APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): 19 April 2018

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Portland District, Port of Portland: Hillsboro Airport (HIO) Runway Safety Area NWP 2017-433

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: **Oregon** County/parish/borough: **Washington** City: **Hillsboro**
Center coordinates of site (lat/long in degree decimal format): **Lat. 45.550483 Long. -122.959519**
Universal Transverse Mercator:
Name of nearest waterbody: **Glencoe Swale**
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Tualatin River**
Name of watershed or Hydrologic Unit Code (HUC): **Lower McKay Creek HUC 170900100307**

☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☒ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form. **Other areas of the HIO were previously delineated, see AJD NWP 2008-658/5**

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☒ Office (Desk) Determination. Date: **7 December 2017**
☒ Field Determination. Date(s): **25 October 2017**

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **are and are not** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
      ☐ TNWs, including territorial seas
      ☐ Wetlands adjacent to TNWs
      ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs **Glencoe Swale, Un-named Tributary to Glencoe Swale, Ditch 1, Ditch 2**.
      ☐ Non-RPWs that flow directly or indirectly into TNWs
      ☒ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs **Wetland A, Wetland B, Wetland C, Wetland J, Wetland K**
      ☒ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs **Wetland D, Wetland E, Wetland F, Wetland G**
      ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
      ☐ Impoundments of jurisdictional waters
      ☒ Isolated (interstate or intrastate) waters, including isolated wetlands **Wetland H and Wetland I**

   b. **Identify (estimate) size of waters of the U.S. in the review area: Glencoe Swale, Un-named Tributary to Glencoe Swale, Ditch 1, Ditch 2**.
      Non-wetland waters: **3,643linear feet**: width (ft) and/or **0.317 acres**.

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

Waters of the U.S.	OHWM Width (ft)	Length (ft)	Acreage
Ditch 1	1	37	0.001
Ditch 2	3	648	0.045
Glencoe Swale	4	2,313	0.212
Unnamed Tributary to Glencoe Swale	4	645	0.059
Total	n/a	3,643	0.317

Wetlands: **15.546 acres. Wetland A, Wetland B, Wetland C, Wetland J, Wetland K, Wetland D, Wetland E, Wetland F, Wetland G**

Wetland Waters of the U.S.	Acreage
Wetland A	0.011
Wetland B*	1.903
Wetland C*	3.228
Wetland D	1.754
Wetland E	2.228
Wetland F	0.772
Wetland G	0.362
Wetland J	4.355
Wetland K	0.933
Total	15.546

* Wetland B and Wetland C are likely one continuous wetland, connected by Glencoe Slough; however, the area in between these two wetlands was not part of the study area and therefore was not delineated.

c. Limits (boundaries) of jurisdiction based on: **1987 Delineation Manual**
Elevation of established OHWM (if known): .

2. Non-regulated waters/wetlands (check if applicable):[3]

☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
Explain: **Wetland H and Wetland I. Wetland H and Wetland I appear to be located within depressions formed by agricultural activities and do not appear to receive flows from or drain into any other wetlands or waters.**

Non-regulated Waters	Acreage
Wetland H	0.115
Wetland I	0.132
Total	0.247

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

[3] Supporting documentation is presented in Section III.F.

1. **TNW**
   Identify TNW: **N/A**.

   Summarize rationale supporting determination: **N/A**.

2. **Wetland adjacent to TNW**
   Summarize rationale supporting conclusion that wetland is "adjacent": **N/A**.

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. **Characteristics of non-TNWs that flow directly or indirectly into TNW**

   (i) General Area Conditions:
   Watershed size: **114,100 acres**
   Drainage area: **19,027 acres**
   Average annual rainfall: 34 inches
   Average annual snowfall: 0 inches

   (ii) Physical Characteristics:
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through **2** tributaries before entering TNW. **Glencoe Swale**
   Tributary flows through **3** tributaries before entering TNW. **Ditch 1, Ditch 2, Un-named tributary to Glencoe Swale**

   Project waters are **10-15** river miles from TNW.
   Project waters are **1 (or less)** river miles from RPW.
   Project waters are **2-5** aerial (straight) miles from TNW.
   Project waters are **1 (or less)** aerial (straight) miles from RPW.
   Project waters cross or serve as state boundaries. Explain: **N/A**.

