Hillsboro Airport Parallel Runway 12L/30R

Final

Supplemental Environmental Assessment

Volume 1 of 2



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U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION NORTHWEST MOUNTAIN REGION

FINDING OF NO SIGNIFICANT IMPACT and RECORD OF DECISION

FOR THE NEW PARALLEL RUNWAY 12L/30R PROJECT Hillsboro Airport, Hillsboro, Oregon

February 21, 2014

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I. Introduction

This document serves as the Federal Aviation Administration's (FAA) Finding of No Significant Impact and Record of Decision (FONSI/ROD) and provides final agency determinations and environmental approvals for the federal actions necessary to implement the Hillsboro Airport Parallel Runway 12L/30R Project proposed action, namely unconditional approval of the proposed project as depicted on the Airport Layout Plan (ALP) and potential federal funding for construction of eligible portions of the proposed project. This FONSI/ROD is based on the information and analysis contained in the Final Environmental Assessment (EA) (2010) and the Final Supplemental Environmental Assessment (Final SEA) dated February 12, 2014, attached hereto.

II. Background

Hillsboro Airport (HIO) is located in the city of Hillsboro in Washington County, Oregon, approximately 2¹/₄ miles from Hillsboro's city center and 12 miles west of downtown Portland. The Port of Portland owns and operates the Airport. HIO is the busiest general aviation (GA) airport in Oregon. The FAA's National Plan of Integrated Airport Systems (NPIAS) lists HIO as a designated GA reliever airport for Portland International Airport, Portland, Oregon.

In 2005, the Port of Portland completed a Master Plan for HIO that evaluated the Airports' capabilities and role, and forecast future aviation demand, and developed a plan for the timely development of new or expanded facilities that would enable the Airport to efficiently serve forecast demand. Among the Master Plan recommendations was the development of a new parallel runway because the airfield was operating at close to 100 percent of the airfield capacity and was expected to exceed airfield capacity in the future, as defined by Annual Service Volume (ASV).¹

The Port of Portland determined that the development of a new runway was the best option for addressing airfield capacity and sought federal funding and approval for the runway. The Port of Portland prepared an EA. The FAA independently reviewed and evaluated the EA and determined that it complied with the NEPA and related environmental requirements. The FAA accepted the HIO Parallel Runway 12L/30R² Final EA (2010) and issued a Finding of No Significant Impact (FONSI) and a decision approving amendment of the ALP on January 8, 2010. A challenge was filed in the Ninth Circuit alleging errors in the EA under NEPA and in the public process.

¹ ASV is a reasonable estimate of an airport's annual capacity. It is the annual level of traffic that results in a given level of average delay.

² Since the completion of the 2010 Environmental Assessment, the FAA has increased by one degree the compass heading numerical references to the existing and proposed new parallel runway at Hillsboro Airport. Magnetic declination corrections are periodically necessary due to the rotation of the earth. For ease of reference this document retains the numerical references used in the Final EA (2010).

On August 25, 2011, the majority of the panel of the U.S. Court of Appeals for the Ninth Circuit issued an opinion remanding the matter to the FAA for further consideration. Appendix A of the Final SEA contains a copy of the Ninth Circuit's decision. The Court upheld many aspects of the FAA's environmental review, but found in the petitioners' favor with respect to the allegation that FAA had failed to discuss the impact of a third runway on aviation demand at HIO. The Court ordered the FAA to consider the environmental impact of increased demand resulting from the HIO expansion project, if any, pursuant to 40 CFR 1508.8(b).

The Court's decision and the lapse of more than three years since issuance of the Final EA (2010) triggered the need to re-examine the forecasts used to evaluate potential growth in aviation demand and activity at HIO, and to re-examine the underlying forecast methodology. For the Final SEA, the following forecasts were prepared:

- "Unconstrained" forecasts were prepared to predict expected growth in aviation activity, without regard to possible limits on growth, such as the capacity of HIO's existing facilities.
- "Constrained" forecasts were prepared assuming that growth (predicted from demographic and economic data) would be limited by the capacity of HIO's existing facilities. This is the forecast activity that would occur if the No Action alternative remained in the future.
- "Remand" forecasts were prepared specifically in response to the Ninth Circuit's finding that the standard FAA forecasting methodology might not include increases in airport activity caused (induced) by the addition of a new runway³.

The attached Final SEA was developed in response to the Court remand and considers impacts associated with minor changes in the project and changed conditions.

III. Proposed Action

The Proposed Action analyzed in the Final EA (2010) and the attached Final SEA included the following components. The FAA and the Port of Portland have made minor changes in certain components of the Proposed Action during the time between the issuance of the FONSI for the Final EA (2010) and the issuance of the Final SEA and this FONSI/ROD. These minor modifications and the Proposed Action are described below.

1. Construction of a 3,600-ft long parallel runway (Runway 12L/30R). This new runway would occupy the location of the existing Charlie Helicopter Landing and Take-Off Pad, commonly known as the Charlie Helipad, which is currently used for helicopter training operations. As noted in the Final EA (2010) and Final SEA, once the runway

³ Consistent with FAA's standard methodology, which represents a conservative approach, the unconstrained forecast in the Final Supplemental Environmental Assessment assumed no artificial or physical constraints at the airport. As such, the unconstrained forecast inherently included a portion of the demand that would be attracted to the airport because of the availability of the new runway. However, the 9th Circuit required clearer evidence that induced demand, if any, was considered in the analysis. Out of an abundance of caution and to specifically address the court's decision, the FAA prepared a remand forecast that incorporated additional activity attributable to the new runway based on the results of a pilots' survey into the unconstrained forecast.

is constructed, helicopter training flights would initially use the new Taxiway D as an interim replacement for the Charlie Helipad. The Port of Portland will request approval to amend its ALP to depict a proposed replacement Charlie Helipad as fixed-wing aircraft traffic levels make it impracticable to continue use of Taxiway D for helicopter training. The Final SEA analyzed two alternative locations for the replacement Charlie Helipad. The FAA would then issue a decision on permanent relocation based on a reevaluation of the Final SEA. The proposed new runway would be a visual runway only.

- 2. Taxiway D, a new 3600-ft taxiway parallel to and 240 feet east of the new Runway 12L/30R and connecting to the Taxiway C. Taxiway D would provide access to aircraft landing and taking off from the new Runway 12L/30R. Taxiway D was actually constructed in 2011, as that project was shown to have independent utility from the new parallel runway because it provides airfield access to the northeast quadrant of the airfield. The Port of Portland would have undertaken the taxiway whether or not it received approval to complete the runway, and the location of the taxiway did not alter the consideration of alternatives to the new runway location nor did it create the need for the new runway project.
- 3. Four runway exit taxiways to new Taxiway D.
- 4. One connector taxiway crossing from the new runway to Runway 12R/30L and providing access to the ramp area via Taxiway A3. However, based on FAA review and the Port of Portland's concurrence, this connector taxiway was deleted from the project because the taxiway connector, if constructed as proposed, may have caused runway safety issues, specifically runway incursions. As discussed in Chapter 5 of the Final SEA, the project change reduced the wetland acreage loss from 2.2 acres to 1.92 acres.
- 5. Related infrastructure, including electrical infrastructure for lighting and signage, an access roadway, and drainage facilities for new impervious surfaces, would be developed as part of the airfield improvements described above.
- 6. Installation of Precision Approach Path Indicators (PAPIs). Originally, the proposed new runway did not include navigational aids. Since 2010, the Port and the FAA have proposed to include the installation of PAPIs on both ends of the new runway. A PAPI is a visual aid that provides guidance information to indicate whether the pilot has the aircraft above or below the required runway approach path. The lights would consist of a single row of two to four lights, radiating high intensity red or white beams. A PAPI is generally located beside the runway approximately 600 feet beyond the landing threshold of the runway (interior to the airfield). The lights would be installed such that the light beam would be positioned to project 20 feet above the most critical obstruction in the area. The installation of the PAPI was analyzed in the SEA.
- 7. Establishment of approach and departure procedures to the new runway. These procedures would include standard instrument departures (SIDs) that would use

existing navigational aids and the new PAPIs, as well as include takeoff minimums and obstacle clearance procedures.

IV. The Agency Actions and Approvals

The FAA actions, determinations, and approvals necessary for this project to proceed include:

- Unconditional approval of the Proposed Project as shown on the ALP
- A determination that the environmental analysis prerequisites associated with any future Airport Improvement Program (AIP) funding application have been fulfilled pursuant to 49 U.S.C § 47101.

In addition to ALP approval and determination of eligibility for potential future funding, the FAA would be required to develop and implement procedures to the new runway. These procedures would include SIDs that would use existing navigational aids and the new PAPIs, as well as include takeoff minimums and obstacle clearance procedures.

V. Purpose and Need for the Proposed Action

The purpose of the proposed action is to reduce congestion and delay at HIO in accordance with planning guidelines established by the FAA. The proposed action is needed because the HIO airfield is currently operating at close to 100 percent of ASV and current Airport activity levels exceed FAA capacity planning criteria. As stated in Chapter 4 of the Final SEA, without the new runway, HIO would operate between 83% and 94% of ASV within the 2021 period. FAA guidance recommends planning for additional runway capacity when runway operations approach 60-75% ASV.

Due to the Court's remand and the lapse of more than three years since the Final EA (2010) was issued, FAA re-examined the forecasts used to evaluate potential growth in aviation demand and activity at HIO and to re-examine the underlying forecast methodology. Once the new forecasts were developed (*Chapter 3, Forecasts – Supplemental Environmental Assessment*), the need for the project and the original purpose as documented in the Final EA (2010) were re-examined. As the Final SEA notes (*Chapter 4, Project Need and Timing – Supplemental Environmental Assessment*), while activity levels are lower than anticipated in the Final EA (2010), the new forecasts, projected delays, and FAA demand/capacity criteria, re-affirm the need for the project.

VI. Alternatives

The alternatives carried forward for detailed environmental analysis in the Final EA (2010) were:

• Alternative 1 – No Action. NEPA requires consideration of the No Action Alternative. 40 CFR 1502.14(d) (agencies shall "include the alternative of no

action". This alternative also serves as the basis of comparison for other reasonable alternatives.

- Alternative 2 Proposed Runway 12L/30R with Charlie Helipad Option A. This alternative includes the improvements described in Chapter 1 of the Final EA and Section III above. In this alternative, the relocated Charlie Helipad would be located at the southern end of the area available for siting.
- Alternative 3 Proposed Runway 12L/30R with Charlie Helipad Option B. This alternative differs from Alternative 2 only in the location of the relocated Charlie Helipad. In this alternative, the relocated Charlie Helipad would be located at the northern end of the area available for siting.

In the Final SEA, Alternatives 2 and 3 both include PAPIs at each end of the proposed runway and associated flight procedures. Both no longer include the connector taxiway crossing between the two parallel runways providing access to the ramp via Taxiway A3.

After careful consideration of the analysis of the impacts of the various alternatives considered, and of the ability of these alternatives to satisfy the identified purpose and need for the proposed project; and after review and consideration of the testimony at the public hearing for the original EA and the subsequent public hearing for the SEA, and of comments submitted in response to the original Draft EA and the Draft SEA, of coordination with federal, state, and local agencies; and after considering federal policy, the FAA hereby selects the proposed Runway 12L/30R which is the same under either Alternative 2 or 3, as the Preferred Alternative in the SEA for federal support.

VII. Affected Environment

HIO is located in the city of Hillsboro in Washington County, Oregon, approximately 2¼ miles from Hillsboro city center and 12 miles west of downtown Portland. The Airport and surrounding Port-owned property occupy approximately 965 acres of land. The Airport is generally bound by NE Brookwood Parkway to the east, NE 25th Avenue to the west, NW Evergreen Road to the north, and NE Cornell Road to the south. While the Airport is located almost entirely within the City of Hillsboro, it is located on the northern boundary of the city, and Port-owned lands north of NW Evergreen Road are within unincorporated Washington County.

FAA Order 5050.4B, Paragraph 706e, requires an Environmental Assessment to include an Affected Environment chapter that "...describes only those environmental resources the proposed action and its reasonable alternatives, if any, are likely to affect" (see also FAA Order 1050.1E, Change 1, paragraph 405e). *Chapter 5, Affected Environment – Supplemental Environmental Assessment* discusses changes in the affected environment that have occurred since the Final EA (2010) and subsequent Court of Appeals' remand order.

Based on the discussion of environmental effects in the Final EA (2010), those environmental factors that would <u>not</u> be affected by the new forecasts, where there has been no notable change in conditions, and would therefore not require re-evaluation as discussed in *Chapter 5* (*Affected Environment*) are:

- DOT Section 4(f)
- Floodplain Impacts
- Farmlands
- Fish, Plants and Wildlife
- Hazardous Materials, Pollution Prevention, and Solid Waste
- Historical, Architectural, Archaeological, and Cultural Resources
- Light Emissions and Visual Impacts
- Socioeconomic Impacts, Environmental Justice, and Children's Health and Safety Risks
- Water Quality
- Wetlands

VIII. Environmental Consequences

Chapter 6, Environmental Consequences, of the Final SEA, provided an explanation of the regulatory requirements, methodology, and results consistent with the requirements of FAA Orders 1050.1E, Change 1, and 5050.4B. Below is a summary of the findings in each of the remaining resource categories relevant to the impacts of the three forecast conditions.

Aircraft Noise and Land Use Compatibility – No residential or other noise-sensitive land uses would be within the DNL 65 contours and the updated activity of the Unconstrained, Constrained, and Remand forecasts are between 12 and 22 percent lower than the activity associated with the largest contour evaluated in the Final EA (2010).

Air Quality – The higher activity levels associated with the Remand Forecast relative to the No Action (Constrained Forecast) result in slightly greater emissions even though delay-related emission reductions would occur. However, the project would remain *de minimis* in all years with any of the new forecasts, as the project-related emissions would be well under the 100 ton *de minimis* threshold for carbon monoxide emissions. Thus, no significant adverse air quality impacts would be expected.

Climate - Based on the EDMS evaluation of aircraft fuel burn and calculation of CO_2 emissions, the Remand Forecasts (with project) would generate 364 tons of CO_2 per year in 2016, decreasing to 61 tons by 2021 as compared to the Constrained Forecast (no action). For context, the FAA's Terminal Area Forecast (TAF) estimates a growth of operations of approximately 5 percent. According to the US Environmental Protection Agency's (EPA) most recent inventory, there were 148.4 million metric tons of CO_2 per year generated by aviation sources in 2012. Using the TAF's estimation of growth, and conservatively applying that growth to emissions, approximately 156.4 million metric tons of CO_2 might be generated by all aviation sources in 2021. See Final SEA Chapter 6d for more details.

Secondary (Induced) Impacts – The 2021 Remand Forecast (the highest of the 3 forecasts analyzed) shows 254,030 operations (Chapter 3, Table 3-2) compared to 260,957 operations in

2008 (Final SEA Appendix B, Table 3-1). With the Remand Forecast assumptions, approximately 11,350 additional operations per year might occur due to the new runway at HIO (about 31 operations per day, or 15 arrivals and 15 departures per day). Assuming conservatively that each operation has 3 individuals occupying the aircraft, this would generate approximately 45 new customers (15 arrivals or departures times 3 persons per aircraft) to the Airport area on an average day. Given the anticipated population growth of the area unrelated to the Airport, it is unlikely that this small number of additional customers would cause additional businesses to be located in the Airport vicinity. Although the economic activity in the area has increased beyond what was originally anticipated, that is happening for reasons independent of the proposed project. The anticipated activity level associated with the new forecasts, including the Remand Forecasts, is so low that the proposed project would not be reasonably expected to give rise to appreciable "induced or secondary impacts" in the form of development or economic activity or any resulting environmental consequences in the Airport environs.

Cumulative Impacts – The Final EA (2010) addressed the cumulative effects of past, present, and reasonably foreseeable future actions. The Final EA (2010) concluded that the effects of the proposed project would not add to past, present, and future conditions to create significant cumulative environmental impacts. The SEA re-analyzed the cumulative environmental impacts of the proposed project and the new forecasts. In addition, the Final SEA analysis included projects not contemplated in the Final EA (2010) such as additional navigation aids and associated flight procedures for the proposed new runway. Minor cumulative impacts include increased impervious surface and stormwater runoff and potential wetland loss. The analysis concludes that no single impact, even when considered with past, present and future actions, represent a significant impact that cannot be mitigated.

