit for these impact locations. An IA site visit was held on December 12, 2007, and later that winter near the end of Runway 29 PWM confirmed the presence of the New England cottontail, which under the Maine Endangered Species Act (MESA) is identified as endangered by the Maine Department of Inland Fisheries and Wildlife (MEIF&W). On January 14, 2009, the USFWS announced that the National Fish and Wildlife Foundation awarded \$290,000 in grants to several agencies and organizations that support cooperative projects to bring back the New England cottontail in New Hampshire and Maine. Pursuant to MESA, throughout 2008 and 2009, the Portland International Airport actively coordinated with the USFWS and MEIF&W in the development and approval of an Incidental Take Plan to relocate New England cottontails from the Jetport to an off-site recovery location selected to prevent, minimize and mitigate individual and cumulative effects on this species from the proposed development addressed by this EA.

NATURAL RESOURCES AND ENERGY SUPPLY

The Proposed Action Alternative would accommodate existing use of the airport and is not designed to increase the number of operations; therefore, an increase in use of energy or natural resources over current trends is not expected as a result of this project. Projected demands for energy and natural resources will increase commensurate with the growth of population. The Proposed Action Alternative and reasonably foreseeable projects would account for a portion of the projected growth and, therefore, would not result in a cumulative impact on energy and natural resources.

LIGHT EMISSIONS AND VISUAL IMPACTS

The Runway 18-36 extension, Runway 18 and Runway 35 visual navigational aid relocations, taxiway additions, relocated terminal vehicle parking, terminal addition, and other development projects in the area will also likely introduce new lighting to the area. However, no cumulative impacts due to light emissions are reasonably foreseeable.

CONSTRUCTION IMPACTS

Construction activities result in temporary impacts with recovery of the natural and social environments after construction is completed. Issues of more long-term cumulative impacts to the natural, social, economic, and cultural environments are discussed previously under this section. During construction, temporary construction-related increases in noise levels, fugitive dust, erosion and sedimentation, and traffic congestion are anticipated with recovery upon completion of construction.

SOCIOECONOMIC AND SECONDARY (INDUCED) IMPACT

The Proposed Action Alternative does not result in the displacement of residences, businesses, or agricultural operations, or result in the division or disruption of established communities. No disruption of orderly or planned development is anticipated as a result of the Proposed Action Alternative. The proposed development does not increase capacity and is not anticipated to result in increased aviation activity.

WATER QUALITY AND WETLANDS

During the process of obtaining and modifying permits, review by agencies having jurisdiction over water supply and quality issues would be conducted. The permit programs implemented by these agencies take into account the cumulative impact of actions and projects on the regulated resources. Periodic program reviews are conducted to ensure that the loss of regulated resources authorized through the permit programs do not constitute an individual or cumulatively unacceptable impact. The Proposed Action, as well as all reasonably foreseeable actions, will be subject to this regulatory review process, as applicable.

The United States Army Corps of Engineers (USACE) states that a total of 407 permit actions have been recorded within a five-mile radius of the Jetport since 1979. The USACE notes that, for the most part, impacts to aquatic resources have been minimal and eligible for general permits. Authorized work has included small to moderate scale residential, commercial, and industrial developments, individual busi-

nesses, dredging, marinas, piers, floats, utility lines, transportation projects, schools, and golf courses. Furthermore, the USACE notes that to date the individual long-term and cumulative impact of these projects on aquatic resources has been minimal, particularly with project specific compensatory mitigation. Future proposals for similar work will be evaluated on a case-by-case basis by the Corps and the interagency review team in order to assess their individual and cumulative impact relative to the proposed project and any mitigation requirements.

HAZARDOUS MATERIALS, POLLUTION PREVENTION, AND SOLID WASTE

There is no indication that any development projects identified for this discussion will have an impact on hazardous materials or solid waste. No agencies indicated concerns regarding cumulative impacts to these resources.

No Action

The No Action Alternative does not involve any improvements to the existing airport facility. The result of the No Action Alternative is that water quality impacts could increase as the deicing fluid collection and pretreatment facility would not be constructed. The MeDEP requires the City of Portland to complete this improvement by November 2010 to maintain compliance with the airport's MSGP stormwater permit.

Chapter Five

PREPARERS

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PREPARERS

Environmental Assessment
Portland International Jetport

Persons responsible for preparation of this Environmental Assessment document and significant supporting background analysis and materials are listed below.

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