   Identify flow route to TNW[5]: Glencoe Swale flows into McKay Creek, into Dairy Creek and into the Tualatin River.
   Tributary stream order, if known: .

   (b) General Tributary Characteristics (check all that apply):
   Tributary is: ☐ Natural
   ☒ Artificial (man-made). Explain: **Ditch 1 and Ditch 2 are constructed components of the HIO stormwater system.**

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

☒ Manipulated (man-altered). Explain: **Glencoe Swale and the Un-named tributary to Glencoe Swale are natural drainages that have been altered by grading and fill activities associated with construction of the Hillsboro Airport and surrounding development.**

Tributary properties with respect to top of bank (estimate):
Average width: **1-4** feet
Average depth: **unknown** feet
Average side slopes: **unknown.**

Primary tributary substrate composition (check all that apply):

☒ Silts	☒ Sands	☐ Concrete
☒ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☒ Vegetation. Type/% cover: **reed canarygrass**	
☐ Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **Appear to be in stable condition.**
Presence of run/riffle/pool complexes. Explain: **none.**
Tributary geometry: **Glencoe Swale is slightly meandering; Un-named tributary to Glencoe Swale, Ditch 1 and Ditch 2 are linear.**
Tributary gradient (approximate average slope): **variable** %

(c) Flow:
Tributary provides for: **Seasonal flows (Glencoe Swale, Un-named tributary to Glencoe Swale, Ditch 1 and Ditch 2)**
Estimate average number of flow events in review area/year: **20 (or greater)**
Describe flow regime: **Multiple rain events in winter, infrequent rain events in summer.**
Other information on duration and volume: .

Surface flow is: **Overland sheetflow** Characteristics: **Overland sheetflow from surrounding uplands drains into Glencoe Swale, Un-named tributary to Glencoe Swale, Ditch 1 and Ditch 2.**

Subsurface flow: **yes** Explain findings: **Observations from Port staff during previous construction activities at HIO and seasonal high water table.**
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☒ Bed and banks
☒ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☒ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☐ water staining	☐ abrupt change in plant community
☐ other (list):	

☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: **Surface flows from the adjacent uplands flow into Glencoe Swale, Un-named tributary to Glencoe Swale, Ditch 1 and Ditch 2. These waters flow into the Tualatin River.**

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

Identify specific pollutants, if known: **Herbicides and fertilizer components would be present if they are applied in the nearby uplands. Contaminants (motor oil) from runoff from nearby roads.**

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .
☐ Wetland fringe. Characteristics: .
☒ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☒ Aquatic/wildlife diversity. Explain findings: **Vegetation within Glencoe Swale, Un-named tributary to Glencoe Swale, Ditch 1 and Ditch 2, serve as habitat for amphibians and invertebrates. Glencoe Swale, Un-named tributary to Glencoe Swale, Ditch 1 and Ditch 2 convey detritus needed for amphibians and invertebrates.**

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW - Wetland A, Wetland B, Wetland C, Wetland D, Wetland E, Wetland F, Wetland G, Wetland J, Wetland K

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: **15.546 acres (Wetland A, Wetland B, Wetland C, Wetland D, Wetland E, Wetland F, Wetland G, Wetland J, Wetland K)**

Wetland type. Explain: **Cowardin PEM (Wetland A, Wetland B, Wetland C, Wetland D, Wetland E, Wetland F, Wetland G, Wetland J, Wetland K)**

Wetland quality. Explain: **Wetland A, Wetland B, Wetland C, Wetland D, Wetland E, Wetland F, Wetland G, Wetland J, Wetland K are low quality wetlands. These wetlands are located in an area disturbed by agricultural activities and construction of HIO.**

Project wetlands cross or serve as state boundaries. Explain: **N/A**.