IX. Mitigation

In the FONSI, the FAA required the sponsor to obtain a 404 wetland permit and to implement the conceptual wetland mitigation proposal in the Final EA (2010). The Final EA (2010) and FONSI indicated that the proposed project would impact approximately 2.2 acres of wetland requiring a permit. In addition to these wetlands, 0.09 acre of other regulated waters would be impacted, as noted in the Final EA (2010). These other regulated waters are excavated roadside ditches located along the roadways to convey stormwater. These ditches range from 2 to 4 feet wide but do not convey water wider and deeper than 1 foot.

In July 2010, the Port of Portland requested a permit modification because the project design was changed to eliminate the connector taxiway crossing Runway 12R/30L as explained in Section III above. As a result of this project change, the proposed project would result in permanent loss of 1.92 acres of wetlands, instead of the 2.2 acres noted in the Final EA (2010). The US Army Corps of Engineers granted the request to modify the wetland permit to reflect this change in the project. The airport sponsor has completed the wetland mitigation measures at the Jackson Bottom Wetlands Preserve.

No other mitigation measures are proposed.

X Public Involvement

Public participation occurred throughout this SEA process. The FAA published the Draft SEA on March 15, 2013. A Notice of Availability was published in local newspapers and on the Airport website. A public hearing was held on April 17, 2013. A comment period was provided from March 15, 2013 to April 19, 2013. Sixty-five groups of comments were received during the public comment period. The comments included, but are not limited to, issues related to air quality and lead emissions, home values, helicopter traffic patterns, and noise. Some of these resulted in changes or clarifications to the text in the Draft SEA. These changes were incorporated into the Final SEA. Responses to the comments received during the public comment period are included in Appendix G of the Final SEA.

The Draft SEA was made available for review on the Airport's website, the Hillsboro Main Library, the Hillsboro Shute Park Branch, Hillsboro Civic Center, Port of Portland Headquarters, and the Airport office. The availability of the FONSI/ROD and Final SEA was noticed in the local newspaper and both documents will be posted on the Airport's website.

XI. Agency Findings

The FAA makes the following determinations for this project based upon a careful review of the attached Final SEA, comments on the original EA and Draft SEA, the supporting administrative record, and appropriate supporting information.

The following determinations are prescribed by the statutory provisions set forth in the Airport and Airway Improvement Act of 1982, as codified in 49 U.S.C. Sections 47106 and 47107.

a. <u>The project is reasonably consistent with existing plans of public agencies for</u> development of the area surrounding the airport (49 U.S.C. 47106(a)(1)).

The determination prescribed by this statutory provision is a precondition to agency approval of project grant funding applications. Coordination regarding this proposed project has taken place between federal, state, and local agencies. The proposed project is not in conflict with any local planning goals or laws. The Port of Portland has assisted in drafting and provided support to the City of Hillsboro in the adoption of zoning laws and other land use controls concerning the Airport. The City of Hillsboro Airport Use ("AU") Zone (Hillsboro Zoning Ordinance, No. 1945: Vol. 1, Section 135A) applies to the Airport property. The specific purpose of the zone is "to encourage and support the continued operation and vitality of the Hillsboro Airport by allowing Airport and aviation-related commercial, industrial and recreational uses in accordance with state laws." The purpose of the Airport Safety and Compatibility Overlay ("ASCO") Zone is to "establish compatibility and safety standards to promote air navigational safety and reduce potential safety hazards for persons living, working or recreating near the Hillsboro Airport, thereby encouraging and supporting its continued operation and vitality." These zoning ordinances work together to ensure that airport development and operations are consistent with state law and are compatible with

surrounding uses. Furthermore, the Port of Portland and City of Hillsboro meet quarterly. In addition, Oregon Revised Statute 836 requires the Oregon Department of Aviation to establish rules to ensure compatibility between airport development and operations and surrounding land uses. The zoning ordinances discussed above comply with those rules. Evidence of public and agency coordination can be found in Appendix G of the Final SEA.

b. The interests of the community in or near which the project may be located have been given fair consideration (49 U.S.C. 47106(b)(2)).

The determination prescribed by this statutory provision is a precondition to agency approval of airport development project grant funding applications. Discussions within the community concerning the level of required improvements to the airport contributed to the lengthy environmental process. Chapter 5.5 of the Final EA (EA) and Chapter 5 of the Final SEA demonstrate that the proposed improvements will not cause long term economic disruption or division to the community, will not impede its long term orderly development, and is not in conflict with the comprehensive planning and goals of the area surrounding HIO.

The Draft SEA was provided to the public and governmental agencies for review and comment on March 15, 2013. Furthermore, a public hearing was held on April 17, 2013 to provide an additional opportunity for persons to comment on the proposed development. Appendix G of the Final SEA contains the public comments and the agency's responses to comments.

c. <u>The airport sponsor has taken or will take actions to restrict land uses in the airport vicinity, including adoption of zoning laws, to ensure the uses are compatible with airport operations (49 U.S.C. 47107(a)(10)).</u>

The determination prescribed by this statutory provision is a precondition to agency approval of airport development project grant funding applications. As detailed in the letter from the Port of Portland to Secretary Anthony Foxx (Appendix H, Final SEA), the Port, in cooperation with the City of Hillsboro has placed restrictions and controls on surrounding land uses in order to ensure compatibility now and in the future. The requirements establish compatibility and safety standards to promote air navigational safety and reduce potential safety hazards for persons living, working or recreating near the HIO.

d. <u>Certification from the airport sponsor that it has provided an opportunity for a public hearing [49 U.S.C. 47106(c)(1)(A)(i)].</u>

The determination prescribed by this statutory provision is a precondition to agency approval for grant funding applications for airport development projects involving the location of a new airport or new runway or a major runway extension. The airport sponsor issued a Notice of Public Hearing and Availability of the Draft SEA for public review and comment (Appendix G of Final SEA). The public hearing was held on April 17, 2013 as detailed in the notice as detailed in the notice. The public comments received and the agency responses can be found in Appendix G of the Final SEA.

e. <u>Certification from the airport sponsor that the airport management board has</u> voting representation from the communities in which the project would be located or that the sponsor has advised communities they have a right to petition the Secretary of Transportation about a proposed project [49 U.S.C. 47106(c)(1)(A)(ii)].</u>

The determination prescribed by this statutory provision is a precondition to agency approval for grant funding applications for airport development projects involving the location of a new airport or new runway or a major runway extension. The airport sponsor certified that the airport management board has voting representation from the communities in which the project would be located in a letter to FAA dated December 20, 2013. A copy of the certification is attached to this FONSI/ROD.

f. <u>In accordance with Executive Order 11990</u>, Wetlands, there is no practicable <u>alternative to FAA's preferred alternative</u>, and the preferred alternative includes all practicable measures to minimize resultant unavoidable harm to wetlands.

The determination prescribed by this statutory provision is a precondition to agency approval for grant funding applications for airport development projects. Chapter 5.10.3.3 of the original EA confirms that there are no practicable alternatives that would avoid or minimize all wetland impacts. The preferred alternative minimizes the impacts to the extent practicable. A design change (e.g. elimination of a connector taxiway) reduced the amount of wetlands affected from 2.2 to 1.9 acres and compensatory wetland mitigation detailed in the original EA has been approved in a permit and completed.

XII. Decision and Order

After careful and thorough consideration of the facts contained herein, the undersigned finds that the proposed Federal action, namely the Preferred Alternative, is consistent with existing national environmental policies and objectives as set forth in Section 101 (a) of NEPA and other applicable environmental requirements and is not a major federal action significantly affecting the quality of the human environment or otherwise, including any condition requiring consultation pursuant to Section 102(2)(c) of NEPA.

The FAA has carefully and thoroughly considered the facts contained in the attached SEA. Based on that information, FAA finds that the proposed action is consistent with existing national environmental policies and objectives of Section 1010(a) of the National Environmental Policy Act of 1969 (NEPA) and other applicable environmental requirements. FAA also finds that the proposed Federal action will not significantly affect the quality of the human environment or include any condition requiring any consultation pursuant to Section 102(2)(C) of NEPA. As a result, FAA will not prepare an Environmental Impact Statement.

This decision does not constitute a commitment of funds under the Airport Improvement Program (AIP); however, it does fulfill the environmental prerequisites to approve applications for grants of AIP funds for the proposed project in the future. (49 U.S.C § 47101)

Accordingly, under the authority delegated to me by the Administrator of the FAA, I approve and direct that agency action be taken to carry out implementation of the Proposed Action.

Kathryn Vernon

Regional Administrator Northwest Mountain Region Federal Aviation Administration

Date

RIGHT OF APPEAL

This FONSI/ROD constitutes a final order of the FAA Administrator and is subject to exclusive judicial review under 49 U.S.C. Section 46110 by the U.S. Circuit Court of Appeals for the District of Columbia or the U.S. Circuit Court of Appeals for the circuit in which the person contesting the decision resides or has its principal place of business. Any party having substantial interest in this order may apply for review of the decision by filing a petition for review in the appropriate U.S. Court of Appeals no later than 60 days after the order is issued in accordance with the provisions of 49 U.S.C. Section 46110. Any party seeking to stay implementation of the ROD must file an application with the FAA prior to seeking judicial relief as provided in Rule 18(a) of the Federal Rules of Appealate Procedure.

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ATTACHMENTS

PORT OF PORTLAND Possibility. In every direction.

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December 20, 2013

Ms. Sarah P. Dalton Airports Division Manager Federal Aviation Administration U.S. Department of Transportation 1601 Lind Avenue S.W., Suite 115 Renton, WA 98057-3356

Re: Hillsboro Airport Runway Project - Certification of Community Representation

Dear Ms. Dalton:

The Port of Portland is the owner and operator of the Hillsboro Airport (HIO). In cooperation with Federal Aviation Administration (FAA) regional and headquarters staff, we have completed work on a draft Supplemental Environmental Assessment, currently under review by your agency. We have been asked to provide a certification that responds to the requirements of 49 USC §47106(c)(1)(A)(ii) and Order 5050.4B, §1203(b)(2). These provisions require that in the case of a proposed new runway, an airport sponsor certify that "the airport management board has voting representation from the communities in which the project would be located or that the sponsor has advised communities they have the right to petition the Secretary of Transportation about a proposed project ..."

The "airport management board" for HIO (as well as airports in Portland and Troutdale, Oregon) consists of the nine-member Board of Commissioners of the Port of Portland. Oregon Revised Statutes, §778.205. By law, the Board of Commissioners must include at least two members who are residents of each county within the Port district. HIO is located within Washington County, and two members of the Board, Diana Daggett and Tom Tsuruta, are residents of Washington County. Ms. Daggett is a resident of the city of Hillsboro, where the airport is located.

7200 NE Airport Way Portland OR 97218 Box 3529 Portland OR 97208 503-415-6000 Ms. Sarah Dalton Airports Division Manager Federal Aviation Administration December 20, 2013

Furthermore, the Board of Commissioners has voted on the proposed runway project on at least three occasions, approving contracts for environmental review and design in 2008 and 2009, and awarding a construction contract in 2010.

As the Port's Chief Operating Officer, I certify the truth and accuracy of the preceding statements. Please contact my office if you have any questions.

Sincerel

Vince Granato Chief Operating Officer, Port of Portland

C: Patricia Deem, FAA Marla Harrison, Port of Portland Ian Whitlock, Port of Portland Port of Portland Hillsboro EDMS runs from HIO Draft Supplemental EA Note that EDMS was run for the project. Based on the fuel output of EDMS, the following was calculated: (note EDMS only captures in the LTO)

4,342,729 kg fuel No Action 2016: 4,457,883 kg fuel Remand Delta of Remand over No Action: 115,153 kg

which is 363.77 tons CO₂

No Action 2021: 4,905,733 kg fuel 4,886,345 kg fuel Remand Delta of Remand over No Action: 19,388 kg

which is 61.25 tons CO₂

Hillsboro Airport Parallel Runway 12L/30R

Final Supplemental Environmental Assessment

Prepared for the Federal Aviation Administration

Prepared by the Port of Portland

February, 2014

Samleail Responsible FAA Official

121/2014 Date

This Environmental Assessment becomes a federal document when evaluated, signed, and dated by the Responsible FAA Official.

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Chapter 1. Introduction and Background

In 2005, the Port of Portland completed a Master Plan for Hillsboro Airport that evaluated the Airports' capabilities and role, forecast future aviation demand, and developed a plan for the timely development of new or expanded facilities that would enable the Airport to efficiently serve forecast demand. Among the Master Plan recommendations was the development of a new parallel runway because the existing airfield was operating at close to 100% of the airfield capacity and would exceed airfield capacity in the future, as defined by Annual Service Volume (ASV).¹

The Port of Portland determined that the development of a new runway was the best option for addressing airfield capacity and sought federal funding and approval for the runway. The Port of Portland prepared an Environmental Assessment in compliance with the National Environmental Policy Act (NEPA) and related regulations. The Federal Aviation Administration (FAA) approved the Hillsboro Airport Parallel Runway 12L/30R² Environmental Assessment and issued a finding of no significant impact (FONSI) on January 8, 2010. A challenge was filed in the Ninth Circuit alleging errors under NEPA and of the public process.

On August 25, 2011, the U.S. Court of Appeals for the Ninth Circuit issued an opinion remanding the matter to the FAA for further consideration. **Appendix A** contains a copy of the Ninth Circuit's decision. The Court upheld many aspects of the FAA's environmental review, but found in the petitioner's favor with respect to the allegation that FAA had failed to discuss the impact of a third runway on aviation demand at Hillsboro Airport. The Court ordered the FAA to consider the environmental impact of increased demand resulting from the Hillsboro Airport expansion project, if any, pursuant to 40 CFR 1508.8(b). This Supplemental Environmental Assessment was developed in response to the Court remand.

The original Environmental Assessment noted that the proposed runway project would include the construction of a 3,600-ft long parallel runway and the following taxiways:

- Taxiway D, parallel to and 240 feet east of the new Runway 12L/30R and connecting to the Taxiway C. Taxiway D would provide access to aircraft landing and taking off from the new Runway 12L/30R.
- Four runway exit taxiways to new Taxiway D.
- One connector taxiway crossing from the new runway to Runway 12R/30L and providing access to the ramp area via Taxiway A3.

This new shorter runway would occupy the location of the existing Charlie Helicopter Landing and Take-Off Pad, commonly known as the Charlie Helipad, which is currently used for

¹ ASV is a reasonable estimate of an airport's annual capacity. It is the annual level of traffic that results in a given level of average delay.

² Since the completion of the 2010 Environmental Assessment, the FAA has increased by one degree the compass heading numerical references to the existing and proposed new parallel runway at Hillsboro Airport. Magnetic declination corrections are periodically necessary due to the rotation of the earth. For ease of reference this document retains the numerical references used in the Final EA (2010).

helicopter training operations. As noted in the original Environmental Assessment, once the runway is constructed, helicopter training flights would initially use the new Taxiway D as an interim replacement for the Charlie Helipad.³ As noted in the original Environmental Assessment, a replacement Charlie Helipad would be constructed as fixed-wing aircraft traffic levels increase to the level where continued use of Taxiway D for helicopter training activity would no longer be practicable. Two options for the Charlie Helipad are shown in **Figure 1-1**, as considered and analyzed in the original Environmental Assessment.

Additional infrastructure, including electrical infrastructure for lighting and signage, an access roadway, and drainage facilities for new impervious surfaces, would be developed as part of the airfield improvements described above. The proposed new runway would be a visual runway only and originally, the runway did not include navigational aids as a part of this action.

