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): January 5, 2018

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Honolulu District, POH- 2017-00216, Halama Street and South of Waiahuli Street

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: Hawaii County: Maui City: Kihei
Center coordinates of site (lat/long in degree decimal format): Lat. 20.7429 ° *N*, Long. -156.45557 °E
Universal Transverse Mercator: 4 N 764955.5E 2295778.7N
Name of nearest waterbody: Halama wetland is approximately 400 feet from the Pacific Ocean
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Pacific Ocean
Name of watershed or Hydrologic Unit Code (HUC): 20020000

☑ 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

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

☑ Office (Desk) Determination. Date: January 5, 2018

☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There appear to be 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.

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There are "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area.

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
☐ Non-RPWs that flow directly or indirectly into TNWs
☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
☐ Impoundments of jurisdictional waters
☐ Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:
Non-wetland waters:
Wetlands: 1.48 acres.

c. Limits (boundaries) of jurisdiction based on: Not Applicable

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:

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

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.

1. TNW

Identify TNW:

Summarize rationale supporting determination:

2. Wetland adjacent to TNW

Summarize rationale supporting conclusion that wetland is "adjacent":

On December 2, 2008, the U.S. Environmental Protection Agency and the Department of the Army published a revised guidance memorandum on "Clean Water Act Jurisdiction Following the U.S Supreme Court's Decision in Rapanos v. United States & Carabell v. United States". One of the topics addressed in the joint guidance was criteria for determination of adjacent wetlands. The guidance stipulated wetlands would be adjacent if any one of three criteria were met: "First, there is an unbroken surface or shallow sub-surface connection to jurisdictional waters. This hydrologic connection may be intermittent. Second, they are physically separated from jurisdictional waters by man-made dikes or barriers, natural river berms, beach dunes, and the like. Or third, their proximity to a jurisdictional water is reasonably close, supporting the science-based inference that such wetlands have an ecological interconnection with jurisdictional waters. Because of the scientific basis for this inference, determining whether a wetland is reasonably close to a jurisdictional water does not generally require a case specific demonstration of an ecologic interconnection. In the case of a jurisdictional water and a reasonably close wetland, such implied ecological interconnectivity is neither speculative nor insubstantial."

The 1.48 acre wetland in the AOR is located approximately 400 feet east of the Pacific Ocean in Kihei, Maui. The project site is separated from the Pacific Ocean by a natural sand dune with a row of homes along it. There is no surface hydrologic connection between the wetland and the Pacific Ocean. Some wetlands in Kihei were formed by smaller channels carrying low volumes of flow which are then trapped and become ponded behind the large sand dune that runs parallel to Kihei's shoreline. Although the soils on the AOR were classified by the USDA/NRCS Soil Survey map as Dune Land and Jaucus Sand, neither of which are considered hydric soils, a wetland soil survey conducted on the site by Maui Environmental Consulting, LLC (MEC) on April 25, 2017, found hydrologic soil indicators present throughout the site.

There is a connection via shallow subsurface flow between the lower portion of the 25,881.52 acre 12-digit HUC watershed (200200000602), including flow from the wetland in the AOR, and the Pacific Ocean, a TNW. The geology of Kihei in the vicinity of the project area consists of young dune deposits from the Holocene in the dune lying parallel to the shoreline and Holocene Alluvium within the project area (from Sherrod, D. R., Sinton, J.M., Watkins, S.E., and Brunt, K.M. U.S. Geological Service, 2007. Geologic Map of the State of Hawaii, Sheet 7 – Island of Maui). Jaucas sand, which is on the project site, and the beach sand on the other side of the dune next to the Pacific Ocean have the same saturated hydraulic conductivity value of 331.2 mm/hr, indicating these soils' ability to transmit subsurface flow without impediment to a depth of 152 cm (SSURGO data layer based on NRCS Web Soil Survey data, accessed in Google Earth Pro, January 4, 2018). Another indicator of the subsurface flow of groundwater to the ocean and from the ocean landward is the town of Kihei's reliance on importing potable water from Wailuku due to Kihei's brackish groundwater unsuitability for use as potable water (Hunt, C.D., Jr., 2007, Ground-Water Nutrient Flux to Coastal Waters and Numerical Simulation of Wastewater Injection at Kihei, Maui, Hawaii: U.S. Geological Survey Scientific Investigations Report 2006-5283, 69 p).

The brackish nature of Kihei's groundwater was verified by the wetland survey conducted by MEC on April 25, 2017. MEC reported that the project site was dominated by salt-tolerant plant species, particularly Batis maritima (Lonard, R.I., Judd, F.W., and Salter, R. (2011). The Biological Flora of Coastal Dunes and Wetlands: Batis maritima C. Linnaeus, Journal of Coastal Research, May 2011, pp. 441 – 449) and Pluchea indica (Poodeetip, N., Kong-Ngern, K., Homchuen, S., and Toparkngam, B., The Biochemical Substances in Plants on Salt Affected Area in Northeast Thailand, Bamnet Narong District, Chaiyaphum Province, Thailand. International Journal of Environmental and Rural Development (2013) 4-2. http://iserd.net/ijerd42/42021.pdf, accessed 11 July 2016).