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent** Explain:

Wetland A: Intermittent input of stormwater from culvert, overland flow from surrounding uplands, and seasonal high water table.
Wetland B: Intermittent flows from seasonal high water table, seasonal overbank flooding from the Glencoe Swale, piped stormwater flow from a culvert (located at the northern edge of Wetland B), and stormwater flows from another culvert (located at the southern edge of Wetland B) that drains overland flows from the runway and taxiway areas.
Wetland C: Intermittent flows from seasonal high water table, overland flow from uplands, direct precipitation, seasonal overbank flooding from the Glencoe Swale, and seasonal inflow from four culverts.
Wetland D: Intermittent flows from seasonal high water table, overland flow from surrounding uplands and direct precipitation.
Wetland E: Intermittent flows from overland flow from the agricultural area immediately to the north of the wetland, seasonal high water table, and inflow from a piped stormline along the southern edge NW Evergreen Road, and a culvert that conveys drainage from Wetland F.
Wetland F: sources of hydrology include precipitation, overland flow from the agricultural area northwest of the wetland, and seasonal high water table.
Wetland G: Intermittent flows from overland flow.
Wetland J: Intermittent flow from overland flow, seasonal high water table, direct precipitation, seasonal overbank flooding from Glencoe Swale, and inflow from an off-site roadside ditch.
Wetland K: Intermittent flow from seasonal high water table, direct precipitation, seasonal overbank flooding from Glencoe Swale, and inflow from a roadside ditch

Surface flow is**: Confined (Wetland A, B, C, D, E, F, J, K) Overland Flow (Wetland G)**

Characteristics:

Wetland A: Surface flow from Wetland A is confined to the excavated roadside ditch adjacent to NE 25th Ave.
Wetland B: Surface flow from Wetland B is confined to Glencoe Swale.
Wetland C: Surface flow from Wetland C is confined to the unnamed tributary of Glencoe Swale which then flows into Glencoe Swale.
Wetland D: Surface flow from Wetland D is routed through a culvert that runs underneath the runway and then exits into the Glencoe Swale through a culvert located at the eastern end of Wetland B
Wetland E: Surface flow from Wetland E drains into a culvert. This culvert drains in a southern direction, under the access road exiting the culvert into Wetland B.
Wetland F: Surface flow from Wetland F flows into a culvert located at the south western corner of Wetland F which runs under a secondary airport service road and drains Wetland F into Wetland E.
Wetland J: Surface flows from Wetland J is confined to Glencoe Swale

Wetland K: Surface flows from Wetland K is confined to Glencoe Swale.

Wetland G: Overland flow flows into Wetland C during larger storm events.

Subsurface flow: **Unknown** Explain findings: .
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☒ Directly abutting **Wetland A, Wetland B, Wetland C, Wetland J, Wetland K**
☒ Not directly abutting
☒ Discrete wetland hydrologic connection. Explain: **Wetland D, Wetland E, and Wetland F. Wetland D drains into Glencoe Swale via culvert; an airport access road separates Wetland D from Glencoe Swale. Wetland E drains into Glencoe Swale via culvert; an airport access road separates Wetland D from Glencoe Swale. Wetland F drains into Wetland E via a culvert; airport access road separates Wetland F from Wetland E; Wetland E then drains into Glencoe Swale via a culvert.**
☐ Ecological connection. Explain: .
☒ Separated by berm/barrier. Explain: **Wetland G. Wetland G is separated from Wetland C by a low berm, drainage from Wetland G flows into Wetland C during storm events.**

(d) Proximity (Relationship) to TNW
Project wetlands are **10-15** river miles from TNW.
Project waters are **2-5** aerial (straight) miles from TNW.
Flow is from: **Wetland to navigable waters**
Estimate approximate location of wetland as within the **2 year or less** floodplain.

(ii) Chemical Characteristics:
Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: **Overland flow from adjacent uplands flows into Wetland A, B, C, D, E, F, G, J, K. These wetlands drain into Glencoe Swale either directly or indirectly (via culvert). The Glencoe Swale flows into McKay Creek, flows in Dairy Creek and then flows into the Tualatin River**
Identify specific pollutants, if known: **Herbicides and fertilizer components would be present if they are applied in the nearby uplands. Contaminants (motor oil, dust, road deicer, fuel) from runoff from nearby roads and airport runway would also be present.**

(iii) Biological Characteristics. Wetland supports (check all that apply):
☐ Riparian buffer. Characteristics (type, average width): .
☒ Vegetation type/percent cover. Explain: **Wetland A, B, C, D, E, F, G, J, K are vegetated with plants including Phalaris arundinacea (FACW), Schedonorus arundinaceus (FAC); Alopecurus pratensis (FAC), Holcus lanatus (FAC)**.
☒ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☒ Aquatic/wildlife diversity. Explain findings: **Wetland A, B, C, D, E, F, G, J, K serve as habitat for mammals, amphibians, and invertebrates.**