Since the issuance of the original Environmental Assessment, the Port and the FAA have proposed to include the installation of a precision approach path indicator (PAPI) on the new runway (both ends of the runway). A PAPI is a visual aid that provides guidance information to indicate whether the pilot has the aircraft above or below the required runway approach path. The lights would consist of a single row of two to four lights, radiating high intensity red or white beams. A PAPI is generally located beside the runway approximately 600 feet beyond the landing threshold of the runway (interior to the airfield). The lights would be installed such that the light beam would be positioned to project 20 feet above the most critical obstruction in the area. This visual aid would not affect lighting conditions to nearby light sensitive uses, as the lights would be aligned with the approach path of aircraft and optimized for viewing by the pilot (see **Chapter 5**, *Light Emissions* discussion).

In addition, based on FAA review, a connector taxiway that would have connected the new runway to the existing parallel runway was deleted from the project. No other changes were made in the proposed runway project, which is shown in **Figure 1-1**.

The Port is the project sponsor for the proposed project described above. The FAA is the lead agency for the proposed federal action. The Port has requested the following actions from the FAA:

- Unconditional approval of the Proposed Project as shown on the Airport Layout Plan (ALP).
- A determination that the environmental analysis prerequisites associated with any future Airport Improvement Program (AIP) funding application have been fulfilled pursuant to 49 U.S.C § 47101.

In addition to ALP approval and determination of eligibility for potential future funding, the FAA would be required to develop and implement approach and departure procedures to the new runway. These procedures would include standard instrument departures (SIDs) that would use existing navigational aids and the new PAPIs, as well as include takeoff minimums and obstacle clearance procedures.

³ As of March 1, 2013 (when the Draft Supplemental EA was prepared) the Taxiway was substantially complete except the striping and installation of windsocks. The taxiway has since been completed.







Figure 1-1: Hillsboro Airport Parallel Runway Project

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Chapter 2. Approach Used in Preparing the Supplemental Environmental Assessment

In response to the Ninth Circuit Court decision, the FAA determined that a Supplemental Environmental Assessment was required. Specifically, the Court's decision and the passage of time triggered the need to re-examine the forecasts used to evaluate potential growth in aviation demand and activity at Hillsboro Airport, and to re-examine the underlying forecast methodology.

The 2005 Hillsboro Master Plan forecasts assumed that there would be no difference in activity with or without the proposed runway. FAA has traditionally assumed that there would be no change in activity with the addition of a new runway at a general aviation airport, as was assumed in the original Environmental Assessment. Predicting a constrained and an unconstrained level of activity at commercial service airports is generally well established. At commercial service airports, a wide range of airports have shown that as delay reaches a certain threshold, airlines cancel flights and/or consider overflying highly congested airports. However, a standardized methodology does not exist for general aviation airports, as there is no certainty as to how private pilots might change their flight location after completion of a new runway.

For this Supplemental Environmental Assessment, the FAA considered the following alternate approaches to forecasting how airport users might respond with the availability of a new runway at Hillsboro Airport:

- 1. Attempt to replicate the approach used at commercial service airports of identifying constrained and unconstrained activity.
- 2. Conduct a survey, as commented upon by the Court, to ask pilots and aviation-related businesses how their behavior might change with the availability of a new runway.
- 3. Continuation of the original Environmental Assessment assumption that with or without the runway the same level of activity would be served.

As the third approach was used in the original Environmental Assessment and was not accepted by the Court, the FAA and Port of Portland pursued the first two options: a) creation of Constrained and Unconstrained Forecasts using Annual Service Volume as the quantification framework of the constraint; and b) the survey of pilots and aviation-related businesses in the region to determine whom might relocate to Hillsboro with the commissioning of a new runway. For purposes of this Supplemental Environmental Assessment, the Constrained and Unconstrained Forecasts are generally the same forecast approaches used in the original Environmental Assessment. The Remand Forecasts, prepared specific to the Court's commentary about pilot survey input, reflect an alternate forecast based on a local survey, which was then added to the Unconstrained Forecasts. Based on the prior discussion, the following forecasts were prepared:

- "Unconstrained" forecasts were prepared to predict expected growth in aviation activity, without regard to possible limits on growth, such as the capacity of Hillsboro Airport's existing facilities. FAA approved the unconstrained forecasts on December 12, 2012 (see **Appendix B**).
- "Constrained" forecasts were prepared assuming that growth (predicted from demographic and economic data) would be limited by the capacity of Hillsboro Airport's existing airfield facilities. This is the forecast activity that would occur if the No Action alternative remained in the future.
- "Remand" forecasts were prepared specifically in response to the Ninth Circuit's finding that the standard FAA forecasting methodology might not include increases in airport activity caused (induced) by the addition of a new runway.⁴

Consideration was then given to conditions that have changed since the original Environmental Assessment was prepared. The FAA re-evaluated the need for the project because of the new forecast information (as discussed in **Chapter 4**, *Project Need and Timing*). Finally, FAA revised its assessment of the environmental consequences of growth that might occur because of the three new forecasts, where those consequences might differ from what was identified in the original Environmental Assessment.

The original Final Environmental Assessment⁵ is incorporated herein by reference.

⁴ Consistent with FAA's standard methodology, which represents a conservative approach, the Unconstrained Forecast in the Final Supplemental Environmental Assessment assumed no artificial or physical constraints at the airport. As such, the Unconstrained Forecast inherently included a portion of the demand that would be attracted to the airport because of the availability of the new runway. However, the 9th Circuit required clearer evidence that induced demand, if any, was considered in the analysis. Out of an abundance of caution and to specifically address the court's decision, the FAA prepared a Remand Forecast that incorporated additional activity attributable to the new runway based on the results of a pilots' survey into the Unconstrained Forecast.

⁵ Note that the Final Environmental Assessment includes the Record of Decision, Final Environmental Assessment, and the Draft Environmental Assessment.

Chapter 3. Forecasts

This chapter briefly reviews the original Environmental Assessment forecasts and presents the new forecasts.

a. Original Environmental Assessment/2005 Hillsboro Master Plan Forecast

The 2005 Hillsboro Master Plan evaluated several industry standard approaches to aviation forecasts, including a linear trend line based on national general aviation trends; regression analyses based on Portland Metropolitan population, personal income, and employment trends; the constant share of U.S. active aircraft at Hillsboro Airport; the constant share of Washington County registered aircraft; and the FAA Terminal Area Forecast (TAF). Based on these forecast approaches, the Port developed a "Selected Planning Forecast" that was approved by the FAA for use in the 2005 Hillsboro Master Plan and original Environmental Assessment.

The original Environmental Assessment was prepared based on the following (**Table 3-1**) aviation demand forecasts from the 2005 Hillsboro Master Plan.

X 7		Annual Runway	Total Forecast	Percent	Average Delay	Total Aircraft Delay
Year	ASV ²	Operations 166 033	Operations °	ASV "	(minutes)	(hours/year)
2007	176,000	196,600	270,300	112%	1.2	6,200
2012	174,000	203,594	277,294	117%	2.3	7,804
2015	174,000	214,600	288,300	123%	3.6	12,900
2025	171,000	249,300	323,000	146%	6.0	24,900

TABLE 3-1

Original (2010) Environmental Assessment/2005 Hillsboro Master Plan Forecast

a ASV varies with changes in fleet mix over the forecast period.

b Runway operations = total operations less estimated helicopter training operations.

c Total forecast operations includes all activity using the runway system, as well as helicopter training operations.

d Percent ASV represents the percentage of annual runway operations relative to ASV.

Source: Original (2010) Final Environmental Assessment (Table 1-4)

b. New Forecasts

This section provides greater detail about the new forecasts used for this Supplemental Environmental Assessment. The new forecasts were prepared for the time period through year 2031 as noted in **Appendices B**, **C**, **and D**, as the standard FAA aviation demand planning horizon is the base/current year (2011) plus 20 years.

FAA determined that the period through 2021 is reasonably foreseeable for purposes of NEPA and this Supplemental Environmental Assessment. The President's Council on

Environmental Quality (CEQ) regulations and FAA guidance require that NEPA documents focus on actions and timeframes that are reasonably foreseeable; i.e. those that are likely to occur or probable rather than those that are merely possible. In the case of time periods, the FAA has typically limited the evaluation to the year of project completion and then five (5) years afterward because this period is reasonably foreseeable.

As noted in Chapter 2, the new forecasts are of three distinct types:

First, "unconstrained" forecasts were prepared in accordance with accepted FAA methodology. This type of forecast uses demographic and economic data to predict expected growth in aviation activity "unconstrained" by possible limits on growth, such as the capacity of existing airport facilities. The unconstrained forecasts are the forecasts approved by FAA, and are the type discussed in the original Environmental Assessment and reflect the level of activity associated with the "With Project" alternative. **Appendix B** *Unconstrained Forecast* provides a detailed summary of the preparation of the unconstrained forecasts for this Supplemental Environmental Assessment, as well as FAA's forecast approval letter of December 12, 2012.

Second, "constrained" forecasts were prepared as a point of comparison. Generally, this approach is used at air carrier airports that experience high levels of delay, and where activity growth begins to flatten or slow as that constraint is reached. A "constrained" forecast assumes that the growth (predicted from demographic and economic data) could be limited by the capacity of Hillsboro Airport's existing facilities at some point in the future. Unlike air carrier airports, there is no established precedent for considering constrained activity at a general aviation airport. At air carrier airports, there is historical precedent to show that when delay reaches 6 minutes, consideration of a new runway occurs, and at 15-20 minutes of delay, airlines will cancel flights and consider rescheduling activity. In extreme delay conditions, some airlines route their aircraft in a way to avoid or minimize operating at highly congested airports. However, at general aviation airports, such behavioral changes are less certain.

While a specific level of delay at a general aviation airport has not been accepted by the airport industry for purposes of defining the "constrained" forecasts, FAA guidance concerning Annual Service Volume (ASV) was used for this forecast. It assumes that as congestion and delay increase, aviation activity growth will be limited. The Constrained Forecasts are similar to the Unconstrained Forecasts until the number of operations by fixed-wing and other aircraft that would use runway surfaces (called runway activity) approaches the ASV, and the capacity constraint then affects further growth. The FAA defines ASV as "a reasonable estimate of an airport's annual capacity. It accounts for differences in runway use, aircraft mix, weather conditions, etc., that would be encountered over a year's time."⁶ It is the annual level of traffic that results in a given level of average delay. An ASV analysis allows decision makers to make a tradeoff between annual levels of traffic and acceptable levels of delay; as traffic levels grow in the analysis, the average delay level also increases. In other words, as higher delays are tolerated at an airport, the higher the level of traffic it can

⁶ U.S. Department of Transportation, Federal Aviation Administration, Advisory Circular 150/5060-5, *Airport Capacity and Delay*, September 23, 1983.

handle, as measured by the ASV.⁷ **Appendix C** *Constrained Forecast* provides a detailed summary of the preparation of the Constrained Forecasts prepared for this Supplemental Environmental Assessment.

Third, "remand" forecasts were prepared specifically in response to the Ninth Circuit's finding that the standard FAA forecasting methodology might not include increases in airport activity caused (induced) by the addition of a new runway.⁸ These forecasts are based on a survey of potential airport users (something the court suggested could be useful), and are intended to estimate additional activity related to changes in general aviation user behavior as a result of the existence and availability of a new runway, and the operational changes that runway would enable. These forecasts are discussed in detail in **Appendix D** *Remand Forecast*.

Table 3-2 lists the total aircraft operations for future demand years for all three new forecasts. The Unconstrained Forecasts do not include specific assumptions about physical, regulatory, environmental, or other impediments to aviation activity growth. **Table 3-2** also shows the Constrained Forecasts which are expected to grow at the same rate as the Unconstrained Forecasts until a timeframe beyond 2021; a difference between the constrained and unconstrained activity is likely to occur in the 2024-2026 timeframe as shown in **Appendix B** (see Table 5-1 in Appendix B) and **Appendix C** (see Table C-1 in Appendix C). In the 2024-2026 timeframe, capacity constraints would begin to influence the growth in aircraft operations at the Airport. This difference reflects the activity that the runway would enable the Airport to accommodate in those later years. At this point, the growth rates would no longer be driven by the recent growth trends or causal factors evaluated in the unconstrained forecasts; rather, the constrained rates of growth would steadily decrease until the ASV is reached.

Table 3-2 also shows the 2005 Master Plan operations forecast that was used in the original Environmental Assessment. As shown in **Figure 3-1** the actual historical growth in aviation activity (actual aircraft operations) has been less than the operations forecast in the 2005 Master Plan, which was analyzed in the original Environmental Assessment.

⁷ U.S. Department of Transportation, Federal Aviation Administration, *Future Airport Capacity Task 2*, Appendix D, Page 33, May 2007.

⁸ Consistent with FAA's standard methodology, which represents a conservative approach, the Unconstrained Forecast in the Final Supplemental Environmental Assessment assumed no artificial or physical constraints at the airport. As such, the Unconstrained Forecast inherently included a portion of the demand that would be attracted to the airport because of the availability of the new runway. However, the 9th Circuit required clearer evidence that induced demand, if any, was considered in the analysis. Out of an abundance of caution and to specifically address the court's decision, the FAA prepared a Remand Forecast that incorporated additional activity attributable to the new runway based on the results of a pilots' survey into the Unconstrained Forecast.

	Forecast (Total Annual Operations)			D.66	2005 Hillsboro
Year	Unconstrained (With Project)	Constrained (No Action)	Remand Forecasts	(Remand minus Unconstrained)	Master Plan Total Operations
2005					219,227
2007					240,735
2010					270,300
2011	214,243	214,243	214,423	0	N/A
2012					277,294
2015					288,300
2016	224,260	224,260	235,610	11,350	N/A
2021	242,680	242,680	254,030	11,350	N/A

TABLE 3-2Forecast Comparison

N/A = Not available

Data represents total annual operations and not runway operations; total aircraft operations includes the rotary wing aircraft operations that are excluded in the runway operations numbers. Appendix B, Table 5-1 lists both total aircraft operations and runway operations. Data for years 2005, 2007, and 2011 reflects actual airport activity. Years 2012 through 2021 reflect forecasts. Forecasts noted in the Appendix are rounded to the nearest 10. Numbers reported in Appendix B are rounded to the nearest 10.

Source: LeighFisher, October 2012 (Appendix B, Table 5-1)



FIGURE 3-1

The FAA believes any demand that would be attracted to the Airport because of the availability of a new runway is already included in the Unconstrained Forecasts. Inclusion of such demand in the Unconstrained Forecasts is believed to be appropriate by the FAA, as the unconstrained activity levels is estimated based on socio-economic characteristics; aviation demand is not generated by virtue of available pavement, but rather based on socio-economic

conditions, such as ownership of an aircraft, and available time. Therefore, because the Unconstrained Forecasts reflect these socio-economic characteristics, the FAA and the Port of Portland believe that it is likely the best estimate of activity with the availability of a new parallel runway.

In response to the Court's comments, the Remand Forecasts explore the effects on total airport operations that may not be included in the Unconstrained Forecasts. To assess potential changes in behavior by potential Airport users, a survey of regional pilots and aviation businesses was conducted. The survey results are documented in an attachment to **Appendix D** *Remand Forecasts.*⁹ Based on the survey of aviation users, it was estimated that 11,350 additional aircraft operations per year (see **Table 3-2**) could result from both a potential reallocation of demand in the region and the potential for growth exceeding the organic growth forecast in the Unconstrained Forecasts. The Remand Forecasts assume that some portion of the responding pilots would act upon their survey response and relocate their operations to Hillsboro once a new runway is commissioned. The Remand Forecasts incorporate the potential for additional activity related to changes in general aviation user behavior because of the existence and availability of the new parallel runway at Hillsboro Airport.

This Supplemental Environmental Assessment uses these three new forecasts to evaluate what the Court characterized as "increased" or "induced" demand that might result from the construction of a new parallel runway at the Airport.

⁹ Riley Research Associates, Port of Portland General Aviation Survey, February 2012 (see Appendix D of this Supplemental Environmental Assessment). Respondents included pilots, Port of Portland properties and tenants (Hillsboro Airport, Portland-Troutdale Airport, Portland International Airport), Non-Port aviation related businesses throughout Oregon and Washington, and regional airport representatives.

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Chapter 4. Project Need and Timing

After the new forecasts presented in the prior chapter were developed, the need for the project and the original purpose as documented in the original Environmental Assessment (Chapter 2 Purpose and Need) were re-examined. As this chapter notes, while activity levels are lower than the earlier predictions, the new forecasts re-affirm the need for the project.