According to a 2007 study tracking an injected wastewater plume in the Kihei groundwater, poor water quality and algal blooms in the reefs immediately offshore of Kihei are likely the result of nutrients and other pollutants carried in the shallow groundwater rather than from pollutants transported by rare rainfall events (Hunt, C.D., Jr., 2007, Ground-Water Nutrient Flux to Coastal Waters and Numerical Simulation of Wastewater Injection at Kihei, Maui, Hawaii: U.S. Geological Survey Scientific Investigations Report 2006-5283, 69p.). According to a 2014 study based on evaluating aerial imagery and local knowledge, the majority of wetlands in Kihei prior to human settlement have been filled for agriculture or development (Van Rees, C.B. and Reed, J.M. (2014) Wetland Loss in Hawaii Since Human Settlement. Wetlands, 34. Pp. 335 – 350). The nutrient and pollutant transport between Kihei's watershed and the ocean was very different before the extensive development of the Kihei shoreline when the anaerobic conditions of the wetlands in Kihei assisted in the trapping of some of the nutrients and other pollutants carried in the groundwater. Although not connected to other wetlands, the wetland on the subject project site contributes a small improvement of water quality in the groundwater flowing to and impacting Kihei's coral reefs.

The presence of brackish groundwater in Kihei, as demonstrated by Kihei's need to import potable water and the dominance of salt-tolerant plant species on the project site, and the impact of shallow subsurface flow on the water quality of Kihei's reefs indicates that there is a chemical connection between the near-shore groundwater in the Kihei watershed and the Pacific Ocean; therefore there is a chemical connection via shallow subsurface flow between the wetland within the AOR and the Pacific Ocean, a TNW. In order for the chemical connection to be present, a physical connection via shallow subsurface flow between the wetland and the Pacific Ocean must also be present. The physical connection via shallow subsurface flow between the wetland and Pacific Ocean is not impeded by the natural sand dune or houses between the project site and the Pacific Ocean. Furthermore, located only 400 feet away from the Pacific Ocean, the wetland is located in "reasonably close" proximity to the TNW.

The chemical connection between the near-shore watershed, including the wetland in the AOR, and the Pacific Ocean via shallow subsurface flow impacts water quality in the near shore area of Kihei, including Kihei's coral reefs. The impacts to water quality in the coral reefs, including

algal blooms, from nutrients and other pollutants carried in shallow subsurface flow impact biota inhabiting Kihei's coral reefs. Therefore, there is an indirect biological connection between the wetland in the AOR and the Pacific Ocean, a TNW.

While no surface connection between the subject wetland and the Pacific Ocean, a TNW, was observed, the wetland in the AOR has a physical, chemical, and biological connection to the Pacific Ocean, a TNW, via shallow subsurface flow. Therefore, the wetland in the AOR is adjacent to a TNW and is a jurisdictional wetland

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: 25,881.52 acres

Average annual rainfall: 130 inches
Average annual snowfall: 0 inches

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: N/A. However, the connections between features of the wetland and its effects on the TNW have been documented above.

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:

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

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: 1.48 acres.

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):

- [x] Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Wetland Survey submitted by applicant on 11 Oct 2017
- [x] Data sheets prepared/submitted by or on behalf of the applicant/consultant. Submitted with Wetland Survey on 11 Oct 2017 and on 19 Dec 2017
  - [x] 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.
- [ ] Alaska District's Approved List of Navigable Waters
- [x] U.S. Geological Survey map(s). Cite scale & quad name: 1:50000; Wailuku, Makawao, Waiakoa, and Kipahu Valley quads together to create Geoligic Map of Hawaii, Sheet 7- Island of Maui
- [x] USDA Natural Resources Conservation Service Soil Survey. Citation: https://websoilsurvey.sc.egov.usda.gov, 19 Dec 2017; NRCS Soil Mapper Data Layer in Google Earth Pro, http://casoilresource.lawr.ucdavis.edu/soilweb-apps, 4 Jan 2017; and SSURGO data layer based on NRCS Web Soil Survey data, accessed in Google Earth Pro, 4 Jan 2017
- [x] National wetlands inventory map(s). Cite name: https://www.fws.gov/wetlands/Data/Mapper.html, 19 Dec 2017
- [ ] State/Local wetland inventory map(s):
- [ ] FEMA/FIRM maps:
- [ ] 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- [x] Photographs:
  - [x] Aerial (Name & Date): Google Earth Pro, 4 Jan 2017; Maps submitted by applicant in Wetland Survey, 11 Oct 2017
  - [ ] or [x] Other (Name & Date): Photos submitted by applicant in Wetland Survey, 11 Oct 2017
- [x] Previous determination(s). File no. and date of response letter: A PJD completed by USACE in January 2015 for POH-2005-00302 found that there may be Waters of the US in this location
- [ ] Applicable/supporting case law:
- [ ] Applicable/supporting scientific literature:
- [x] Other information (please specify):

References:

Hunt, C.D., Jr., 2007, Ground-Water Nutrient Flux to Coastal Waters and Numerical Simulation of Wastewater Injection at Kihei, Maui, Hawaii: U.S. Geological Survey Scientific Investigations Report 2006-5283, 69 p.;

Lonard, R.I., Judd, F.W., and Salter, R. (2011). The Biological Flora of Coastal Dunes and Wetlands: Batis maritima C. Linnaeus, Journal of Coastal Research, May 2011, pp. 441 – 449.

Poodeetip, N., Kong-Ngern, K., Homchuen, S., and Toparkngam, B., The Biochemical Substances in Plants on Salt Affected Area in Northeast Thailand, Bamnet Narong District, Chaiyaphum Province, Thailand. International Journal of Environmental and Rural Development (2013) 4-2. http://iserd.net/ijerd42/42021.pdf, accessed 11 July 2016.

Van Rees, C.B. and Reed, J.M. (2014) Wetland Loss in Hawaii Since Human Settlement. Wetlands, 34. Pp. 335 – 350.

Catchment and hydrologic unit layers in EPA MyWaters data layer in GoogleEarth Pro, http://www.epa.gov/waterdata/my-waters-mapper, accessed 7-11-16.

B. ADDITIONAL COMMENTS TO SUPPORT JD:

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Becca Frager
Regulatory Specialist

January 8, 2018
Date