3. Characteristics of all wetlands adjacent to the tributary (if any)
All wetland(s) being considered in the cumulative analysis: **9**
Approximately (15.546) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)
Wetland A (Y)	**0.011**	**Wetland F (Y)**	**0.772**
Wetland B (Y)	**1.903**	**Wetland G (N)**	**0.362**
Wetland C (Y)	**3.228**	**Wetland J (Y)**	**4.355**
Wetland D (N)	**1.754**	**Wetland K (Y)**	**0.933**
Wetland E (N)	**2.228**		

Summarize overall biological, chemical and physical functions being performed: **Wetland A, B, C, D, E, F, G, J, K provide detritus export, groundwater filtering and recharge, and assist with surface flow runoff and attenuation before water enters Glencoe Swale.**

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: **Wetland D, E, F, G**

   <u>Wetland D:</u> Stormwater system maps provided by the Port of Portland indicate that drainage from Wetland D is routed through a culvert that runs underneath the runway and then exits into the Glencoe Swale through a culvert located at the eastern end of Wetland B.
   <u>Wetland E:</u> There is a culvert located next to the western end of Wetland E. A slight berm separates Wetland E rom this culvert; however, during storm events overland flows from Wetland E would drain into this culvert. This culvert drains in a southern direction, under the airport access road and flows into Wetland B and into Glencoe Swale.
   <u>Wetland F:</u> Culvert located at the south western corner of Wetland F runs under the airport service road into Wetland E. Wetland E flows into Wetland B (as described above) and then into Glencoe Swale.
   <u>Wetland G:</u> During storm events, overland flow from Wetland G flows into Wetland C, into the Un-named Tributary of Glencoe Swale and then into Glencoe Swale.

   Wetland D, E, F, G provide detritus export, groundwater filtering and recharge, and assist with surface flow runoff and attenuation before water enters the offsite stormwater feature and is transported to Glencoe Swale.

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:
   ☒ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: **Glencoe Swale, Un-named Tributary to Glencoe Swale, Ditch 1, Ditch 2. Source of hydrology is seasonal direct precipitation and overflow; and seasonal high water table.**

Provide estimates for jurisdictional waters in the review area (check all that apply):
☒ Tributary waters: **3,643** linear feet **1-4**width (ft). **Glencoe Swale, Un-named Tributary to Glencoe Swale, Ditch 1, Ditch 2.**
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: **.**

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☒ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☒ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **Wetland A, Wetland B, Wetland C, Wetland J, Wetland K**.

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

Provide acreage estimates for jurisdictional wetlands in the review area: **10.43** acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☒ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C. **Wetland D, Wetland E, Wetland F, Wetland G**

Provide acreage estimates for jurisdictional wetlands in the review area: **5.116** acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

[8]See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☒ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☒ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: **Wetland H and Wetland I**
Wetland H: Wetland H is located in proximity to the base of the Evergreen Road berm in a depression. Wetland H is within a depression formed by agricultural activities and does not appear to receive flows from or drain into any other wetlands or waters.
Wetland I is located in proximity to the base of the Evergreen Road berm in a depression. Wetland H is within a depression formed by agricultural activities and does not appear to receive flows from or drain into any other wetlands or waters.
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply): **N/A**
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☒ Wetlands: **0.247 acres**.

Non-regulated Waters	Acreage
Wetland H	0.115
Wetland I	0.132
Total	0.247

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: *Port of Portland: Hillsboro Airport Runway Safety Area, Wetland Delineation Report, dated September 2017, and Port of Portland: Hillsboro Airport Wetland Delineation Project Memorandum, dated November 2017.*
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☒ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☒ U.S. Geological Survey Hydrologic Atlas: .
☒ USGS NHD data.
☒ USGS 8 and 12 digit HUC maps.

