Technical Memorandum

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Project Name	Cannibal Island Restoration Project		
Subject	Cannibal Island Restoration Project Agricultural Resource Assessment		

1. Introduction

This Technical Memorandum identifies and analyzes agricultural resources within the Cannibal Island Restoration Project (Project) that may be subject to regulation under the California Environmental Quality Act (CEQA), the Williamson Act, the Eel River Area Plan Local Coastal Program (ERAP) and the Coastal Act. The Project is located in low agricultural bottomland and tidal marsh habitats in Loleta, California on land zoned Agriculture Exclusive (**Appendix A, Figure 1—Vicinity Map**). This analysis includes review of various agricultural resource designations (i.e. Prime Farmland and Prime Agricultural Land) and a determination of whether all or parts of the Project Study Area (PSA) meet the agricultural designations in accordance with CEQA, Public Resources Code (PRC) 21060.1, Government Code 51201 (c), Humboldt County regulations, and the Coastal Act. Information from landowners on land management and productivity, guidance from the California Department of Conservation (DOC), the Natural Resources Conservation Service (NRCS) Soil Survey mapping units, and field investigations on soil productivity and mapped vegetation assemblages were utilized to determine whether portions of the PSA meet the Prime Farmland and/or Prime Agricultural Land designations. In total, the PSA contains no Prime Farmland, and approximately 44.4 acres of Prime Agricultural Land on the east side of Hansen parcels (APNs: 310-051-01, 310-043-03) and the Pedrazzini parcel (APN: 310-043-04).

1.1 Purpose of this Memorandum

This analysis will be used to determine the regulatory status of potential agricultural resources within the PSA in accordance with the agricultural designation definitions utilized in CEQA (and subsequent PRC 21060.1 and Gov. Code 51201 [c]), Humboldt County Zoning Code, the Humboldt County Williamson Act Advisory Committee, ERAP, and the Coastal Act. This analysis provides analysis and a determination of the acreage of land that is considered Prime Farmland by the NRCS (if any), acreage of land that meets the definition of Prime Agricultural Land, and analysis of whether implementation of the Project would convert Prime Farmland, Prime Agricultural Land, conflict with Humboldt County Zoning Code, Williamson Act Advisory Committee guidelines or the ERAP, or Coastal Act.

1.2 Project Description

The Project is located in agricultural bottomland and tidal marsh in the Eel River estuary in Loleta, Humboldt County, CA (**Appendix A, Figure 1**). The Project would seek to restore and expand natural estuarine functions and processes in the PSA to promote recovery of habitat for native fish, invertebrates,

wildlife, and plant species compatible with surrounding working agricultural lands and public access. To achieve the Project goal, construction activities are anticipated to include modifications to the existing dikes/water control structures, raising of Cannibal Island Road, excavation of slough channels, and placement of fill that collectively would restore hydrologic connectivity to the Eel River estuary while reducing flood impacts in the eastern margin of the PSA and off-site. In addition, the Project includes construction of a set-back levee which will help protect agricultural lands in the eastern margin of the PSA from saltwater intrusion and sea level rise.

The historical diking and draining of coastal wetlands for ranching and agriculture in the Eel River estuary around the turn of the 20th century caused a loss of coastal salt marsh in the estuary. Under existing conditions, a large part of the PSA has reverted to tidal marsh due to failure of some levees and the tide gate, rising sea level, and ground subsidence. Some functional pasture remains in higher elevations, particularly on the east side of the PSA, and a small strip of pasture to the south of Cannibal Island Road. The area within the levees is subject to a muted tidal prism and contains estuarine marsh and tidal waters as well as pasture (see **Appendix A, Figure 2 – Existing Dikes/Fill**). Vegetation mapping including surveys for rare plants, Sensitive Natural Communities and Environmentally Sensitive Habitat Areas was conducted in the spring and summer of 2020. In general, salt tolerant vegetative species are well established in the central portion of the PSA, and fresh to brackish wetlands have established in the north, east and southern portions of the PSA in an area surrounded by pasture; see **Appendix A, Figure 3 – Vegetation Mapping/Soil Sample Locations** for an overview of habitat types within the PSA. See the technical memorandum on botanical resources for a discussion of habitat and vegetation types onsite (GHD 2022).