The original Environmental Assessment notes that the proposed project is needed because activity levels are approaching runway capacity. The original Environmental Assessment specifically stated the need as follows:

Sections 1.1.3, Aviation Activity Forecasts, and 1.1.4, Airfield Capacity and Delay, demonstrate that the current level of activity and the mix of aircraft types at HIO exceed FAA planning criteria, which creates undesirable levels of delay as aircraft activity levels have nearly reached the capacity of the existing airfield. Forecast growth will further increase congestion and delay. ... As congestion and delay increase, the Airport's ability to serve as an attractive, safe and efficient GA reliever airport will diminish.

The proposed action is needed because the HIO airfield is currently operating at close to 100 percent of ASV and current Airport activity levels exceed FAA capacity planning criteria. Forecast activity levels will substantially exceed the ASV of the current airfield in the future with corresponding levels of congestion and delay as demand increases.

The original Environmental Assessment noted that the purpose of the project is:

... to reduce congestion and delay at HIO in accordance with planning guidelines established by the FAA. The NPIAS states: "Current FAA guidance recommends that capacity planning start when aircraft activity reaches 60 to 75 percent of an airport's capacity."

a. **Project Need**

The need for a new general aviation runway is measured by the airport's Annual Service Volume and the resulting delay that would be expected with the forecast operations.

<u>Annual Service Volume (ASV)</u>: Hillsboro Airport's current ASV is estimated at 178,000 annual aircraft operations. With the construction and operation of the new runway, the ASV is estimated to be 315,000 annual aircraft operations.¹⁰ Note that ASV is defined to include only those operations that use an airport's runway system, such as fixed wing and itinerant helicopter operations. Therefore, this document contains reference to two levels of activity (total operations and runway operations). Total aircraft operations reflect all activity using the Airport. Runway operations reflect that activity that just uses the runway system. ASV does not include operations that do not use the runways, such as helicopter training activity. Consequently, the helicopter training activity at Hillsboro Airport does not affect ASV and is not included in the calculation.

¹⁰ See Table 5-1 in Appendix B.

As shown in **Table 4-1**, the 2011 actual runway operations at Hillsboro Airport were at 83% of ASV. As noted earlier, FAA guidance recommends planning for additional runway capacity when runway operations approach 60-75% of ASV. The actual 2011 level of activity exceeds the FAA's criteria for planning for additional capacity to deal with delay.

Without the new runway, Hillsboro Airport would operate between 83% and 94% of ASV within the 2021 period.

FAA Advisory Circular 150/5060-5 identifies the average aircraft delay that occurs as airfields reach their ASV. Hillsboro Airport's 2011 levels of activity were at approximately 83% of ASV. Using the Advisory Circular delay information, the 2011 activity resulted in delays estimated from near 0.5 minute to approximately 1.6 minutes (with an average of about 1 minute). By 2021, at the forecast level of activity reaching approximately 94% of ASV, delays are estimated from 0.75 minute of delay to 2.7 minutes (averaging about 1.75 minutes), accentuating the exponential rise in delay that occurs as airfields reach their ASV.

Forecasts	2011	2016	2021				
Constrained Forecasts (No Action)							
Total Operations	214,243	224,260	242,680				
Non Runway Operations	66,521	69,190	75,590				
Runway Operations	147,722	155,070	167,090				
ASV (without the project)	178,000	178,000	178,000				
% ASV	83%	87%	94%				
Unconstrained Forecasts (With Project)							
Total Operations	214,243	224,260	242,680				
Non Runway Operations	66,521	69,190	75,590				
Runway Operations	147,722	155,070	167,090				
ASV (with the project)	178,000	315,000	315,000				
% ASV	83%	49%	53%				
Remand Forecasts (With Project)							
Total Operations	214,243	235,610	254,030				
Non Runway Operations	66,521	69,190	75,590				
Runway Operations	147,722	166,420	178,440				
ASV (with the project)	178,000	315,000	315,000				
% ASV	83%	53%	57%				

 TABLE 4-1

 Forecast Activity and Annual Service Volume (ASV)

Note: Total operations reflect all activity at the Airport. Runway operations include only that activity that uses the runways and thus excludes activity such as helicopter training operations.

Source: LeighFisher, October 2012 (See Appendix B, C, and D).

Thus, based on the new forecasts, projected delay, and FAA demand/capacity criteria, the need for the new runway is re-affirmed.

b. Project Timing

The original Environmental Assessment noted that the proposed project would be initiated in 2010 and completed in 2015. Because of the intervening litigation, this timeline was revised. No construction related to the proposed new runway has taken place. At this time, the Port anticipates construction to start on the proposed runway in 2014 and that the project could be completed in 2015. A proposed new Charlie Helipad would be completed in 2016.

Taxiway D was constructed in 2011 as that project was shown to have independent utility from the new parallel runway because it provides airfield access to the NE Quadrant of the airfield. The Port of Portland would have undertaken the taxiway whether or not it received approval to complete the runway, and the location of the taxiway did not alter the consideration of alternatives to the new runway location nor did it create the need for the new runway project. As of March 1, 2013 (when the Draft Supplemental was prepared), only the striping and wind socks have not been completed for this taxiway. However, the taxiway is now complete.

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Chapter 5. Affected Environment

Hillsboro Airport is located in the city of Hillsboro in Washington County, Oregon, approximately 2¹/₄ miles from Hillsboro city center and 12 miles west of downtown Portland. The Airport and surrounding Port-owned property occupy approximately 965 acres of land. The Airport is generally bound by NE Brookwood Parkway to the east, NE 25th Avenue to the west, NW Evergreen Road to the north, and NE Cornell Road to the south. While the Airport is located almost entirely within the city of Hillsboro, it is located on the northern boundary of the city, and Port-owned lands north of NW Evergreen Road are within unincorporated Washington County.

FAA Order 5050.4B, Paragraph 706e, requires an Environmental Assessment to include an Affected Environment chapter that "...describes only those environmental resources the proposed action and its reasonable alternatives, if any, are likely to affect" (FAA Order 1050.1E, Change 1, paragraph 405e). This Chapter discusses changes in the affected environment that have occurred since the original Environmental Assessment and subsequent Court of Appeals' remand order.

Noise and Land Use Compatibility - The original Environmental Assessment presented the existing noise conditions in terms of noise exposure contours and land uses within the contours based on activity at the Airport in year 2007. In year 2007, Hillsboro Airport served 240,735 annual aircraft operations. No noise sensitive land uses were located in the 65 DNL and greater noise exposure contours associated with the year 2007 activity levels (See **Figure 5-1**). In fact, the 2007 noise exposure contours are located completely on airport property. In 2011, there were approximately 214,243 annual aircraft operations, or 11% less operations than occurred in 2007. Relative to the 2007 conditions, no substantive changes in aircraft fleet mix, flight patterns, or day-night distribution have occurred.¹¹

In preparing this Supplemental Environmental Assessment, the FAA considered various approaches to re-evaluating aircraft noise. Approaches considered were: a) no new evaluation, as activity levels are within the parameters noted for noise exposure maps in FAA Part 150 Noise Compatibility Planning approvals; b) use of a mathematical equation to estimate the change in sound from a change in activity; c) use of the FAA's Area Equivalent Model (AEM); and d) generation of new noise contours using the FAA's Integrated Noise Model (INM).

FAA's Part 150 Noise Compatibility Planning guidance requires airport operators to certify the noise exposure maps prepared in those studies. Given the passage of time that often occurs in the preparation of those studies, FAA has developed guidance that indicates if runway use and flight tracks have not changed, and activity has not changed by more than 17%, new noise contours are not required, as the contours are then considered representative of the current condition. This percentage change is used solely for determining whether the existing noise contours warrant updating based on a change in actual operations.

¹¹ Conversation between Steve Nagy, GA Airport Manager and Renee Dowlin, February 26, 2013.

As noted above, the Hillsboro Airport new forecast situations meet this test. In addition, a mathematical equation was used to estimate the decibel change that would have occurred with 11% less activity (between 2007 and 2011). That equation confirms that noise had decreased by about 0.5 dB between 2007 and 2011 based on the reduction in activity.¹²

FAA also considered using AEM to verify this sound level change. However, AEM does not include helicopter activity. Thus, while AEM could assist with considering noise associated with fixed wing aircraft, it would not capture the noise from helicopter activity. Therefore, given the high level of helicopter activity at Hillsboro Airport, the FAA deemed AEM inappropriate for use in this case. INM was initially considered, but because the two other methods noted that the noise impacts were smaller with lower activity, the INM would be expected to produce similar results. Since the higher activity analyzed in the original Environmental Assessment did not result in impacts to off-airport noise sensitive land uses, FAA determined that new noise contours were not necessary.

Air Quality - The original Environmental Assessment presented the existing conditions in the form of the 2007 emissions inventory for the criteria and precursor pollutants. As was noted relative to noise, the 2011 annual aircraft operations were 11% less than the operations evaluated in the 2007 emissions inventory. A new existing conditions (2011) emissions inventory was not prepared for this Supplemental Environmental Assessment since, based on the forecasts performed in response to the Court's remand, the emissions levels would be less than shown in the original Environmental Assessment.

DOT Section 4(f) - Section 4(f) of the Department of Transportation (DOT) Act of 1966 provides for the protection of certain publicly owned resources. DOT Section 4(f) resources include public parks; recreational areas; wildlife and waterfowl refuges of federal, state, or local significance; and any land from a historic site of federal, state, or local significance. The study area used for the analysis of DOT Section 4(f) lands in the original Environmental Assessment was the same as the noise study area, which encompassed the existing and future DNL 65 noise contours. The 65 DNL noise contours represent the largest area where DOT 4(f) lands have the potential to be affected. As this document notes, the noise contours used in the original Environmental Assessment are larger than the existing conditions, and the new forecasts performed in response to the Court's remand order would generate smaller contours. Further, the largest 65 DNL noise contour used in the original Environmental Assessment was not found to affect DOT 4(f) lands with or without the proposed project.

¹² The formula $10 * Log_{10} (x/y) = \Delta dB$ from a change in levels of activity; where x represents the alternative activity levels, and y represents the baseline activity. Source: Federal Aviation Administration, *Noise Control Plan Development Seminar*, 1979; Page A-30.

585.AA.03.02_HillsboroAirport_TB072008015SEA . 5.1-6 2015 noise exposure alt. 2 charlie pad - A.ai . 5/27/09 .



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Noise Level DNL 60 and below Contour DNL 65 and above Contour

Current Port Property

Zoning Classes

- Commercial Single Family Residential Multi-Family Residential Industrial
- Rural
- Mixed-Use
- Public Facility
- Parks and Open Space
- US Highway
- Arterial Roads

Figure 5-1 2010 Original Environmental Assessment - Largest Noise Contour (With Project 288,300 annual operations)



2015 Noise Exposure: Alternative 2 - Proposed Runway 12L/30R with Charlie Helipad Option A Hillsboro Airport Parallel Runway Environmental Assessment

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As was found in the original Environmental Assessment, the proposed project would not affect DOT 4(f) lands even with the new forecasts. Therefore, no further consideration was given to DOT 4(f) lands in this Supplemental Environmental Assessment.

Floodplain Impacts – The Hillsboro Airport lies on high ground spanning two watersheds. Glencoe Swale drains the northern section of the Airport, and Dawson Creek drains the southern section. The Watershed 2000 models included a detailed analysis of both Glencoe Swale and Dawson Creek. The approximate floodplain water surface elevation for Glencoe Swale at the Airport is 183 feet above mean sea level. The approximate floodplain water surface elevation for Dawson Creek at the Airport is 160 feet above mean sea level. The original Environmental Assessment noted that the proposed project was not expected to affect floodplains, and none of the information generated in response to the Court's remand order changes this conclusion. As the location of the project relative to floodplains has not changed, no further consideration was given in this Supplemental Environmental Assessment to floodplains.

Farmlands - Farmlands classified as prime, unique, or of statewide or local significance are monitored under the Farmland Protection Policy Act of 1981 (FPPA). The purpose of the FPPA is to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses, and to establish a threshold of significance. Projects affecting classified farmlands require notification of the U.S. Department of Agriculture Natural Resource Conservation Service (NRCS). With respect to farmlands classified as prime, unique, or of statewide importance, as defined by the NRCS, approximately 50 acres of prime farmland or farmland of statewide importance would be directly or indirectly converted to non-farmland use as a result of the proposed project as noted in the original Environmental Assessment. Coordination with the NRCS under the Farmland Protection Policy Act resulted in a Farmland Conversion Impact Rating Score of 107, which is below the threshold of significance of 200. As noted in earlier chapters, the location of the runway remains unchanged and thus, the effects on farmland would remain as analyzed in the original Environmental Assessment. None of the information generated in response to the Court's remand order requires a change in this analysis. Therefore, no further consideration is given to farmland in this Supplemental Environmental Assessment.

Fish, Wildlife, and Plants - Since the completion of the original Environmental Assessment, the US Fish and Wildlife Service (USFWS) has designated the streaked horned lark as threatened under the Endangered Species Act (ESA) (see 78 Federal Register 61451, October 3, 2013). The original Environmental Assessment noted that this species of bird was considered by USFWS in 2010 to be a candidate for listing as threatened. That Environmental Assessment noted, "According to a search of the ORNHIC (Oregon Natural Heritage Information Center) no rare, threatened, or endangered terrestrial species are documented at HIO. The nearest record of a state-listed species is about 3 miles to the southwest at Jackson Bottoms, where a bald eagle nest is documented ..." (*definition added*).¹³ There is no documentation of the streaked horned lark's presence at Hillsboro Airport. In support of the Hillsboro Airport Wildlife Management Hazard Plan, periodic wildlife surveys are conducted on the airfield and streaked horned larks have not been documented on or around the Airport. In addition, because the location of the project would not change, the project effects on fish, wildlife, and plants would not differ from that

¹³ Port of Portland, Hillsboro Airport Parallel Runway 12L/30R Environmental Assessment, 2010; Page 5.9-9

presented in the original Environmental Assessment. None of the information generated in response to the Court's remand order requires a change in this analysis. Therefore, no further analysis was conducted for this Supplemental Environmental Assessment for fish, wildlife, and plants.

Hazardous Materials, Pollution Prevention, and Solid Waste - The Port has conducted several environmental site assessments for real properties directly adjacent to current Port property, and thus, the condition of lands in the immediately surrounding real properties are well characterized. No known sites of contaminated soil and/or groundwater fall within the areas that would be affected by the proposed project. The original Environmental Assessment found that no significant impacts related to hazardous materials, pollution prevention, or solid waste were identified with the proposed project; no contaminated sites were identified inside the area to be disturbed for the proposed project.

The Airport currently uses a variety of hazardous or potentially toxic materials, such as vehicle and aviation fuels and solvents, which could be released to the environment because of a spill, airplane crash, or ground support equipment accident. The Port of Portland and its tenants address pollution prevention through storm water management, proper storage and handling of hazardous materials, monitoring and control of air emissions, and best management practices for maintenance activities.

The new forecasts prepared for this Supplemental Environmental Assessment are not expected to alter the conclusions relative to hazardous waste, pollution prevention, or solid waste presented in the original Environmental Assessment. As noted previously, activity levels would be less than predicted in the original Environmental Assessment, and thus lower levels of solid waste and hazardous waste generation would occur with the lower levels of activity. Therefore, no further consideration was given to these issues in this Supplemental Environmental Assessment.

Historical, Architectural, Archaeological, and Cultural Resources – No properties on or potentially eligible for the National Register of Historic Places are located within the project's Area of Potential Effect (APE) as noted in the original Environmental Assessment, which was based on the construction footprint and the 65 DNL noise exposure contour. The site disturbance footprint would generally be the same as examined in the original Environmental Assessment, which found no historic, architectural, archaeological, and cultural resources would be affected. As noted previously, the noise contours considered in the original Environmental Assessment were larger than what would occur with the new forecasts. Therefore, no further evaluations were conducted for this Supplemental Environmental Assessment.