☐ U.S. Geological Survey map(s). Cite scale & quad name: .
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: *Natural Resources Conservation Service), 2017a. Web Soil Survey. Soil Survey Staff, Natural Resources Conservation Service, U.S. Department of Agriculture. Accessed: May 5, 2017. Available from: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.*
☒ National wetlands inventory map(s). Cite name: *U.S. Fish and Wildlife Service), 2016. National Wetlands Inventory Wetlands Mapper. Updated: October 5, 2016. Accessed: September 9, 2016. Available from: http://www.fws.gov/wetlands/Data/Mapper.html.*
☐ State/Local wetland inventory map(s): .
☐ FEMA/FIRM maps: .
☐ 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date): *Historical Aerial Photographs (included in September 2017 Wetland Delineation Report): Historical Aerials obtained from the U.S. Army Corps of Engineers: 1936, 1940, 1947, 1953, 1956, 1963, 1973, 1977, 1980, 1990, 1998. Historical Aerials obtained from Google Earth: 2002, 2011, 2015.*
or ☐ Other (Name & Date): .
☒ Previous determination(s). File no. and date of response letter: *Other areas of the HIO were delineated separately, see NWP-2008-658/5, dated 25 January 2016.*
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☒ Other information (please specify):
*Site Visit: 25 October 2017***.**
Stormwater System Maps (included in September 2017 Wetland Delineation Report): Port of Portland Hillsboro Airport Stormwater Pollution Control Maps 1-7.

B. ADDITIONAL COMMENTS TO SUPPORT JD:

The study area is within a region of the Willamette Valley that is generally characterized by undulating topography that is drained by meandering, low gradient streams and rivers; poorly drained soils, and mild climate and average precipitation of 40-50 inches. The study area is in a highly disturbed area. Human disturbances include past and current agricultural activity, multiple road alignments and airport improvements. The general topography of the study area is flat but slopes down towards Glencoe Swale. Glencoe Swale flows through the study area in an east to west direction. Glencoe swale was realigned in the late 1970's when the Hillsboro Airport (HIO) expanded their operations, NW Evergreen Road was realigned, and NE 25th Avenue was constructed. Other areas of HIO were delineated in the past. See AJD in file NWP 2008-658/5, dated 25 January 2016.

<u>Glencoe Swale (length: 2,313, 4 ft wide)</u>: Glencoe Swale is an intermittent stream. Glencoe Swale consists of a relatively narrow (generally 3 to 5 feet wide) stream channel that flows from east to west across the northern portion of the site and receives surface water from the majority of the study area. The stream channel enters the study area from the northeast through twin concrete culverts under NE Sewell Road. The channel is completely contained within the boundaries of Wetland J as it flows southwest before entering a large concrete box culvert that conveys flow under NW Evergreen Road and into a linear channel contained within Wetland C that also runs parallel to NW Evergreen Road. Flow in Glencoe Swale continues southwest through Wetland B and then enters a roadside culvert under NE 25th Avenue that conveys flow from the swale into Wetland K. The stream channel continues southwest through the northern portion of Wetland K and continues off-site to the southwest. Flow from the Glencoe Swale continues for approximately 2.5 miles before entering McKay Creek, which drains into Dairy Creek, which then flows into to the Tualatin River.

The Glencoe Swale stream channel substrate consists predominantly of fine silts with some sand, gravel, and cobble. Vegetation in the Glencoe Swale is dominated by dense herbaceous vegetation, primarily reed canary grass, both adjacent to and within the channel. Several culverts, and a small intermittent stream (identified as Unnamed Tributary to Glencoe Swale), and outfall pipes within the study area convey flow into Glencoe Swale.

<u>Unnamed Tributary to Glencoe Swale</u>: (length: 645 ft, width: 4 ft) A small intermittent stream that flows through Wetland C, and into Glencoe Swale. This tributary flows east from a developed area, located on the eastern boundary of the study area, through a roadside culvert under NW 268th Avenue into wetland C.

<u>Ditch 1(length: 37 ft, width: 1ft):</u> Ditch 1 contains intermittent flows. Ditch 1 is located in the grassed infield between Runway 13R/31L and Taxiway A. It is approximately 1-foot wide and the substrate consists of 1 to 3 inches of silt loam over gravel. The bottom of Ditch 1 is unvegetated but is surrounded by tall fescue (FAC) and creeping bentgrass (FAC), along with some common plantain (FAC). Only a short segment of Ditch 1 is contained within the study area and is the terminal segment of a long linear ditch that runs between Runway 13R/31L and Taxiway A. Ditch 1 receives surface flow from surrounding airport property and routes it into a 12-inch concrete culvert pipe that conveys the flow into Wetland B.