1.3 Project Location

The PSA is within the Cannibal Island U.S. Geological Survey (USGS) Quad in the Eel River estuary, approximately three miles west of the town of Loleta, CA. The PSA is bounded by agricultural land directly south of Cannibal Island Road, Mosley Slough and North Bay to the west, and Sevenmile Slough to the north and east (**Appendix A, Figure 1**). The Project is located within the Coastal Zone and is entirely within the jurisdiction of the California Coastal Commission (Humboldt County 2022). Zoning within the PSA is AE-60/W, F, R, T meaning it is zoned Agricultural Exclusive with a minimum lot area of 60 acres and the following combining zones: Streamside Management Areas and Wetlands (W), Flood Hazard Area (F), Recreation (R), and Manufactured Home (T). Three property owners own land comprising the PSA, including the California Department of Fish and Wildlife (CDFW), L. Pedrazzini and L. Hansen. Land uses have included seasonal grazing on the two private property holdings, and management for wildlife habitat on the CDFW-owned property. Portions of the private holdings are within the NRCS Wetland Reserve Easement (WRE) program, and the entirety of the Hansen properties are under Williamson Act contracts (see **Appendix A, Figure 4 – Land Use and Williamson Act Contracts**). The entire PSA is not irrigated. A nonfunctioning tide gate, partially failed culverts and eroded levee have created a muted uncontrolled tidal prism. Most of the PSA is not drained, is impacted by wave over wash, and is not fully protected from flooding from the Eel River (see **Appendix A, Figure 2**).

2. Regulatory Setting

The following policies or laws provide regulatory protections to agricultural resources. Relevant regulatory definitions are provided below.

2.1 California Environmental Quality Act (CEQA)

The CEQA checklist includes the following questions related to potential agricultural and forestry impacts (**bolded** text below relates to agricultural resources):

II. AGRICULTURE AND FORESTRY RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the ***California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland****. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:*

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

c) Conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

d) Result in the loss of forest land or conversion of forest land to non-forest use?

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

The CEQA Handbook (CAEP 2022) provides the following guidance for agricultural land designations as follows (note that subdivision [b] is applicable to this Project as the Department of Conservation has not completed mapping in Humboldt County):

Public Resources Code Section 21060.1. AGRICULTURAL LAND

(a) "Agricultural land" means prime farmland, farmland of statewide importance, or unique farmland, as defined by the United States Department of Agriculture land inventory and monitoring criteria, as modified for California.

(b) In those areas of the state where lands have not been surveyed for the classifications specified in subdivision (a), "agricultural land" means land that meets the requirements of "prime agricultural land" as defined in paragraph (1), (2), (3), or (4) of subdivision (c) of Section 51201 of the Government Code.

Government Code Section 51201 (c)

"Prime agricultural land" means any of the following:

(1) All land that qualifies for rating as class I or class II in the Natural Resource Conservation Service land use capability classifications.

(2) Land which qualifies for rating 80 through 100 in the Storie Index Rating.

(3) Land which supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture.

(4) Land planted with fruit- or nut-bearing trees, vines, bushes, or crops which have a nonbearing period of less than five years and which will normally return during the commercial

bearing period on an annual basis from the production of unprocessed agricultural plant production not less than two hundred dollars ($200) per acre.

The following fifth subdivision of GC 51201 (c) is not considered to meet the definition of "Prime Agricultural Land" in accordance with PRC 21060.1(b) above, however is applicable under the California Coastal Act and the ERAP and is described below. It is presented here for continuity of the government code.

(5) Land which has returned from the production of unprocessed agricultural plant products an annual gross value of not less than two hundred dollars ($200) per acre for three of the previous five years.

2.2 California Coastal Act

The California Coastal Act (CCC 2022) refers to the definition of Prime Agricultural Land (Section 51201 (c)), provided above in Section 2.1. All five subdivisions are applicable under the Coastal Act, i.e. if lands meet one of the five subdivisions of Gov. Code 51201 (c) it is considered Prime Agricultural Land as described above.

Independent of agricultural designations, the following section from the Coastal Act provides guidance on when lands may be converted out of agricultural production.

Section 30241. *The maximum amount of prime agricultural land shall be maintained in agricultural production to assure the protection of the areas' agricultural economy, and conflicts shall be minimized between agricultural and urban land uses through all of the following:*

a. *By establishing stable boundaries separating urban and rural areas, including, where necessary, clearly defined buffer areas to minimize conflicts between agricultural and urban land uses.*

b. *By limiting conversions of agricultural lands around the periphery of urban areas to the lands where the viability of existing agricultural use is already severely limited by conflicts with urban uses or where the conversion of the lands would complete a logical and viable neighborhood and contribute to the establishment of a stable limit to urban development.*

c. *By permitting the conversion of agricultural land surrounded by urban uses where the conversion of the land would be consistent with Section 30250* (which relates to the location of new development)

d. *By developing available lands not suited for agriculture prior to the conversion of agricultural lands.*

e. *By assuring that public service and facility expansions and nonagricultural development do not impair agricultural viability, either through increased assessment costs or degraded air and water quality.*

f. *By assuring that all divisions of prime agricultural lands, except those conversion approved pursuant to subdivision (b), and all development adjacent to prime agricultural lands shall not diminish the productivity of prime agricultural lands.*