Light Emissions and Visual Impacts – Hillsboro Airport has been an integral part of the visual environment since it was first established in 1925. Airport lighting is designed to reduce glare and thus rarely intrudes into surrounding areas. Approach lighting systems are an exception to the general character of airport lighting because such systems extend beyond the runway ends and may have flashing lights to guide pilots during periods of low visibility. The existing medium-intensity approach lighting system with runway alignment indicator lights (MALSR) for Runway 12R extends about 1,400 feet to the northwest of the runway end, crossing Evergreen Road. All lighting associated with the new runway would occur on Airport property, including

the PAPI, and would not be expected to produce off-airport light emissions to properties on the ground. As the original Environmental Assessment found that there would be no significant project-related light emissions and visual impacts, and the location and type of project have not changed with the new forecasts, no further consideration was given to light emissions and visual impacts in this Supplemental Environmental Assessment.

Socioeconomic Impacts, Environmental Justice, and Children's Health and Safety Risks – The original Environmental Assessment contained detailed information concerning the demographics of the Airport environs, with a focus on the city of Hillsboro, Washington County, and the Portland-Vancouver Metropolitan Area. Data were presented as of 2005. Since that time, more recent demographic data have become available indicating that the population of the City of Hillsboro, Washington County and the Portland-Vancouver Area is growing faster than was noted in the original Environmental Assessment. **Table 5-1** provides demographic information for 2009 and 2011, in addition to the data presented in the original Environmental Assessment.

					% Annual growth	% Annual growth
Population	<u>2005</u>	<u>2009</u>	<u>2011</u>	<u>2030</u>	2005-2030	2005-2009
Hillsboro	80,928	90,380	93,455	102,310	0.90%	2.80%
Washington County	474,800	537,322	540,410	682,500	1.50%	3.14%
Portland Vancouver	1,945,452	2,082,318	N/A	2,857,452	1.50%	1.71%
					% Annual growth	% Annual growth
Housing	<u>2005</u>	<u>2009</u>	<u>2011</u>	<u>2030</u>	2005-2030	2005-2009
Hillsboro	29,880	N/A	35,487	37,069	0.90%	NA
Washington County	189,925	201,454	213,993	272,998	1.50%	1.48%
Portland Vancouver	766,990	803,845	N/A	1,134,582	1.60%	1.18%

TABLE 5-1Population and Housing Demographics

N/A=Not available

Source: original Environmental Assessment, City of Hillsboro (www.ci.hillsboro.or.us/EconomicDevelopment/Demographics.aspx)

Information about the specific population, housing, and economic characteristics of the immediate Airport area is generally consistent with the characteristics presented relative to census data in the original Environmental Assessment. Recent socio-economic data indicates, however, that population and housing have continued to grow faster than was expected in the original Environmental Assessment. In contrast, the updated aviation forecasts for Hillsboro Airport have shown slower growth. As described in the Original Environmental Assessment, the project footprint is solely within the airport boundary. Despite this increased growth rate in area population, the proposed project is not expected to have off-airport effects. The proposed project would not require existing or planned residences or businesses to be relocated to complete the project and the project would not divide or disrupt communities in the surrounding area, nor change surface transportation facilities or traffic volumes. Therefore, because no off airport effects are anticipated, it was determined that no further consideration was needed of social and environmental justice impacts.

The original Environmental Assessment noted that no significant adverse socioeconomic impacts or risks to children's health and safety were anticipated due to construction and operation of the proposed project. No new schools or childcare facilities were identified in the immediate airport vicinity, and the project would not have off-airport population effects. Because the anticipated project-related effects continue to be confined to the Airport, and no resources associated with children would be affected, no further analysis of these factors is required in this Supplemental Environmental Assessment.

Water Quality – Hillsboro Airport lies on higher ground between two watersheds: the McKay Creek watershed, which includes Glencoe Swale, which drains the northern portion of the Airport; and the Dawson Creek watershed, which drains the southern portion of the Airport. Both watersheds are sub-basins of the Tualatin River watershed. The proposed project would represent an approximately 0.9 percent increase in the impervious area draining to Dawson Creek. Because the increase in impervious area for Dawson Creek is below the margin of error for modeling and the increase in flows and pollutants would not be measurable, impacts to Dawson Creek were considered negligible in the original Environmental Assessment. The original Environmental Assessment found an increased flow to Glencoe Swale of approximately 5.9 percent in a 10-year storm event and approximately 4.0 percent in a 100-year storm event. The original Environmental Assessments concluded that this level would not exceed the defined threshold of significance.

The proposed project would not alter the location and type of construction relative to that considered in the original Environmental Assessment. In addition, no changes in the condition of local water quality were identified. Thus, because the new forecasts of activity would not affect water quality, no further consideration was given in this Supplemental Environmental Assessment to water quality.

Wetlands - There are approximately 51 acres of wetlands on Hillsboro Airport. The original Environmental Assessment noted that approximately 2.2 acres of wetland would be filled. In July 2010, the Port of Portland requested a permit modification because the project design was changed to eliminate the connector taxiway crossing Runway 12R/30L. This project change meant that 'Wetland R' would no longer be impacted resulting in a decrease of wetland impact of 0.3 acres. At 1.71 acres, Wetland R was the largest wetland proposed for impact, although it was only partially impacted (0.3 acres). The remaining wetlands that would be affected are small and range in size from 0.01 acre to 0.47 acres.

As a result of this project change, the proposed project would result in permanent loss of 1.92 acres of wetlands instead of the 2.2 acres noted in the original Environmental Assessment. All wetlands that would be impacted are vegetated primarily by non-native grasses and opportunistic weedy species. In addition to wetlands, 0.09 acre of other regulated waters would be impacted, as noted in the original Environmental Assessment. These "other waters" are excavated roadside ditches located along roadways to convey storm water. These ditches range from 2 to 4 feet wide but do not convey water wider and deeper than 1 foot. The wetland mitigation measures, as identified by the original Environmental Assessment have been completed at the Jackson Bottom Wetlands Preserve as proposed in the project's mitigation plan.

Because no new wetlands have been identified in the project area and the project location would not change with the information considered in this Supplemental Environmental Assessment, no further discussion will occur about wetlands in this document.

Climate - Research has shown that there is a direct correlation between fuel combustion and greenhouse gas emissions. Therefore, sources that require fuel or power at an airport are the primary sources that would generate greenhouse gases. In terms of relative U.S. contribution, the U.S. General Accounting Office (GAO) reports that aviation accounts "for about 3% of total U.S. greenhouse gas emissions from human sources, according to EPA data" compared with other industrial sources, including the remainder of the transportation sector (20%) and power generation (41%).¹⁴ The International Civil Aviation Organization (ICAO) estimates that greenhouse gas emissions from aircraft account for roughly 3 percent of all anthropogenic greenhouse gas emissions globally. Climate change due to greenhouse gas emissions is a global phenomenon, so the affected environment is the global climate.¹⁵

The scientific community is continuing efforts to better understand the impact of aviation emissions on the global atmosphere. The FAA is leading and participating in a number of initiatives intended to clarify the role that commercial aviation plays in greenhouse gas emissions and climate. The FAA, with support from the U.S. Global Change Research Program and its participating federal agencies (e.g., NASA, NOAA, USEPA, and DOE), has developed the Aviation Climate Change Research Initiative (ACCRI) in an effort to advance scientific understanding of regional and global climate impacts of aircraft emissions. FAA also funds the Partnership for AiR Transportation Noise & Emissions Reduction (PARTNER) Center of Excellence research initiative to quantify the effects of aircraft exhaust and contrails on global and U.S. climate and atmospheric composition. Similar research topics are being examined at the international level by the ICAO.¹⁶

¹⁴ IPCC Report as referenced in U.S. General Accounting Office (GAO) *Environment: Aviation's Effects on the Global Atmosphere Are Potentially Significant and Expected to Grow*; GAO/RCED-00-57, February 2000, p. 14; GAO cites available EPA data from 1997.

¹⁵ As explained by the U.S. Environmental Protection Agency, "greenhouse gases, once emitted, become well mixed in the atmosphere, meaning U.S. emissions can affect not only the U.S. population and environment but other regions of the world as well; likewise, emissions in other countries can affect the United States." Climate Change Division, Office of Atmospheric Programs, U.S. Environmental Protection Agency, *Technical Support Document for Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act 2-3 (2009)*, available at http:// epa.gov /climatechange/endangerment.html.

¹⁶ Lourdes Q. Maurice and David S. Lee. Chapter 5: Aviation Impacts on Climate. Final Report of the International Civil Aviation Organization (ICAO) Committee on Aviation and Environmental Protection (CAEP) Workshop. October 29th November 2nd 2007, Montreal. http://www.icao.int/icaonetlcnfrstICAEP/CAEP SG_20082/docs/Caep8_SG2_WPI0.pdf

Chapter 6. Environmental Consequences

The original Environmental Assessment addressed all of the environmental features required by FAA Orders 1050.1E and 5050.4B. This Supplemental Environmental Assessment, as noted in **Chapter 2** (*Approach Used in Preparing the Supplemental Environmental Assessment*), focuses on the new forecasts performed in response to the Ninth Circuit Court of Appeals' remand order, and how the new forecasts might change the analysis and conclusions documented in the original Environmental Assessment.

Environmental features that would be affected by the physical construction process necessary to build the project would remain as analyzed and documented in the original Environmental Assessment, with the exception the addition of the precision approach path indicator and the connector taxiway that would now not be built. No changes in location or scope of the other project elements would occur because of the new forecasts. However, as discussed in **Chapter 4** (*Project Need and Timing*), given the litigation, the construction of the runway would be later than anticipated in the original Environmental Assessment. The evaluation of environmental consequences focused in this Supplemental Environmental Assessment, like the original Environmental Assessment, on the anticipated first year of operation of the proposed project (2016), and five years later (2021).

The new forecasts (discussed in **Chapter 3**, *Forecasts*) would alter the impacts associated with the project consequences discussed in the original Environmental Assessment relative to certain environmental factors. Therefore, FAA considered which of the environmental factors would require re-evaluation. Based on the discussion of environmental effects in the original Environmental Assessment, those environmental factors that would <u>not</u> be affected by the new forecasts, where there has been no notable change in conditions, and would therefore not require re-evaluation as discussed in **Chapter 5** (*Affected Environment*) include:

- DOT Section 4(f)
- Floodplain Impacts
- Farmlands
- Fish, Plants and Wildlife
- Hazardous Materials, Pollution Prevention, and Solid Waste
- Historical, Architectural, Archaeological, and Cultural Resources
- Light Emissions and Visual Impacts
- Socioeconomic Impacts, Environmental Justice, and Children's Health and Safety Risks
- Water Quality
- Wetlands

The following environmental factors require additional review:

- Aircraft Noise and Land Use Compatibility,
- Air Quality
- Climate
- Secondary (Induced) Impacts, and
- Cumulative Impacts

Because there are several forecast conditions, consideration of each topic area is separated into: i.) Constrained (No Action) and Unconstrained (With Project) Forecasts Impacts, and ii.) Constrained (No Action) and Remand (With Project) Forecasts Impacts.

a. Aircraft Noise and Land Use Compatibility

The original Environmental Assessment noted that in the reasonably foreseeable future, "No residential or other noise sensitive land uses are within the 65-decibel day-night average sound level (DNL 65) contours that define significant noise impact for any of the alternatives under consideration." As a result, the original Environmental Assessment concluded that there would be no significant adverse project-related noise or land use conflicts. **Figure 5-1** shows the largest noise exposure contour identified in the original Environmental Assessment (the 2015 noise contour associated with the With Project alternative, where 288,300 annual aircraft operations were forecast).

As shown in **Table 3-2**, the new forecasts [Constrained, Unconstrained, and Remand] would have activity levels lower than what was considered in the original Environmental Assessment. The Port of Portland has indicated that the current fleet mix, flight patterns, and the day-night distribution of activity are consistent with the information in the original Environmental Assessment.¹⁷ The following sections describe how the lower activity levels would affect the noise exposure contours. In all cases, the noise contours associated with the new forecasts are expected to be smaller than those with the project in the original Environmental Assessment, which contained no noise sensitive land uses; all 65 DNL and greater noise contours prepared for the original Environmental Assessment were confined to airport land at higher activity levels than the new forecasts.

i) Constrained (No Action) and Unconstrained (With Project) Forecasts Impacts

Table 3-2 (Chapter 3, Forecasts) provides a comparison of the new forecasts to the forecasts used in the original Environmental Assessment. By 2021, the new forecasts indicate 242,680 annual aircraft operations assuming the Constrained or Unconstrained Forecasts. Compare this to the earlier forecast of 288,300 annual operations for year 2015 in the original Environmental Assessment; the new forecasts are nearly 16% lower 6 years later in time than the earlier forecasts.

In general, a reduction in the number of aircraft operations would be expected to produce less noise. A comparison was made between the 2016 Unconstrained Forecast and the original Environmental Assessment forecast for year 2015. The 2016 new forecasts (Unconstrained and Constrained) are 22% less than the year 2015 forecast prepared earlier. Using a commonly accepted formula to estimate how this reduction in activity might affect overall aircraft noise levels,¹⁸ the 22% reduction in activity levels between the 2016 Unconstrained Forecast and the original Environmental Assessment forecast for 2015 would be expected to

¹⁷ Conversation between Steve Nagy, GA Airport Manager and Renee Dowlin, February 26, 2013.

¹⁸ The formula $10 * \text{Log}_{10} (x/y) = \Delta dB$ from a change in levels of activity; where x represents the alternative activity levels, and y represents the baseline activity. Source: Federal Aviation Administration, *Noise Control Plan Development Seminar*, 1979; Page A-30.

produce approximately 1.1 dB less noise. **Table 6-1** contains a comparison of the forecasts and effects on the noise. Less noise would indicate smaller noise contours.

A similar comparison was made for the new forecasts for year 2021. The 16% reduction in activity levels between the Unconstrained 2021 Forecast and the original Environmental Assessment forecast for 2015 (242,680 operations and 288,300 operations, respectively) would be expected to produce approximately 0.7 dB less noise.

Since the Unconstrained and Constrained Forecasts activity would be expected to continue to confine the noise contours to the airport lands, the proposed project would not have the potential to create a significant adverse noise or land use effect.

ii) Constrained (No Action) and Remand (With Project) Forecasts Impacts.

Using the same approach discussed for the Unconstrained and Constrained Forecasts, a comparison was made of the Remand Forecasts to the original Environmental Assessment analysis. The Remand Forecast for year 2021 is 254,030 operations, which is approximately 12% lower than the 288,300 operations reflected in the original Environmental Assessment. Using the same methodology discussed in the Unconstrained Forecasts above, the Remand Forecast would produce about 0.9 dBA less noise than the largest contour in the original Environmental Assessment in 2016 and 0.5 dBA less in 2021 (see **Table 6-1**). The original Environmental Assessment found that no noise sensitive land uses would be affected by 65 DNL or greater noise levels at the higher activity levels; the 65 DNL or greater noise contours would be expected to remain on airport with the Remand Forecasts. Therefore, no exposure of sensitive land uses, at 65 DNL or greater, would be expected with the Remand Forecasts. If activity levels consistent with the Remand Forecasts were to occur, a significant aircraft noise and land use impact would not occur.