<u>Ditch 2 (width: 3 ft, length: 648 ft)</u>: Ditch 2 contains intermittent flows. Ditch 2 enters the study area from the south through a 6-inch concrete culvert and runs along the western edge of Taxiway A. It consists of an approximately 3-foot-wide channel that is largely unvegetated except for the presence of some water foxtail (OBL) and slender rush (FAC). Tall fescue and hairy cat's ear (FACU) surround the ditch. The substrate consists of silt loam over gravel. Ditch 2 extends north alongside the western edge of Taxiway A to the east and continues along the toe of slope of the constructed berm to the west. The substrate transitions to gravel as the ditch approaches a 12-inch concrete culvert located at the northeastern toe of slope of the berm and then drains into Wetland B.

Wetland A (0.011 acre): **PEM wetland located within a depression at an outlet of a gated culvert, located at the base of a slope, that drains the airport runway. Stormwater from the culvert flows through Wetland A into an excavated roadside ditch adjacent to NE 25th Avenue that runs outside of the study area boundary along the airport boundary fence. This roadside ditch then drains into Glencoe Swale. Source of hydrology include direct input of stormwater from the culvert, overland flow, and seasonal high water table. The majority of the vegetation is *Alopecurus pratensis* (FAC) and *Schedonorus arundinace*us (FAC). Hydric soil indicator is redox dark surface. Hydrologic indicators are high water table, saturation, algal mat or crust, and sparsely vegetated concave surface.**

Wetland B* (1.903 acre): **PEM wetland that occurs in and around Glencoe Swale, extending up both the northern and southern slopes of Glencoe Swale. Source of hydrology is seasonal high water table, flows from Glencoe Swale, piped stormwater flow from a culvert (located at the northern edge of Wetland B) that drains surface flows from the agricultural field to the northwest, and stormwater flows from another culvert (located at the southern edge of Wetland B) that drains overland flows from the runway and taxiway areas. These multiple flow are directed into Glencoe Swale. The majority of vegetation in Wetland A is *Phalaris arundinacea* (FACW), *Schedonorus arundinaceus* (FAC); *Alopecurus pratensis* (FAC). Hydric soil indicators include loamy gleyed matrix, depleted matrix, and redox dark surface. Hydrology indicators include high water table, saturation, and oxidized rhizospheres along living roots. Wetland B is seasonally saturated.**

Wetland C (3.228 acres)*: **PEM wetland located in a depression in and around Glencoe Swale, extending up both the northern and southern slopes of Glencoe Swale; and in a portion of a former agricultural field in the eastern portion of the study area. The northern boundary of Wetland C follows the contour of the toe of the airport access road and Evergreen Road. The eastern portion of Wetland C is bounded by roads on the north, east, and south edges. Sources of hydrology is seasonal overland flow, seasonal high water table, direct precipitation, seasonal overbank flooding from the Glencoe Swale, and seasonal inflow from four culverts. Dominant vegetation in Wetland C includes meadow foxtail (FAC), tall fescue (FAC), common velvet grass (FAC), fowl bluegrass (FAC), Kentucky bluegrass (FAC), and reed canary grass (FACW), which is found both in and around the swale channel. Slender rush (FACW), American purple vetch (FAC), and hairy cat's ear (facultative upland [FACU]) are also present in Wetland C. Soil samples from Wetland C met either the Depleted Matrix (F3) or Redox Dark Surface (F6) hydric soil indicators. Wetland hydrology was confirmed for Wetland C by the presence of oxidized rhizospheres along living roots (C3) at all wetland data plots. Saturation (A3) was also observed at one data plot.**

*** Wetland B and C are likely one continuous wetland. Wetland B is connected to Wetland C via Glencoe Swale; however, the area in between these two wetlands was not part of the study area and therefore was not delineated. This area was previously delineated by ESA Vigil-Agrimis with the results of this study summarized in a June 2015 wetland delineation report entitled Hillsboro Airport Runway Rehabilitation and Helipad Wetland Delineation Report (ESA Vigil-Agrimis 2015), which has been reviewed and approved by both DSL (WD 2015-0329) and the U.S. Army Corps of Engineers (USACE; JD NWP-2008-658[5]).**