Section 30242 Lands suitable for agricultural use; conversion

All other lands suitable for agricultural use shall not be converted to nonagricultural uses unless (l) continued or renewed agricultural use is not feasible, or (2) such conversion would preserve prime agricultural land or concentrate development consistent with Section 30250 (which relates to the location of new development)*. Any such permitted conversion shall be compatible with continued agricultural use on surrounding lands.*

2.3 Eel River Area Plan Local Coastal Program

The PSA is entirely within the state jurisdiction of the Coastal Zone, therefore the Coastal Act administered by the California Coastal Commission contains the regulations that the Project would need to adhere to. The ERAP is mentioned in this section in regard to its connection to the County's Conditional Use Permit, which is anticipated to be required. Both Sections 30241 and 30242 from the Coastal Act (Section 2.2) are also listed in the ERAP, however there is a slight difference in Section 30241 within the ERAP which does not include mention of conversion of agricultural land consistent with adjacent development patterns. The PSA is not located near development and thus it is moot. Both Sections 30241 and 30242 are listed below for continuity.

Section 3.34 Agriculture

Section 30241. *The maximum amount of prime agricultural land shall be maintained in agricultural production to assure the protection of the areas' agricultural economy and conflicts shall be minimized between agricultural and urban land uses through all of the following:*

a. *By establishing stable boundaries separating urban and rural areas, including, where necessary, clearly defined buffer areas to minimize conflicts between agricultural and urban land uses.*

b. *By limiting conversions of agricultural lands around the periphery of urban areas to the lands where the viability of existing agricultural use is already severely limited by conflicts with urban uses or where the conversion of the lands would complete a logical and viable neighborhood and contribute to a stable limit to urban development.*

c. *By developing available lands not suited for agriculture prior to the conversion of agricultural lands.*

d. *By assuring that public service and facility expansions and nonagricultural development do not impair agricultural viability, either through increased assessment costs or degraded air and water quality.*

e. *By assuring that all divisions of prime agricultural lands, except those conversion approved pursuant to subdivision (b), and all development adjacent to prime agricultural lands shall not diminish the productivity of prime agricultural lands.*

Section 30242. *All other lands suitable for agricultural use shall not be converted to nonagricultural uses unless (1) continued or renewed agricultural use is not feasible, or (2) such conversion would preserve prime agricultural land or concentrate development with Section 30250* (which relates to the location of new development). *Any such permitted conversion shall be compatible with continued agricultural use on surrounding lands.*

B. Compatible Uses

1. *The zoning of all agricultural lands shall not permit any use that would impair the economic viability of agricultural operations on such lands; and* ***a conditional use permit shall be required of any proposed use not directly a part of agricultural production of food or fiber on the parcel****; except that on parcels of 60 acres or larger, a second house for parents or children of the owner-operator shall be considered a direct part of agricultural production.*

   Other uses considered compatible with agricultural operations include*:*

   a. ***Management for watershed***

   b. ***Management for fish and wildlife habitat***

Based upon these regulations, acquisition of the County Conditional Use Permit would not conflict with the ERAP because the proposed Project includes management for watershed function and for fish and wildlife habitat which is considered compatible with agricultural operations.

2.4 Humboldt County Zoning Code

The parcels within the PSA are zoned AE-60/W, F, R, T meaning they are zoned Agriculture Exclusive with a minimum lot area of 60 acres, and the following combining zones: Streamside Management Areas and Wetlands (W), Flood Hazard Area (F), Recreation (R), and Manufactured Home (T) (see **Appendix A, Figure 4**).

Excerpts of the Humboldt County Zoning Code (2022) that are applicable to the Project include the following:

> ***313-7: AE: AGRICULTURE EXCLUSIVE***
>
> ***Uses Permitted with a Use Permit:***
>
> - Fish and wildlife management, watershed management, wetland restoration, coastal access facilities.

Therefore, a Conditional Use Permit is expected to be required.