	Original Environmental Assessment (With Project)		Unconstrain New F	ed/Constrained Forecasts	Remand Forecasts		
Year	Annual Operations	Comments	Annual Operations	Sound Level Change*	Annual Operations	Sound Level Change*	
2012	277,294	No noise sensitive land use impacts	N/A	N/A	N/A	N/A	
2015	288,300	No noise sensitive land use impacts	N/A	N/A	N/A	N/A	
2016	N/A	N/A	224,260	-1.1 dB	235,610	-0.9 dB	
2021	N/A	N/A	242,680	-0.7 dB	254,030	-0.5 dB	

 TABLE 6-1

 Comparison of Noise Impacts of Forecasts

* dB change, relative to 288,300 annual operations used in the 2010 EA for the With Project forecast for year 2015. Original Environmental Assessment noise contours developed using the Integrated Noise Model to identify acres within the DNL 65 contour. N/A = not available.

b. Air Quality

The original Environmental Assessment included an inventory and analysis of pollutants for which there are health-based standards, called criteria pollutants or their precursors. That analysis concluded that the proposed runway project would generate emissions during the construction process due to the equipment necessary to build the projects, but once completed the new runway would reduce emissions of all pollutants due to aircraft operations because of expected reduction in delays. The following discusses the changes in emissions inventories associated with the various forecasts.

i. Constrained (No Action) and Unconstrained (With Project) Forecasts

To evaluate the effects on emissions from the Constrained and Unconstrained Forecasts discussed in **Chapter 3** (*Forecasts*), an aircraft emissions inventory using the FAA's Emissions Dispersion Modeling System (EDMS Version 5.1.3) was generated for 2016 and 2021.¹⁹

No changes in the construction practices are expected, and thus, construction emissions noted in the original Environmental Assessment are expected to remain the same, but occur in 2014 or 2015 rather than in 2010.²⁰ A year 2016 and 2021 emissions inventory was prepared for the new forecasts: No Action (Constrained Forecasts) and the With Project (Unconstrained Forecasts). **Appendix E** (*Air Quality Technical Memo*), provides the technical information supporting the updated emissions inventory. **Table 6-2** summarizes the results of the emissions inventory.

Table 6-2 shows that the proposed runway project emissions would be expected to be equal to, or less than, the emissions of the Constrained-No Action Forecasts. This emission reduction associated with the project would be expected, given that the Airport would accommodate the same level of aircraft operations under both forecasts through 2021, but the level of delay would be reduced with the proposed new runway. With the Unconstrained (With Project) Forecasts in 2021, carbon monoxide emissions would be reduced by 44.3 tons, VOC emissions would be reduced by 3.6 tons, and all other pollutants would be reduced by 1 ton or less in comparison to the Constrained-No Action Forecasts.

¹⁹ EDMS was used directly for all pollutants except lead (Pb). EDMS does not calculate lead emissions. Rather the fuel use identified by EDMS was used to estimate lead emissions at Hillsboro Airport based on the known quantity of lead content in AvGas.

²⁰ Construction emissions would be slightly less than presented in the original Environmental Assessment, as Taxiway D was completed in 2011.

	СО	VOC	NO _x	SOx	PM ₁₀	PM _{2.5}	Pb
2013 (construction)							
No Action	0.0	0.0	0.0	0.0	0.0	0.0	N/A
With Project	6.1	0.4	5.2	0.5	4.0	4.0	N/A
Difference	6.1	0.4	5.2	0.5	4.0	4.0	N/A
2016 (operation)							
No Action	1,208.3	41.6	37.5	6.7	1.2	1.2	0.8
With Project	1,179.2	39.2	36.9	6.4	1.2	1.1	0.8
Difference	(29.1)	(2.4)	(0.6)	(0.3)	0.0	(0.1)	0.0
2021 (operation)							
No Action	1,289.5	45.8	39.9	7.5	1.3	1.3	0.9
With Project	1,245.2	42.2	38.9	7.1	1.2	1.2	0.9
Difference	(44.3)	(3.6)	(1.0)	(0.4)	(0.1)	(0.1)	0.0

TABLE 6-2CONSTRAINED AND UNCONSTRAINED FORECASTSEMISSIONS INVENTORY (tons per year)

Note: Year 2013 project-related emissions reflect only construction emissions, as the first full year of operating emissions would be in 2014. No Action = Constrained Forecasts, With Project = Unconstrained Forecasts, N/A = Not Applicable Source: CDM, December 2012 (Appendix E)

ii. Constrained (No Action) and Remand (With Project) Forecasts

Similar to the Unconstrained-Constrained Forecasts comparison in the prior section, an emissions inventory was prepared for the Remand Forecasts using the FAA's Emissions Dispersion Model for aircraft operations in 2016 and 2021. This inventory was then compared to the Constrained Forecasts for the No Action. **Table 6-3** lists the emissions inventory results.

With the higher activity levels associated with the Remand Forecasts (relative to the No Action-Constrained Forecasts), emissions would be greater with the proposed project, even though delay would be less. While a delay-related emissions savings would occur with the project, the higher activity levels associated with the Remand Forecasts would offset those delay savings, relative to the No Action-Constrained Forecasts. As **Table 6-3** shows, the project-related emissions (the difference between the Remand Forecasts and the No Action) would produce 41 tons of carbon monoxide, 1.8 tons of NOx, and less than 1 ton of the remaining criteria pollutants in 2016. Project-related emissions would be less in 2021, as the growth inducing effects of the runway, if they occurred, would begin to taper off further out in time after completion of the project. In 2021, emissions would be greater "With Project" than the No Action with the exception of emissions of VOC, which would slightly decrease. This reduction in VOC emissions is associated with the modes of aircraft operations and how emissions are offset between increases in activity versus reductions in delay, as noted in **Appendix E**.

		-					
	СО	VOC	NO _x	SOx	PM_{10}	PM _{2.5}	Pb
2013 (Construction)							
No Action	0.0	0.0	0.0	0.0	0.0	0.0	N/A
With Project	6.1	0.4	5.2	0.5	4.0	4.0	N/A
Difference	6.1	0.4	5.2	0.5	4.0	4.0	N/A
2016 (Operation)							
No Action	1,208.3	41.6	37.5	6.7	1.2	1.2	0.8
With Project (Remand)	1,249.3	42.1	39.3	6.9	1.2	1.2	0.9
Difference	41.0	0.5	1.8	0.2	0.0	0.0	0.1
2021 (Operating)							
No Action	1,289.5	45.8	39.9	7.5	1.3	1.3	0.9
With Project (Remand)	1,316.4	45.1	41.0	7.5	1.3	1.3	0.9
Difference	26.9	(0.7)	1.1	0.0	0.0	0.0	0.0

TABLE 6-3CONSTRAINED AND REMAND FORECASTSEMISSIONS INVENTORY (tons per year)

Note: Year 2013 project-related emissions reflect only construction emissions, as the first full year of operating emissions would be in 2014. No Action = Constrained Forecasts, With Project Induced = Remand Forecasts, N/A = Not Applicable Source: CDM, December 2012 (Appendix E)

iii. Conformity Conclusion

There has been no change in the air quality status as defined by the US Environmental Protection Agency for the area around Hillsboro Airport since the original Environmental Assessment. The Portland-Vancouver airshed was, and continues to be, designated as attainment for all pollutants. However, because of past exceedances of the carbon monoxide standard, the area is subject to a maintenance plan/State Implementation Plan for that pollutant. Therefore, in accordance with the Clean Air Act, the General Conformity regulation is applicable.

Since the Conformity regulation applies, a federal agency cannot approve a project until it has been shown that the project conforms to the applicable State Implementation Plan. The General Conformity rule only applies to the pollutants that the US EPA has designated as non-attainment or maintenance; thus, in the Portland area, a conformity analysis is required for carbon monoxide. The applicable *de minimis* threshold for a carbon monoxide maintenance area established by 40 CFR 93.153 is 100 tons per year. As the two tables above show, the project would remain *de minimis* in all years with any of the new forecasts, as the project-related emissions would be well under the 100-ton threshold. Thus, no significant adverse air quality impacts would be expected.

c. Secondary (Induced) Impacts

FAA Order 1050.1E change 1 *Environmental Impacts: Policies and Procedures* states the following:

Major development proposals often involve the potential for induced or secondary impacts on surrounding communities. When such potential exists, the EA shall describe in general terms such factors. Examples include: shifts in patterns of population movement and growth; public service demands; and changes in business and economic activity to the extent influenced by the airport development. Induced impacts will normally not be significant except where there are also significant impacts in other categories, especially noise, land use, or direct social impacts. In such circumstances, an EIS may be needed. (Order 1050.1E, Chg1 Appendix A, Section 15)

The completion of a new runway at Hillsboro Airport and its effects on development in the Airport environs was considered. This section analyzes secondary impacts in light of the new forecasts.

i. Constrained (No Action) and Unconstrained (With Project) Forecasts

As noted in the prior sections, the Constrained and Unconstrained Forecasts anticipate the same level of activity at Hillsboro Airport through 2021. With no change in activity, no secondary/induced activity would be expected in this time period.

ii. Constrained (No Action) and Remand (With Project) Forecasts

The 2021 Remand Forecast (the highest of the three new forecasts) shows 254,030 operations (Chapter 3, Table 3-2) compared to 260,957 operations in 2008. With the Remand Forecasts assumptions, approximately 11,350 additional operations per year might occur due to the new runway at Hillsboro Airport (about 31 operations per day, or 15 arrivals and 15 departures per day). Assuming conservatively that each operation has 3 individuals occupying the aircraft, this would generate approximately 45 new customers (15 arrivals or departures times 3 persons per aircraft) to the Airport area on an average day. Given the anticipated population growth of the area unrelated to the Airport, it is unlikely that this small number of additional customers would cause additional businesses to be located in the Airport vicinity.

For these reasons, although the economic activity in the area has increased over what was originally expected (see **Chapter 5**, *Socioeconomic Impacts, Environmental Justice, and Children's Health and Safety Risks*), the anticipated activity level associated with the new forecasts, including the Remand Forecasts, would not be expected to give rise to "induced or secondary impacts" in the form of development or economic activity or any resulting environmental consequence in the Airport environs.

d. Climate

The original Environmental Assessment addressed these issues in the analysis of Air Quality. Since the issuance of the original Environmental Assessment, the FAA issued guidance concerning the consideration of greenhouse gases and climate change in NEPA documents.²¹

Of growing concern is the impact of proposed projects on climate change. Greenhouse gases are those that trap heat in the earth's atmosphere. Both naturally occurring and anthropogenic (manmade) greenhouse gases include carbon dioxide (CO_2) ,²² methane (CH₄), nitrous oxide (N₂O), hydroflourocarbons (HCFs), perflourocarbons (PFCs) and sulfur hexafluoride (SF₆).²³

Although there are no Federal standards for aviation-related greenhouse gas emissions, it is wellestablished that greenhouse gas emissions can affect climate. The Council on Environmental Quality (CEQ) has indicated that climate should be considered in NEPA analyses. As noted by CEQ, however, "it is not currently useful for the NEPA analysis to attempt to link specific climatological changes, or the environmental impacts thereof, to the particular project or emissions, as such direct linkage is difficult to isolate and to understand."²⁴

With respect to greenhouse gas emissions, aviation activity at the Airport represents a small percentage of U.S. and global emissions. In 2012, the US aviation system served 100,088,172 operations, which are expected to increase to 105,453,489 by 2021.²⁵ Hillsboro Airport activity with the Remand Forecast (the highest of the three new forecasts) would represent 0.24% of US activity in 2021.²⁶

The Emissions Dispersion Modeling System (EDMS), used to estimate criteria pollutant emissions inventory in the Air Quality section, reports aircraft fuel burn associated with the forecast scenarios. Based on fuel burn, CO_2 emissions can be calculated and reported. For purposes of determining greenhouse gas emissions, the fuel burn associated with the Constrained (or No Action), Unconstrained (With Project), and Remand Forecasts (With Project) were extracted from EDMS. Project related emissions would be less in 2021, as the growth inducing effects of the runway, if they occurred, would begin to taper off further out in time after completion of the project. The fuel burn associated with the Constrained Forecast (No Action) in 2016 and 2021 was subtracted from the Remand Forecast (with Project) in those years to

²¹ FAA Order 1050.1E, Change 1 Guidance Memo #3 titled *Considering Greenhouse Gases and Climate Change under the National Environmental Policy Act (NEPA): Interim Guidance*, January 2012

²² All greenhouse gas inventories measure carbon dioxide emissions, but beyond carbon dioxide different inventories include different greenhouse gases (GHGs).

²³ Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also greenhouse gases, but they are, for the most part, solely a product of industrial activities. For example, chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) are halocarbons that contain chlorine, while halocarbons that contain bromine are referred to as bromofluorocarbons (i.e., halons) or sulfur (sulfur hexafluoride: SF6)

^{24 &}quot;Memorandum for Heads of Federal Departments and Agencies, Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions" dated February 18, 2010, page 3

²⁵ FAA Terminal Area Foreast (All activity, Summary Report), http://aspm.faa.gov/main/taf.asp

²⁶ Assuming the same relationship as used in the Final EA (2010) (that US greenhouse gas emissions occur in direct proportion to the portion of US aviation activity), the 0.24% of Hillsboro activity associated with the Remand Forecast in 2021 would represent approximately 0.0072% (0.0024 x 3%) of US greenhouse gas emissions.

determine the project-related fuel burn change. Using the equation factors in the FAA Order 1050.1E, Change 1, Guidance Memo #3,²⁷ the Remand Forecast would result in approximately 115,153 kg of fuel consumed in the landing and takeoff cycle above the Constrained Forecast, or 364 tons of CO₂, in 2016. In 2021, the proposed project would result in 19,388 kg of fuel, or 61 tons of CO₂. For context, the FAA's Terminal Area Forecast (TAF) estimates a growth of operations of approximately 5 percent. According to the USEPA's most recent inventory, there were 148.4 million metric tons of CO₂ per year generated by aviation sources in 2012. Using the TAF's estimation of growth, and conservatively applying that growth to emissions, approximately 156.4 million metric tons of CO₂ might be generated by all aviation sources in 2021. Given the low level of project-related CO₂ emissions (364 tons or less) and that the project-related emissions decrease over time, further analysis of CO₂ emissions would not improve agency decision-making.

e. Cumulative Impacts

The original Environmental Assessment addressed the cumulative effects of past, present, and reasonably foreseeable future actions. As noted by the Council on Environmental Quality, individually minor, but collectively significant actions occurring over a defined period of time can cause cumulative impacts. The conclusions of the original Environmental Assessment were that the effects of the new runway project at Hillsboro Airport would not add to past, present, and future conditions, to create significant cumulative environmental impacts.

Airport Development and Development in the Airport Environs

Before considering the cumulative environmental impacts of the proposed project and the new forecasts, a review was conducted of recent changes that have occurred in the Airport vicinity. That review found:

Airport Development: Since completion of the original Environmental Assessment, the Port of Portland constructed the Taxiway C extension in 2010 and Taxiway D in 2011. In addition, two street rights-of-ways were vacated in 2010 (a portion of NE 264th and a portion of Airport Road), and the new City of Hillsboro Fire station and Aero Air Hangar Expansion were completed in 2012. Those projects were considered in the environmental analyses in the original Environmental Assessment along with the proposed runway and Charlie Helicopter Landing and Take-Off Pad.

Table 6-4 lists the past, present, and future projects considered in the original Environmental Assessment as well as these new projects included in the analysis in the Supplemental EA. In 2012, the Port renewed its National Pollution Elimination System (NPDES) permit (known as permit 1200-Z) to allow the use of deicing chemical at Hillsboro Airport which will ensure that stormwater discharges to area waters meet standards. The Port also has plans for a taxiway

²⁷ FAA Order 1050.1E, Change 1, Guidance Memo #3, *Considering Greenhouse Gases and Climate Under the National Environmental Policy Act (NEPA): Interim Guidance,* January 2012. Found at http://www.faa.gov/air_traffic/environmental_issues/media/Memo-AEE-400_GuidncMem3_GHG_Climate_NEPA_Intrm_12JAN2012.pdf

connection to the NW Corporate Center, which would not be built until development in the NW Corporate Center area occurs, likely between 2016 and 2020.

Regional Development: In response to population and development demands in the Hillsboro Airport area, the City of Hillsboro originally adopted its Industrial Community Planning Area and Industrial Sanctuary Zone north. The City of Hillsboro added three Community Plans to the Hillsboro Comprehensive Plan and Urban Growth Boundary between 2004 and 2008: Shute Road Industrial Site; Evergreen Area Industrial Plan; and Helvetia Area Industrial Plan. These plans implemented conditions (such as limits on types of uses, lot sizes, etc.) in separate Special Industrial Districts. According to the City, with the exception of Genentech and several smaller companies, these areas have remained undeveloped. The City believed that these requirements dissuaded development, and thus proposed amendment to its Comprehensive Plan to consolidate the existing Shute Road, Evergreen and Helvetia Community Plans into a single North Hillsboro Industrial Area Community Plan. The City consolidated the original Special Industrial District zones into a single Industrial Sanctuary zone. These changes were approved by the City in early 2011.