Wetland D (1.754-acre): **PEM wetland located in a depression in a grassed infield area between Runway 13R/31L and Runway 13L/31R and is bordered on the north by a gravel access road. Source of hydrology is seasonally saturated with overland flow, seasonal high water table, and direct precipitation. This wetland extends off-site in a southern direction. Wetland D is dominated by tall fescue (FAC), annual bluegrass (FAC), Kentucky bluegrass (FAC), and hairy cat's ear (FACU). Common velvet grass (FAC) is also present in Wetland D. Overall, vegetation in Wetland D meets the Dominance Test and/or the Prevalence Index for hydrophytic vegetation indicator. Overall, soil samples typically met the Depleted Matrix (F3) hydric soil indicator. Wetland hydrology was confirmed in Wetland D by the presence of a High Water Table (A2), Saturation (A3), and/or Oxidized Rhizospheres along Living Roots (C3). Stormwater system maps provided by the Port of Portland indicate that drainage from Wetland D is routed through a culvert that runs underneath the runway and then exits into the Glencoe Swale through a culvert located at the eastern end of Wetland B (see maps page 49 and 51 of delineation report).**

Wetland E (2.228 acres): **PEM wetland that lies within a depression along the northern edge of the airport access road. The lower boundary of Wetland E follows the contour of the bottom of the access road embankment. Sources of hydrology include overland flow from the agricultural area immediately to the north of the wetland, seasonal high water table, and inflow from a piped stormline along the southern edge NW Evergreen Road, and a culvert that conveys drainage from Wetland F. Vegetation is predominately *Phalaris arundinacea* (FACW), *Schedonorus arundinaceus* (FAC); *Alopecurus pratensis* (FAC), and *Holcus lanatus* (FAC). Hydric soil indicator were depleted matrix. Hydrology indicators include the presence of oxidized rhizospheres along living roots. Wetland E is seasonally saturated. There is a culvert located next to the western end of Wetland E. A slight berm separates Wetland E from this culvert; however, during storm events overland flows from Wetland E would drain into this culvert. This culvert drains in a southern direction, under the access road exiting the culvert into Wetland B.**

Wetland F (0.772 acres): **PEM wetland that lies along the northern edge of the airport access road. Wetland F is situated on a concave landform bounded by Evergreen Road to the north, airport access road to the south and a secondary service road to the west. The lower boundary of Wetland F follows the contour of the bottom of the access road embankment. The sources of hydrology include precipitation, overland flow from the agricultural area northwest of the wetland, and seasonal high water table. Vegetation is predominately *Phalaris arundinacea* (FACW), *Schedonorus arundinaceus* (FAC); *Alopecurus pratensis* (FAC), and *Holcus lanatus* (FAC). Hydric soil indicator were depleted matrix. Hydrology indicators include the presence of oxidized rhizospheres along living roots. Wetland E is seasonally saturated. A culvert located at the south western corner of Wetland F runs under a secondary airport service road and drains Wetland F into Wetland E.**

Wetland G (0.362-acre): PEM wetland located east of Wetland C, located in a slight depression. The source of hydrology is overland flow. Dominant vegetation in Wetland G includes meadow foxtail (FAC) and tall fescue (FAC), with Kentucky bluegrass (FAC) also present. Soil samples met the Depleted Matrix (F3). Wetland hydrology indicators are presence of oxidized rhizospheres along living roots (C3). There is very little topography change between Wetland G and Wetland C. During site visit on 25 October 2017, several sample pits were dug in the areas between Wetland G and Wetland C, and at the approximate locations of DP 36 and DP35 to confirm the boundary between Wetland G and Wetland C. The wetland hydrology indicator of presence of oxidized rhizospheres in the pits between Wetland G and Wetland C inconsistently showed trace presence of oxidized rhizospheres. In addition, the area that contains Wetland G and Wetland C is bounded by three raised roads (NW Evergreen Road, NW 268th Ave, and the airport access road) which creates a concave landform in the larger area encompassing both Wetland G and Wetland C. Given the inconsistent presence of the hydrologic indicator in the soil samples between Wetland G and Wetland C taken during the site visit, the encompassing concave landform, and the little topography change between Wetland G and Wetland C, it is likely that there are overland flows between Wetland G and Wetland C during larger storm events.