2.5 Humboldt County Williamson Act Advisory Committee Guidelines

The Humboldt County Williamson Act Advisory Committee Guidelines (2016) include various classes of preserves which require either Prime Agricultural Land or Non-Prime Agricultural Land (which references subdivisions one through five of Government Code 51201 [c]) including:

Class A Prime Land Preserve and Contract. *In order to qualify for a Class A preserve and contract, land shall comply with the following requirements:*

3) *Prime Agricultural Land. The land within the preserve shall be prime agricultural land and shall qualify therefore pursuant to any of the following categories:*

   i) *All land that qualifies for rating as class I or class II in the Natural Resource Conservation Service land use capability classifications.*

   ii) *Land which qualifies for rating 80 through 100 in the Storie Index Rating.*

   iii) *Land which supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture.*

   iv) *Land planted with fruit- or nut-bearing trees, vines, bushes, or crops which have a nonbearing period of less than five years and which will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than two hundred dollars ($200) per acre.*

   v) *Land which has returned from the production of unprocessed agricultural plant products an annual gross value of not less than two hundred dollars ($200) per acre for three of the previous five years.*

B) ***Class B Grazing Land Preserve and Contract****. In order to qualify for a Class B preserve and contract, land shall comply with the following requirements:*

3) *Non-Prime Agricultural Land. Land within the preserve shall be non-prime agricultural land of statewide or local significance.*

C) ***Class C Cropland Preserve and Contract.*** *In order to qualify for a Class C preserve and contract, land shall comply with the following requirements:*

3) *Prime or Non-Prime Agricultural Land. Land within the cropland preserve shall consist of prime land or tillable non-prime land of statewide or local significance.*

D) Class D Unique Farmland and Dairy Agricultural Preserve and Contract

2) *Prime Agricultural Land. The land within the preserve shall be prime agricultural land as defined in Section 51201(c) of the Government Code and Section 1A(3) of these Guidelines.*

3) *Non-Prime Agricultural Land of statewide of local significance which consists of tillable soils (see General Provisions, Sections 1.F(5) and 1F(6)).*

i) *The land is shown in an "agricultural" designation on the Humboldt County General Plan and is zoned for agricultural use.*

ii) *The income standard in Section 1F(7) would be met for each "ownership" unit (i.e. one or more parcels under the same ownership, or individual parcels under separate ownership) as it exists at time of entry into the Preserve and Contract.*

iii) *The proposed zoning and contract would prohibit any parcel divisions.*

iv) *Residential development rights beyond one single family residence for each ownership unit in the preserve would be conveyed to the County for the life of the Contract.*

v) *Not more than twenty five percent (25%) of the land area within the preserve is zoned Timberland Production Zone (TPZ).*

F) General Provisions

5) *"Non-prime agricultural lands of state or local significance" as used in these Guidelines shall mean lands, including grazing lands, which are not prime agricultural land as defined in Section 51201 (c) of the Government Code, that are designated for agricultural use in the General Plan, and which are in agricultural use, have present or future potential for significant agricultural production, or provide for compatible open space use consistent with the purposes of the Williamson Act.*

2.6 NRCS Prime Farmland

The NRCS considers soil mapping units to contain Prime Farmland based on abiotic conditions detailed in USDA Code 7 Part 657—Prime and Unique Farmlands as listed below. Therefore, it is assumed that soil mapping units with the designation of Prime Farmland meet the following criteria:

Code of Federal Regulations – Section 657.5. Identification of important farmlands

a) *Prime farmlands –*

1) ***General****. Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses (the land could be cropland, pastureland, rangeland, forest land, or other land, but not urban built-up land or water). It has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed, including water management, according to acceptable farming methods. In general, prime farmlands have an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, acceptable salt and sodium content, and few or no*

rocks. They are permeable to water and air. Prime farmlands are not excessively erodible or saturated with water for a long period of time, and they either do not flood frequently or are protected from flooding.

2) ***Specific Criteria**. Prime farmlands meet all the following criteria: Terms used in this section are defined in USDA publications: "Soil Taxonomy, Agricultura Handbook 436"; "Soil Survey Manual, Agriculture Handbook 18"; "Rainfall-erosion Losses From Cropland, Agriculture Handbook 282"; "Wind Erosion Forces in the United States and Their Use in Predicting Soil loss, Agriculture Handbook 346"; and "Saline and Alkali Soils, Agriculture Handbook 60."*

   i) *The soils have:*

      (A) ***Moisture**. Aquic, udic, ustic, or xeric moisture regimes and sufficient available water capacity within a depth of 40 inches (1 meter), or in the root zone (root zone is the part of the soil that is penetrated or can be penetrated by plant roots) if the root zone is less than 40 inches deep, to produce the commonly grown cultivated crops (cultivated crops include, but are not limited to, grain, forage, fiber, oilseed, sugar beets, sugarcane, vegetables, tobacco, orchard, vineyard, and bush fruit crops) adapted to the region in 7 or more years out of 10; or*