Intel has continued to expand its facilities at Ronler Acres, located less than one-half mile east of the Airport. Current plans call for 2.5 million square feet of new buildings, including a 1.1 million square foot research factory. Included in the expansion plans are the addition of an office building and another parking garage.

TABLE 6-4 Past, Present, and Reasonably Foreseeable Future Projects

Project	Year	Potential Cumulative Impact			
	Port of Portland Projects				
Construct Taxiway "F" and Install Perimeter Road and Fencing	1998-2001	Increased impervious surface and stormwater runoff and wetland fill.			
Runway 12-30 RSA Improvements	1999-2002	Improvements adjacent to Glencoe Swale: wetland fill.			
Property acquisition of 4.81 acres for airport infrastructure and supporting development	2000	Potential impacts depend on the facilities developed on the acquired land.			
Property acquisition of 4.77 acres for RSA Project	2001	Potential impacts depend on the location of the RSA improvements – see Runway 12-30 RSA above.			
Property acquisition of 4.97 acres for RSA Project	2001	Potential impacts depend on the location of the RSA improvements – see Runway 12-30 RSA above.			
Property acquisition of 9.82 acres for future airport infrastructure and supporting development	2002	Potential impacts depend on the facilities developed on the acquired land.			
Property acquisition of 0.93 acre for airport infrastructure and supporting development	2003	Potential impacts depend on the facilities developed on the acquired land.			
Property acquisition of 4.84 acres for airport infrastructure and supporting development	2003	Potential impacts depend on the facilities developed on the acquired land.			
Property acquisition of 4.82 acres for airport infrastructure and supporting development	2004	Potential impacts depend on the facilities developed on the acquired land.			
Property acquisition of 4.92 acres for airport infrastructure and supporting development	2008	Potential impacts depend on the facilities developed on the acquired land.			
Property acquisition of 4.82 acres for airport infrastructure and supporting development	2008	Potential impacts depend on the facilities developed on the acquired land.			
Property acquisition of 19.75 acres for airport infrastructure and supporting development	2009	Potential impacts depend on the facilities developed on the acquired land.			
Runway 12/30 Hi-Speed Exits	2008	Taxiways developed between existing runway and taxiway: increased impervious surface.			
Taxiway C Extension	2010	Taxiway developed in area previously cleared and graded as part of airfield: increased impervious surface (4.2 acres). Accelerating the project did not alter its effects.			
Construct Taxiway D	2011	Was assessed in the original EA. Increased impervious surface.			
NW 264th & NW Airport Road Street Vacation	2010	Would not materially affect level of service on surrounding roadways.			
City of Hillsboro - Construct New Fire Station	2012	station to be built in previously cleared and graded area adjacent to NE 25th Street: increased impervious surface, possibly increased noise and traffic on NE 25th Street.			
Aero Air Hangar Expansion	2012	Hangar would be built in area previously cleared for Airport development: increased impervious surface.			
Construct East Access Road	2010	Additional impervious surface and stormwater runoff, possible wetland impacts.			
12R-30L RSA Modifications	2011	Wetland impacts			
Aircraft Wash Rack	2011	No potential for cumulative impacts.			
Construct Taxiway M - Phase 1	2012	Additional impervious surface and stormwater runoff, possible wetland impacts.			
NPDES Permit Renewal (1200-Z)	2012	Improved water quality.			
Taxiway A3 Extension	2013	Additional impervious surface and stormwater runoff, possible wetland impacts.			

TABLE 6-4 Past, Present, and Reasonably Foreseeable Future Projects

Project	Year	Potential Cumulative Impact
Construct East Apron - Phase 1	2013	Additional impervious surface and stormwater runoff, possible wetland impacts
Reconstruct/Shift/Extend RW 2-20, Taxiway C, & Taxiway B	2014	Additional impervious surface and stormwater runoff, possible wetland impacts.
Relocate Taxiway C	2014	Additional impervious surface and stormwater runoff, possible wetland impacts
HIO Taxiway to NW Corporate Center	2016-2020	Additional impervious surface and stormwater runoff.
Future Ramp and Hangar Development	Ongoing	Additional impervious surface and stormwater runoff, possible wetland impacts.
	County a	and City Projects
West Union Rd. between Kahneera Dr. & Deerfield St. Road Widening	2006-2008	Increased impervious surface; other potential impacts dependent upon site conditions and project design
Cornell Rd. Alocek Dr. Traffic Signal	2006-2008	No potential to contribute to cumulative impacts
Susbauer Railroad Crossing	2006-2008	Increased impervious surface; other potential impacts dependent upon site conditions and project design
170th/173rd Av. Extension	2006-2008	Increased impervious surface; other potential impacts dependent upon site conditions and project design
Cornell Rd. Bethany to Evergreen Road Widening	2006-2008	Increased impervious surface; other potential impacts dependent upon site conditions and project design
River Rd. Bridge Replacement	2006-2008	Increased impervious surface; other potential impacts dependent upon site conditions and project design
Brookwood Ave. Roundabout	2006-2008	Increased impervious surface; other potential impacts dependent upon site conditions and project design
209th Ave. New Bridge	2006-2008	Increased impervious surface; other potential impacts dependent upon site conditions and project design
28th Ave Widening	2005	Increased impervious surface; other potential impacts dependent upon site conditions and project design
Evergreen Rd. Widening	2002	Increased impervious surface; other potential impacts dependent upon site conditions and project design
Butler Rd. Widening & Extension	2004	Increased impervious surface; other potential impacts dependent upon site conditions and project design
Airport Rd. Realignment & Widening	2005	Increased impervious surface; other potential impacts dependent upon site conditions and project design
231st, 234th St. Extension	2006-2020	Increased impervious surface; other potential impacts dependent upon site conditions and project design
Baseline Rd. Widening	2006-2020	Increased impervious surface; other potential impacts dependent upon site conditions and project design
Cornell Rd. Widening	2006-2020	Increased impervious surface; other potential impacts dependent upon site conditions and project design
Jackson School Rd. Widening	2006-2020	Increased impervious surface; other potential impacts dependent upon site conditions and project design
US 26/Cornelius Rd. Interchange Ramp Improvements	2006-2020	Increased impervious surface; other potential impacts dependent upon site conditions and project design
Industrial Community Planning Area and Industrial Sanctuary Zone north, and Community Plans	2011- Ongoing	Increase impervious surface and stormwater runoff, increased induced socioeconomic activity, and other effects dependent on site plan
Intel's Ronler Acres Expansion	Ongoing	Increase impervious surface and stormwater runoff, increased induced socioeconomic activity, and other effects dependent on site plan
Veterans Drive extension	Ongoing	Increased impervious surface and stormwater runoff, increased regional mobility.

Note: *italicized dates* reflect project changes between the original EA and Supplemental EA.

Source: Original EA, Tables 6-1 through 6-4 and Synergy Consultants, Inc.

The City of Hillsboro began construction in July 2011 on Veterans Drive, an east-west road located south of Hillsboro Airport. The first phase of the Veterans Drive project constructed a new roadway between NE 28th and NE 34th Avenues, at the Fair Complex/Hillsboro Airport Max Station. Phase two of the Veterans Drive project will eventually extend Veterans Drive from the roundabout at NE 34th Avenue to Brookwood Parkway. The City anticipates construction to be complete by summer of 2014. This roadway project was proposed to facilitate access to the Max station and improve roadway flows.

To facilitate the future Veterans Drive extension, the Port of Portland released 3.21 acres of airport property acquired under federal grants and transferred it to the City of Hillsboro. This land will be used for right-of-way use in constructing an extension of NE Veterans Drive and associated storm sewers. The Port of Portland exchanged the land with the City of Hillsboro and the Washington County for approximately 4.1 acres of vacant right-of-way located on the Airport in the Runway 13 safety area and runway protection zone near NE Evergreen Road. The FAA completed a documented categorical exclusion for this project.

Cumulative Impacts

As noted in the prior sections of this Chapter, with the new forecasts, no new environmental effects associated with the proposed project have been identified that were not already considered and disclosed in the original Environmental Assessment. The lower activity levels of the new forecasts would produce less environmental effects than disclosed in the original Environmental Assessment. Therefore, no unanticipated cumulative environmental impacts would arise over what was identified and disclosed in that document.

With the passage of time, consideration was also given to how conditions in the airport environs have changed and altered cumulative impacts in combination with the new forecasts. A number of regional and airport projects have occurred in the Airport vicinity. Relative to the changes in noise, land use compatibility, air quality and induced development, these regional development actions were also considered.

The above mentioned regional projects are expected to continue development of the area in the vicinity of Hillsboro Airport, and to add surface traffic to area streets in response to the anticipated increases in population that are expected to inhabit the area regardless of whether the project is completed. Proposed street improvements are expected to occur in response to the added surface traffic. None of the anticipated regional improvements in combination with the proposed airport project are expected to produce significant cumulative impacts. While construction of some regional (non-airport) development would likely occur at the same time as construction of the proposed airport runway project, the Port of Portland will coordinate with the City of Hillsboro and Washington County concerning construction haul routes, and road closures/detours that might occur from City/County projects to minimize and avoid adverse effects.

Noise and Land Use: Cumulative noise impacts would be significant if the combined effects of the proposed action coupled with other anticipated projects or actions resulted in a DNL 1.5 dB increase in noise levels compared to the No Action Alternative at a noise-sensitive land use

where the DNL is at or above 65 dBA. The DNL 65 noise contour was found to fall completely on Airport property at higher activity levels examined in the original Environmental Assessment than would occur with the Unconstrained, Constrained, or Remand Forecasts. None of the past, present, and reasonably foreseeable Airport projects would alter the aircraft activity levels or traffic patterns. No actions by the City of Hillsboro, Washington County, other parties (such as Metro), or private developers in the Airport environs have the potential to affect aircraft noise levels. In the absence of other sources of aircraft noise, there is no potential for the project to contribute to a cumulatively significant increase in aircraft noise exposure.

Aircraft noise exposure was then considered in combination with other noise sources in the Airport environs. No significant non-aircraft noise sources were identified in the Airport environs other than surface traffic movement which would be expected to be the primary contributor to the ambient sound level of less than 55 DNL in the Airport vicinity.²⁸ Aircraft noise associated with the Airport and the proposed project would be less than 65 DNL off-airport, as the Airport's noise contours fall completely on airport lands. No significant regional projects were identified that have the potential to generate more than the existing ambient noise levels. Therefore, no significant adverse noise impacts are expected.

Air Quality: A significant impact to air quality could occur if the project, when considered in combination with other past, present, or reasonably foreseeable actions, would exceed a National Ambient Air Quality Standard or would not conform to the State Implementation Plan. The analysis documented in **Chapter 7.b**. (*Air Quality*) shows that the proposed project would either reduce emissions and be *de minimis*, or if the Remand Forecasts occurred, would slightly increase emissions but remain well below the *de minimis* level.

Children's Health and Safety Risk: According to the USEPA:

Lead (Pb) is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been from fuels in on-road motor vehicles (such as cars and trucks) and industrial sources. As a result of EPA's regulatory efforts to remove lead from on-road motor vehicle gasoline, emissions of lead from the transportation sector dramatically declined by 95 percent between 1980 and 1999, and levels of lead in the air decreased by 94 percent between 1980 and 1999. Today, the highest levels of lead in air are usually found near lead smelters. The major sources of lead emissions to the air today are ore and metals processing and piston-engine aircraft operating on leaded aviation gasoline. (http://www2.epa.gov/lead/learn-about-lead#found)

The USEPA has adopted national ambient air quality standards (NAAQS) for various criteria pollutants, including lead. The area around Hillsboro Airport currently and is expected to continue to meet the USEPAs NAAQS for lead. This area is designated as attainment for this pollutant and has no history of exceeding the USEPA lead standards. Although measurements have not been conducted immediately adjacent to Hillsboro Airport, measurements elsewhere have not led the State or local air agency to indicate that there are exceedances of the standard.

The NAAQS are designed by the USEPA to protect public health and welfare with an adequate margin of safety and with consideration given to sensitive populations. As noted by the USEPA:

²⁸ EPA, Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety; March 1974; Figure 1.

The Clean Air Act, which was last amended in 1990, requires EPA to set National Ambient Air Quality Standards (40 CFR part 50) for pollutants considered harmful to public health and the environment. The Clean Air Act identifies two types of national ambient air quality standards. *Primary standards* provide public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly. *Secondary standards* provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings." (<u>http://www.epa.gov/air/criteria.html</u>)

Thus, the USEPA standards are designed to protect all populations, including children.

The Port of Portland has worked with ODEQ to study lead dispersion, in a project independent of the proposed runway at Hillsboro. As part of the Portland Air Toxics Solutions project, ODEQ modeled lead concentrations along with other air toxics within the Portland-Vancouver air shed using the CALPUFF atmospheric dispersion modeling system; this model is most often used to assess dispersion over long distances, from tens to hundreds of kilometers. The lead emission inputs to ODEQ screening modeling analysis were based on the emissions from 2005 operations at Hillsboro Airport. The results of a screening level model run showed an area around the Airport that had the potential to have ambient lead concentrations greater than the NAAQS of 0.15 μ g/m³ (calendar quarter average). This initial screening level model run, however, incorporated all lead emissions at Hillsboro Airport as a ground-level area source and did not account for dispersion effects from aircraft in flight and operating beyond the airport boundary. The model was subsequently refined by ODEQ by adjusting the emission release parameters to more accurately simulate emissions from actual flight operations. The refined model showed a maximum predicted concentration of 0.00331 μ g/m³ at "receptor" level (ground level), well below the NAAQS of 0.15 μ g/m³.

The Final Supplemental EA includes a study prepared by the Port, performed in the fall of 2010, in response to the ODEQ's initial evaluation of lead emissions. The Port separately retained CDM to model lead emissions associated with Hillsboro Airport's 2007 operations using the FAA's required model, the Emissions Dispersion Modeling System (EDMS). EDMS uses the AERMOD atmospheric dispersion model to complete the dispersion analysis. AERMOD is the model recommended by USEPA for near-field lead dispersion analysis. The maximum modeled concentration for lead around the Airport was, 0.00405 μ g/m³, closely approximating the results of ODEQ's refined model. That 2010 Port study provides an indication of how emissions from Hillsboro Airport can be compared with the NAAQS. The lead NAAQS is 0.15 μ g/m³ evaluated as a calendar quarter average. Using 2007 activity levels (at 240,735 annual operations of which approximately 110,929 used lead-based fuel) the Port study evaluated aircraft lead emissions associated with aviation gasoline ("AvGas" or "100LL").

The analysis conducted for the study produced the highest concentration of lead emissions at $0.06567 \ \mu g/m^3$, which is less than 50% of the lead NAAQS. The modeled concentration of $0.06567 \ \mu g/m^3$ for year 2007 total activity would correspond to the emission inventory reported in the original Environmental Assessment at 0.622 tons of lead emitted per year as they both examined 2007 activity levels. Thus, as the proposed project would result in either no increase in lead emissions, or an increase in lead emissions of 0.1 ton, relative to the No Action Alternative when considering the Remand Forecast, no violation of the NAAQS is expected to result from the proposed runway construction.

The USEPA has set the *de minimis* level for lead emissions at 25 tons per year. If the Hillsboro Airport area was designated as non-attainment for lead (meaning that measurements had identified violations of the NAAQS), expected emissions from all of the forecast analyses would be considered *de minimis* for the project. As noted earlier, the project-related emission would be highest if the Remand Forecast occurs, which relative to the Constrained Forecast, would generate 0.1 ton project-related emissions per year. Under the General Conformity regulations, no further analysis would be required if the emissions were less than 25 tons per year. For these reasons, the FAA concluded that there would be no significant risks to children's health and welfare.