Wetland J (4.355 acres): PEM wetland located outside of the HIO perimeter fence immediately north of NW Evergreen Road and west of NW Sewell Road on a portion of an actively farmed agricultural field in the northeastern portion of the study area. It includes a section of Glencoe Swale that is completely overgrown with reed canary grass. Wetland J extends up the adjacent slopes of Glencoe Swale into the actively farmed field. Wetland J is located in a slight depression and the northern and southern wetland boundary follows the topography of the site. Source of hydrology is overland flow, seasonal high water table, direct precipitation, seasonal overbank flooding from Glencoe Swale, and inflow from an off-site roadside ditch along NW Sewell Road. Glencoe Swale flows though Wetland J and into Wetland C via two culverts on the south side of NW Evergreen Road. Dominant vegetation in Wetland J includes meadow foxtail (FAC), Kentucky bluegrass (FAC), and perennial rye grass (FAC), which is the crop being grown in the majority of this field. The field, including the Wetland J had been recently harvested and tilled so plants observed in the wetland delineation were not present. Soil samples met the Depleted Matrix (F3) hydric soil indicator. Wetland hydrology was confirmed for Wetland J by the presence of oxidized rhizospheres along living roots (C3). The Surface Soil Cracks indicator (B6) was also observed in one data plot (DP-47).

Wetland K (0.933 acres): PEM wetland located outside the HIO perimeter fence immediately west of NE 25th Avenue on a portion of an actively farmed agricultural field in the westernmost portion of the study area. Wetland K extends offsite in a western direction. The source of hydrology is seasonal high water table, direct precipitation, seasonal overbank flooding from Glencoe Swale, and inflow from a roadside ditch along NE 25th Avenue. Glencoe Swale runs through Wetland K into twin culverts under NE 25th Avenue, connecting this wetland with Wetland B. Dominant vegetation in Wetland K includes annual bluegrass (FAC) and toad rush (FACW), with tall fescue present as the active crop. Soil samples met the Redox Dark Surface (F6) hydric soil indicator. Wetland hydrology indicators are the presence of the primary wetland hydrology indicators Surface Soil Cracks (B6) and Oxidized Rhizospheres along Living Roots (C3).

Wetland H (0.115 acres): PEM wetland located in actively farmed and tilled area within the study area. Sources of hydrology is overland flow, seasonal high water table and precipitation. Dominant vegetation includes planted crop tall fescue (FAC), along with some reed canary grass (FACW) and stinking chamomile (FACU), with substantial bare ground present. Wetland hydrology was determined by the presence of the primary wetland hydrology indicators Algal Mat or Crust (B4), Stunted or Stressed Plants (D1), and Sparsely Vegetated Concave Surface (B8). Wetland H is located in proximity to the base of the Evergreen Road berm in a depression. Wetland H is within a depression formed by agricultural activities and does not appear to receive flows from or drain into any other wetlands or waters.

Wetland I (0.132 acres): PEM wetland located in actively farmed and tilled area within the study area. Sources of hydrology is overland flow, seasonal high water table and precipitation. Dominant vegetation includes planted crop tall fescue (FAC), along with some reed canarygrass (FACW) and stinking chamomile (FACU), with substantial bare ground present. Wetland hydrology was determined by the presence of the primary wetland hydrology indicators Algal Mat or Crust (B4), Stunted or Stressed Plants (D1), and Oxidized Rhizospheres along Living Roots (C3). Wetland H is located in proximity to the base of the Evergreen Road berm in a depression. Wetland H is within a depression formed by agricultural activities and does not appear to receive flows from or drain into any other wetlands or waters.

Waters observed in the immediate vicinity of the study area but not within the study area boundary (documented for administrative record):
NW Sewell Road Roadside Ditch: There is a roadside ditch along NW Sewell road, along the eastern edge of Wetland J. This roadside ditch is located outside of the study area boundary and was not evaluated in this AJD.

NE 25th Avenue Roadside Ditch: Wetland A flows into a roadside ditch that drains into Glencoe Swale. This ditch is adjacent to NE 25th Avenue and is outside the HIO fence and therefore not within the study area. This roadside ditch was not evaluated in this AJD.

Southern piped storm line along NW Evergreen Road: This piped storm line flows into Wetland E. The line is located outside the HIP fence; therefore, not within the study area. This piped stormline was not evaluated in this AJD.