7. Mitigation and Measures to Avoid and Minimize Impacts

This chapter describes mitigation measures proposed to address significant impacts identified for each resource in Chapter 5. FAA Order 5050.4B, Chapter 1, Section 9, defines threshold of significance as:

The impact level or “threshold” that the responsible FAA official uses to determine if the environmental effects of a proposed action or its reasonable alternatives would cause significant environmental effects. If FAA has established a threshold for a resource, the responsible FAA must use that threshold to determine impact severity and context.

Table 7-1 of FAA Order 5050.4B and Appendix A of FAA Order 1050.1E, Change 1, identify thresholds of significance established by FAA and factors to consider in assessing the potential impacts of airport actions. The FAA Environmental Desk Reference for Airport Actions also provides supplemental thresholds not covered in Orders 5050.4B and 1050.1E, Change 1.

Impacts were identified as significant based on these guidelines. For the proposed project, the only significant impact identified requiring mitigation is the unavoidable impact of filling 2.22 acres of jurisdictional wetlands, as discussed in Section 5.10, Wetlands. Mitigation for impacts identified as significant are discussed in Section 7.1.

Measures to avoid and minimize impacts that do not exceed a defined NEPA threshold of significance are discussed in Section 7.2. These measures to avoid and minimize less than significant impacts include standard Port practices and best management practices.

7.1 Required Mitigation

Compensatory mitigation would be provided for all unavoidable wetland impacts and would involve restoring historic wetlands and enhancing existing wetlands at an offsite location at a ratio of 1:1 impact to mitigation for restoration and at a ratio of 3:1 for enhancement. The restored and enhanced wetlands would provide several wetland functional characteristics and values that would exceed the relatively low functions and values of the impacted wetlands. They would be higher functioning in characteristics of native vegetation, wildlife habitat, fish habitat, flood water storage, sediment retention, and possibly removal or storage of nutrients.

The compensatory wetland mitigation site is located within the Jackson Bottom Wetland Preserve, a large wetland complex in the Tualatin River floodplain (see Wetland Mitigation Plan in Appendix C.6). The mitigation project would result in the restoration of former wetlands and enhancing existing wetlands within the larger habitat unit of the wetland preserve. The Port of Portland, Oregon Department of Transportation, City of Hillsboro, and Clean Water Services developed an intergovernmental agreement (IGA) which would allow the parties to work cooperatively to restore and enhance wetlands at the Jackson Bottom Wetland Preserve for the purpose of generating wetland and upland mitigation credits required under federal, state, and local regulations. A copy of the final IGA is included in Appendix C.6. The IGA was finalized
and signed in July 2009. The City of Hillsboro and CWS both own property at the Jackson Bottom Wetland Preserve, but the compensatory wetland mitigation will occur entirely on the City of Hillsboro’s property. The wetland mitigation project would meet all wetland mitigation requirements for this project.

The planned mitigation would restore former wetlands by removing piles of material that were placed in Jackson Bottom Wetland Preserve in the early 1980’s when a large water quality treatment pond was excavated on the preserve. Removal of the material would restore the original hydrology and surface of hydric soil in the floodplain of the Tualatin River. The project would also enhance degraded wetlands on the site by modifying the hydrology by excavating a swale throughout the existing wetland area and planting native trees and shrubs. The entire mitigation site would be planted with emergent and woody vegetation to create emergent, scrub shrub, and forested wetland.

Monitoring and maintenance of the compensatory wetland mitigation site that is proposed for use by the HIO Parallel Runway 12L/30R Project would be the responsibility of the City of Hillsboro as agreed upon in the IGA for the mitigation project (see Appendix C.6). The Port of Portland and ODOT, as permit holders, would be responsible for ensuring that the City is monitoring and maintaining the site to satisfy any permit conditions.

7.2 Measures to Avoid and Minimize Impacts

The following subsections provide a summary of the measures to avoid and minimize impacts for categories where they are identified in Chapter 5. As noted above, the following measures address impacts that do not exceed a defined NEPA threshold of significance. These measures include standard Port practices and best management practices, as well as measures required by local jurisdictions or resource agencies that are standard permit requirements. These measures are also described following the impact analysis for each discipline in Chapter 5.

No avoidance or minimization measures are needed for the following categories:

- Compatible Land Use
- Section 4(f) Resources
- Socioeconomic Impacts, Environmental Justice, and Children’s Health and Safety Risks
- Secondary (Induced) Impacts
- Floodplains
- Farmlands
- Light Emissions and Visual Impacts

Noise

No noise-sensitive areas are within the DNL 65 or greater contour. The DNL 65 noise contour does not go beyond the Airport boundary. No noise-sensitive area would experience a DNL 1.5-dB increase at or above DNL 65 as a result of Alternative 2 or 3; thus, no mitigation is required. Although no residential or other noise-sensitive land uses are projected within DNL 65 or
higher contours for existing conditions, or any of the alternatives under consideration, the Port will continue efforts to minimize noise impacts to the Hillsboro community. Currently, a preferential runway use policy is practiced, limiting unnecessary overflight of residential areas to the south and west of the Airport. A formal engine run-up policy has been established to direct turbine powered aircraft to specific locations on the airfield for run-up activity; the program also restricts the number of run-ups conducted as part of scheduled maintenance between the hours of 10 p.m. and 7 a.m. Helicopter training flights are conducted in patterns defined by clearly visible landmarks; they are typically used only during daylight hours, and usage of the patterns is prioritized by lowest over flown population first.