Climate: The cumulative impact of this proposed action on the global climate when added to other past, present, and reasonably foreseeable future actions is not currently scientifically predictable. Aviation has been calculated to contribute approximately 3 percent of global carbon dioxide (CO₂) emissions; this contribution may grow to 5 percent by 2050. Actions are underway within the U.S. and by other nations to reduce aviation's contribution through such measures as new aircraft technologies to reduce emissions and improve fuel efficiency, renewable alternative fuels with lower carbon footprints, more efficient air traffic management, market-based measures and environmental regulations including an aircraft CO₂ standard. The U.S. has ambitious goals to achieve carbon-neutral growth for aviation by 2020 compared to a 2005 baseline, and to gain absolute reductions in greenhouse gas emissions by 2050. At present there are no calculations of the extent to which measures individually or cumulatively may affect aviation's CO₂ emissions. Moreover, there are large uncertainties regarding aviation's impact on climate. The FAA, with support from the U.S. Global Change Research Program and its participating federal agencies (e.g., NASA, NOAA, EPA, and DOE), has developed the Aviation Climate Change Research Initiative (ACCRI) in an effort to advance scientific understanding of regional and global climate impacts of aircraft emissions, with quantified uncertainties for current and projected aviation scenarios under changing atmospheric conditions.²⁹

Farmland: The Farmland Protection Policy Act (FPPA) was enacted to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures that to the extent possible federal programs are administered to be compatible with state, local units of government, and private programs and policies to protect farmland. A significant cumulative impact for federal projects is determined by reference to the National Resource Conservation Service's (NRCS) Form AD-1006, which scores the potential impacts a project would have on protected farmlands. Under the relevant significance criterion, a significant impact would occur if a proposed project has a farmland impact in a range between 200 and 260 on Form AD-1006. While there is no mitigation requirement under the FPPA for exceeding the threshold of significance, the score is used as an indicator for the project sponsor to consider alternative sites. The original Environmental Assessment showed that the proposed project would have a score of 107, substantially less than the threshold of significance.

The FPPA defers to local jurisdictions regarding the identification of areas as having the appropriate soils and conditions to be designated as prime farmland, unique farmland, or land of state or local importance. This typically occurs through the zoning of the site. In the case of the

²⁹ Nathan Brown, et. al. *The U.S. Strategy for Tackling Aviation Climate Impacts*, (2010). 27th International Congress of the Aeronautical Sciences.

proposed new runway, the project would occur on airport lands, and the Airport is zoned as Airport Use (AU) in the City of Hillsboro zoning code. The City of Hillsboro's AU zone allows for "Agricultural activities, including activities, facilities and accessory structures that qualify as a "farm use" as defined in ORS 215.203 or "farming practice" as defined in ORS 30.930". While farm use is allowed in the AU, all uses are to be in accordance with the intended purpose of the lands. The zoning ordinance indicates that the purpose of the zone is "to encourage and support the continued operation and vitality of the Hillsboro Airport by allowing airport and aviation-related commercial, industrial and recreational uses in accordance with state laws. These laws are intended to promote a convenient and economic system of airports in the state and for land use planning to reduce the risks to airport operators and nearby land uses." Because the project would occur on land zoned for airport purposes, there would be no farmland impacts. Therefore, the project would not result in adverse cumulative farmland effects.

Fish, Plants, and Wildlife: The proposed project would increase the amount of impervious area draining to Glencoe Swale and Dawson Creek. No federally listed fish are present in these waterways, although listed and non-listed fish are likely to be present in downstream receiving waters (McKay Creek and Rock Creek, respectively). Storm water runoff from the project would be mitigated through water quality treatment of all runoff from new impervious surfaces. In Dawson Creek drainage, storm water runoff would increase less than 1 percent (see original Environmental Assessment). This increase would have no measurable effect on aquatic habitat in Dawson Creek, and less effect on Rock Creek, which is further downstream. In the absence of any measureable effect on this water body, it is unlikely that the project would contribute to potentially significant cumulative impacts to listed and non-listed fish species in this basin.

Relative to the Glencoe Swale drainage, the project would increase storm water runoff by 5.9 percent for the 10-year storm, and by 4.0 percent for the 100-year storm (see original Environmental Assessment). It would not contribute to significant cumulative impacts in the basin when considered in combination with other past, present, and reasonably foreseeable actions for the following reasons:

- Federally listed fish would not be affected because the fish are not present and no suitable habitat for these species occurs at the Airport or in the vicinity. Furthermore, the evaluation of impacts to fish included the effects of past projects in the drainage basin, indicating that the cumulative impact of the project combined with the past actions would not be significant.
- The present and reasonably foreseeable future Airport projects would also increase the amount of impervious surface on and around the Airport, depending upon the final project design; however, all such projects would be required to meet applicable water quality standards in order to obtain the water quality permits. Compliance with these permit requirements will ensure that these current and future actions do not result in significant cumulative impacts on aquatic habitat for listed and non-listed species.
- Anticipated off-airport development in the Evergreen Special Industrial District north of the Airport and elsewhere in the environs would also increase the amount of impervious surface, but for the same reasons noted above, the permits required for this development will mandate the protection of water quality, foreclosing cumulative impacts on fish.

No federally listed threatened or endangered animal species, or species proposed for listing under ESA are known to be present in the project area and the project would not modify any known

federally designated critical habitat. The project would reduce grass/forb ground cover and pastures by 70.4 acres. These areas represent habitat for voles and other small mammals as well foraging areas for birds. The loss of small mammal habitat would also reduce the prey base for raptors such as barn owls. The other present and reasonably foreseeable Airport projects would also convert grass/forb and wetland habitat. The amount of habitat loss would depend upon the final design of these projects. This grass/forb habitat is the most common habitat type at Hillsboro Airport and its environs, and the loss from this project would not reduce the amount of available habitat in this area substantially.

Development in the Evergreen Special Industrial District and elsewhere in the Airport environs would reduce the amount of habitat available for wildlife, especially for small rodents. Removal of small patches of trees to facilitate development may reduce habitat that may be used by larger mammals and numerous bird species, including raptors. The specific nature of future development and its consequences will depend upon the actions of the City of Hillsboro, Washington County, and other parties (such as Metro), as well as numerous private development, and cannot be reasonably foreseen at this time.

Hillsboro Airport is located in an urban growth area as designated by Metro policy. In the course of urbanization, natural habitat throughout the area will be converted to urban uses. The direct loss of grass/forb mowed, improved pasture associated with construction of the proposed project would represent a very small portion of the past and potential changes in habitat in the Airport environs. The Airport would continue to have a substantial amount of grass/forb and improved pasture habitat following construction, and these habitats are abundant in the locality. Thus, even with the expected development in the Airport environs, the project would not be expected to contribute to a significant cumulative impact on wildlife from habitat loss.

Past, present, and reasonably foreseeable projects at the Airport have occurred and would in the future take place wholly within the highly managed and maintained airfield. Potential impacts on vegetation involve the direct conversion of relatively uniform monotypic airfield turf grasses or agricultural grass crops (also monotypic) associated with Airport runway and taxiway infrastructure. No federally-listed threatened or endangered plant species are documented at the Airport. The highly altered conditions and ongoing disturbances to vegetation incurred by airfield maintenance indicate that it is extremely unlikely that listed plants would be present. The Evergreen Special Industrial District consists of farmland that will be converted to industrial use. These farmlands are typically uniform monotypic crops and no threatened or endangered plant species are known to exist in the area. Because of the low potential for encountering listed plant species and the abundance of similar vegetation in the Hillsboro area, no significant cumulative impacts on plants are expected to occur.

Floodplains: A significant cumulative floodplains impact could occur if the project alternatives, when considered in combination with other past, present, or reasonably foreseeable actions, adversely effected floodplain values. As the proposed project would not affect floodplains, it cannot add to past, present and future impacts to floodplains.

Hazardous Materials: A significant cumulative impact related to hazardous materials could occur if the project, when considered in combination with other past, present, or reasonably foreseeable actions, would:

- Involve a property on or eligible for the National Priorities List (NPL)
- Result in the sponsor having difficulty meeting applicable local, state, or federal laws and regulations on hazardous materials
- Involve unresolved issues regarding hazardous materials

As noted in the evaluation of hazardous materials, the project would not result in the above conditions and thus no significant adverse impacts are expected.

Water Quality: A significant cumulative impact on water quality could occur if the project, when considered in combination with other past, present, or reasonably foreseeable actions, would exceed water quality standards, cause water quality problems that could not be avoided or satisfactorily mitigated, or result in difficulty in obtaining a permit or authorization. Approximately 13.3 acres of the new impervious surface from the project would be within the Glencoe Swale drainage area, and 2 acres would be in the Dawson Creek drainage area. The quantity and quality of storm water runoff from the project in both basins would be mitigated through treatment of all runoff from new impervious surfaces with vegetated filter strips, which decrease flow velocities and remove pollutants.

The cumulative effect of the project, when considered in combination with other past, present, and reasonably foreseeable actions noted in Table 6-4, would not be significant for the following reasons:

- The evaluation of water quality includes the effects of past projects on water quality in the drainage basin. As noted, that analysis concludes that water quality in Glencoe Swale would continue to meet applicable water quality criteria, indicating that the cumulative impact of the project alternatives combined with the past Port of Portland and other actions would not be significant.
- The Port's 1992 NPDES permit was renewed which requires implementation of a program to manage deicing runoff at Hillsboro Airport. The Port performs pavement deicing at the Airport and in winter of 2012, deiced pavement twice. The Port voluntarily established a monitoring plan and collected samples to better understand runoff water quality. There were no significant levels of biological oxygen demand (BOD) or other contaminants in the runoff associated with the deicing.

Subsequently, several tenants expressed an interest in aircraft deicing. The Port informed these tenants that all deicing runoff from aircraft deicing must be collected and appropriately disposed or could be discharged to the sanitary system subject to Clean Water Services requirements, to be negotiated between the tenant and Clean Water Services (ODEQs agent). Hillsboro Aviation submitted an aircraft deicing plan to the Port for approval in compliance with the NPDES, which was approved. The plan calls for Hillsboro Aviation to set-up a temporary aircraft deicing bath and to collect the discharge that would then be trucked off-site. The renewed permit will require that discharges meet ODEQ standards.

• The current and future projects noted in the original Environmental Assessment and this Supplemental Environmental Assessment would increase the amount of impervious surface on and around the Airport; however, these projects would be required to meet applicable water quality standards as a condition for obtaining the required water quality permits. Compliance with these permit requirements will ensure that these other current

and future actions would not contribute to significant water quality impacts on the Glencoe Swale basin when considered in combination with the proposed project.

Hillsboro Airport is located in an area that has experienced and will continue to experience substantial urbanization. The specific nature of future urban development in this area will depend upon the actions of the City of Hillsboro, Washington County, other parties (such as Metro), and numerous private developers. Although future development in the Evergreen Special Industrial District and elsewhere in the Airport environs would likely increase impervious surface, and some projects would likely entail wetland fills, the timing and pattern of this development cannot be reasonably foreseen at this time. For this same reason, future development in the area will be required to comply with permits administered by Oregon DEQ, Clean Water Services and the City of Hillsboro. These permits will protect water quality and foreclose potential significant cumulative impacts on the Glencoe Swale basin through requirements such as best storm water management practices.

Wetlands: A significant cumulative impact on wetlands could occur if the project alternatives, when considered in combination with other past, present, or reasonably foreseeable actions, adversely affected the ability of wetlands to provide certain ecological functions. The wetlands analysis includes impacts on other regulated features, such as ditches ("other waters"). The analysis concluded that construction of the proposed project would result in permanent loss of 1.92 acres of low quality wetlands. All effected wetlands are vegetated primarily, by non-native grasses and opportunistic weedy species. These impacts would be mitigated to address losses of functions and values. In addition to these impacts, 0.09 acre (approximately 4,000 square feet) of ditches regulated by the USACE as "other waters" would also be affected. These ditches are man-made storm water conveyances, un-vegetated, and with gravel bottoms, with no quantifiable ecological significance. The ditches are narrow (2-4 ft) and shallow (1ft) features that were designed to effectively convey storm water from the adjacent impervious surfaces. Vegetation in the ditches is routinely maintained and flow is only in response to storm water runoff. Therefore, these ditches do not support fish or other aquatic species and there is no cover or forage for terrestrial species. The sole basis for the exercise of jurisdiction over these ditches is their hydrologic connection to waters of the United States. Some of the present and reasonably foreseeable airport projects would likely require additional wetland fill. The amount of wetland loss would depend upon the final design of these projects. Any unavoidable wetland loss would be mitigated in accordance with permit requirements.

Industrial development is likely to occur in the Evergreen Special Industrial District. Development in this area and elsewhere in the Airport environs may entail wetland fill. The specific nature of future development and its wetland impacts would depend upon the actions of the City of Hillsboro, Washington County, and other parties (such as Metro), as well as numerous private developers, and cannot be reasonably foreseen at this time. Similar to what is required for the proposed project mitigation, these wetland fill projects would be subject to permitting requirements that would address their impacts on wetland functions and values, and as such would prevent cumulative impacts when combined with this project.

Construction: FAA Order 1050.1E (change 1), Appendix A.18 states: "Construction impacts alone are rarely significant pursuant to NEPA." Appendix A.18 notes: "A significant impact would occur when the severity of construction impacts cannot be mitigated below FAA's

threshold levels for the effected resource." A significant cumulative construction impact could therefore occur if the combined effects of construction activity associated with the proposed project, combined with the effects of other concurrent construction activities, would exceed the FAA threshold of significance for any resource category.

Construction could generate noise and air quality impacts associated with the use of heavy equipment for earth-moving onsite for the proposed projects as well as heavy trucks required to haul materials to the site. In addition, construction activity could generate temporary increases in storm water runoff, erosion, and sedimentation.

Given the temporary nature of construction impacts, cumulative impacts from other construction activities would need to occur during the same time period as the proposed project (in 2013/2014) to constitute a cumulative effect. Airport and regional projects that might occur in the 2013/2014 timeframe are:

- Runway 2-20 reconstruction project,
- HIO Terminal Ramp,
- Various airport area roadway improvements, such as the Veterans Drive extension,
- Continued expansion/improvement of the Intel campus, and
- Other general regional urbanization.

Construction activity associated with the proposed project would take place in the northeast quadrant of the Airport, an area surrounded by agricultural and industrial land uses, although several isolated houses are also located in this general area. While no known regional projects are anticipated in the immediate vicinity of the proposed project, regional projects could also be located in the northeast quadrant of the Airport.

The proposed project would temporarily increase noise and emissions during construction. Peakyear construction emissions for each pollutant would be less than 7 tons per year. No significant regional projects are known to exist that, in combination with the construction emissions from the proposed project, would generate carbon monoxide emissions above the *de minimis* threshold for attainment areas. Therefore, significant cumulative construction emissions are not anticipated.

Construction noise from the proposed project could reach 49 to 59 DNL in properties immediately adjacent to the Airport.³⁰ To achieve a significant project-related increase, these areas would need to be impacted by a cumulative noise level of 65 DNL. A doubling of sound occurs when two equal sound sources combine, such as two 60 DNL sources combining to produce a 63 DNL sound level. If off-airport sources had an existing ambient noise level of 59 DNL, the combined noise effects of the peak construction noise would be 62 DNL (59 DNL and ambient of 59 DNL). If ambient noise in adjacent areas were 64 DNL, the combination with construction noise from the project (59 DNL and 64 DNL) would be 65.2 DNL. In this later case, while the property would not be compatible with the cumulative short-term construction exposure, the project-related change would be less than 1.5 DNL and thus, the secondary FAA

³⁰ Original Environmental Assessment, Construction Impact Analysis.

threshold of significance (a 1.5 DNL increase to noise sensitive uses within 65 DNL) would not be triggered. If a peak project construction noise (59 DNL) combined with ambient noise on adjacent property of 65 DNL, the resulting cumulative impact would be approximately 66 DNL (a 1 DNL increase) also well below the FAA's thresholds. For these reasons, the proposed project construction noise would not generate a significant cumulative noise impact.

Construction impacts on water quality associated with the project would primarily consist of sediment release through storm water runoff. Measures to prevent construction impacts associated with erosion and sediment would be required and enforced through the Port's NPDES 1200-CA permit. Compliance with these requirements would preclude the construction impacts of the project from contributing to potentially significant cumulative impacts to water quality. In addition, other projects in the area would have similar permit requirements such that cumulative impacts would be avoided.

Based on the prior analysis, the proposed project is not expected to produce cumulative construction impacts.

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