Future program elements incorporating GPS-based navigational procedures designed to guide aircraft over less populated areas will be added when possible.

The Port’s standard construction specifications state that the construction activity must comply with local noise ordinances. Operation of construction equipment in the city of Hillsboro is prohibited without a noise variance during evening or nighttime hours (7 p.m. to 7 a.m.) or on Sundays or legal holidays.

**Historical, Architectural, Archeological, and Cultural Resources**

Archaeological sites and, in particular, Indian burials are protected under Oregon state law (ORS 97.740-97.760, 358.905-358.955, ad 390.235), and by federal regulations where federal funds or permits are involved (e.g., 36 CFR Part 800, 43 CFR 7.4, 43 CFR 10.4). Disturbance of graves is specifically prohibited, even through accidental discovery and even if reviewing agencies have concurred that a specific project is in compliance with applicable state and federal regulations. If archaeological resources or potential human remains are encountered during the Parallel Runway 12L/30R Project, all earth disturbance in the vicinity of the find will be halted immediately, in accordance with state and federal laws, and the FAA and Port will be notified. A qualified archaeologist will be consulted to investigate and evaluate the discovery and to recommend subsequent courses of action in consultation with the FAA, the Port, the Oregon SHPO, and the appropriate tribes.

**Air Quality**

Although construction emissions would not require mitigation, measures to minimize construction emissions would include incorporating the provisions of FAA Advisory Circular 150/5370-10C, Standards for Specifying Construction of Airports, in project specifications.

**Water Quality**

The permanent water quality treatment BMPs would be vegetative filter strips adjacent to all new impervious surfaces, as specified in Clean Water Services’ R&O 07-20, Section 4.07, and City of Hillsboro’s Ordinance No. 2808, Article VI. Minimum widths of the vegetative filter strips, designed in accordance with the above referenced requirements, are 9 feet for the runway, 6.4 feet for the taxiway, and 10 feet for Charlie Helipad. Current plans call for filter strip widths of 17 to 77 feet for the runway, 9 to 90 feet for the taxiway, and 20 feet for Charlie Helipad. The proposed BMPs substantially exceed minimum requirements, and treatment removal efficiencies should exceed those in the pollutant modeling.
Construction BMPs are expected to include, but not be limited to, sediment fences, wattles, inlet protection, and ground protection measures such as mulch and hydro-seeding. Specifications for erosion and sediment control would be performance-based, which requires that the contractor prevent the release of sediment from the project regardless of the BMPs specified in the plans. If the specified BMPs prove inadequate, then additional prevention measures must be put in place. In addition, incorporating the provisions of Advisory Circular 150/5370-10C, Standards for Specifying Construction of Airports, in project specifications would minimize water quality impacts.

**Fish, Wildlife, and Plants**

The layout for the proposed new facilities has been carefully analyzed to avoid stream and vegetation impacts to the greatest extent possible, thereby minimizing impacts on vegetation, fish, and wildlife that use those habitats. Layouts that were analyzed consisted of various distances between the existing runway 12/30 and the proposed parallel runway, and various positions of the proposed helipad relative to the parallel runway.

Impacts on fish, wildlife, and plants would be further minimized by keeping the construction footprint as small as possible while enabling construction that meets all requirements for HIO’s operation. Measures to avoid and minimize the possibility of impacts on fish during construction include the following:

- Construction BMPs would be implemented to avoid or effectively minimize erosion and sedimentation from exposed soils during construction.

- The project would be designed to include BMPs to effectively control and manage both stormwater quality and stormwater quantity over the long term. Stormwater BMPs would be designed to effectively limit flow from new impervious surface to closely match existing baseline conditions. Subsequent study and analysis of the stormwater quality and quantity mitigation would also include an analysis of loading and flow contributions during smaller, more normal flow events compared to the 10-, 25-, and 100-year events included in Appendix C.4, Water Quality.

**Wetlands**

The layout for the proposed new facilities has been carefully analyzed to avoid wetland impacts to the greatest extent possible, thereby ensuring that wetland impacts are minimized. Layouts that were analyzed consisted of various distances between the existing runway 12/30 and the proposed parallel runway, and various positions of the proposed helipad relative to the parallel runway. Wetland impacts were calculated for each layout and considered in the selection of Alternatives 2 and 3.

Impacts on remaining wetlands would be further minimized by keeping the construction footprint as small as possible while enabling construction that meets all requirements for HIO’s operation.

The construction contractor would be required to avoid and minimize unnecessary impacts on wetlands during construction. Wetlands in the vicinity of construction zones would be marked with construction fencing to ensure vehicles do not inadvertently access them.
management practices for erosion control would be used to ensure sediment from construction does not enter wetlands or other waters.

**Hazardous Materials, Pollution Prevention, and Solid Waste**

The Port has a construction waste recycling specification that sets goals for recycling construction and demolition work on Port property (see Appendix C.7).

**Natural Resources and Energy Supply**

The Port is committed to continuing its successful recycling and utilities conservation programs.