      (B) ***Moisture**. Xeric or ustic moisture regimes in which the available water capacity is limited, but the area has a developed irrigation water supply that is dependable (a dependable water supply is one in which enough water is available for irrigation in 8 out of 10 years for the crops commonly grown) and of adequate quality; or,*

      (C) ***Moisture**. Aridic or torric moisture regimes and the area has a developed irrigation water supply that is dependable and of adequate quality; and,*

   ii) ***Soil Temperature Range**. The soils have a temperature regime that is frigid, mesic, thermic, or hyperthermic (pergelic and cryic regimes are excluded). These are soils that, at a depth of 20 inches (50 cm), have a mean annual temperature higher than 32 °F (0 °C). In addition, the mean summer temperature at this depth in soils with an O horizon is higher than 47 °F (8 °C); in soils that have no O horizon, the mean summer temperature is higher than 59 °F (15 °C); and,*

   iii) ***Acid-Alkali Balance**. The soils have a pH between 4.5 and 8.4 in all horizons within a depth of 40 inches (1 meter) or in the root zone if the root zone is less than 40 inches deep; and,*

   iv) ***Water Table**. The soils either have no water table or have a water table that is maintained at a sufficient depth during the cropping season to allow cultivated crops common to the area to be grown; and,*

   v) ***Soil Sodium Content**. The soils can be managed so that, in all horizons within a depth of 40 inches (1 meter) or in the root zone if the root zone is less than 40 inches deep, during part of each year the conductivity of the saturation extract is less than 4 mmhos/cm and the exchangeable sodium percentage (ESP) is less than 15; and,*

   vi) ***Flooding**. The soils are not flooded frequently during the growing season (less often than once in 2 years); and,*

   vii) ***Erodibility**. The product of K (erodibility factor) × percent slope is less than 2.0, and the product of I (soils erodibility) × C (climatic factor) does not exceed 60; and*

   viii) ***Permeability**. The soils have a permeability rate of at least 0.06 inch (0.15 cm) per hour in the upper 20 inches (50 cm) and the mean annual soil temperature at a depth of 20 inches (50 cm)*

is less than 59 °F (15 °C); the permeability rate is not a limiting factor if the mean annual soil temperature is 59 °F (15 °C) or higher; and,

ix) ***Rock Fragment Content****. Less than 10 percent of the surface layer (upper 6 inches) in these soils consists of rock fragments coarser than 3 inches (7.6 cm).*

b) ***Unique Farmland –***

1) ***General.*** *Unique farmland is land other than prime farmland that is used for the production of specific high value food and fiber crops. It has the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high quality and/or high yields of a specific crop when treated and managed according to acceptable farming methods.*

2) ***Specific characteristics of unique farmland.***

i) Is used for a specific high-value food or fiber crop; (ii) Has a moisture supply that is adequate for the specific crop; the supply is from stored moisture, precipitation, or a developed-irrigation system; (iii) Combines favorable factors of soil quality, growing season, temperature, humidity, air drainage, elevation, aspect, or other conditions, such a nearness to market, that favor the growth of a specific food or fiber crop.

3) ***Additional farmland of statewide importance.*** *This is land, in addition to prime and unique farmlands, that is of statewide importance for the production of food, feed, fiber, forage, and oil seed crops. Criteria for defining and delineating this land are to be determined by the appropriate State agency or agencies. Generally, additional farmlands of statewide importance include those that are nearly prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some may produce as high a yield as prime farmlands if conditions are favorable. In some States, additional farmlands of statewide importance may include tracts of land that have been designated for agriculture by State law.*

4) ***Additional farmland of local importance.*** *In some local areas there is concern for certain additional farmlands for the production of food, feed, fiber, forage, and oilseed crops, even though these lands are not identified as having national or statewide importance. Where appropriate, these lands are to be identified by the local agency or agencies concerned. In places, additional farmlands of local importance may include tracts of land that have been designated for agriculture by local ordinance.*

3. Methods

3.1 Desktop Analysis

As briefly mentioned in Section 2.1, the California Farmland Mapping and Monitoring Program (FMMP), which produces maps of Prime Farmland, Unique Farmland, and Farmland of Statewide Importance by County across California, has not yet produced maps for Humboldt County (DOC 2022). Therefore, in accordance with PRC Section 21060.1, which provides guidance for determining the agricultural designation of lands which haven't been mapped by the FMMP, subdivisions (1) through (4) of the Gov. Code Section 51201 (c) were utilized to determine whether Prime Agricultural Land is present in the PSA. Additionally, the NRCS Web Soil Survey soil report and spatial data was downloaded on 9/2/2020, and again on 10/26/2022 (**Appendix B**). The NRCS soil survey report provides classifications of soil profiles found within the PSA, and states which soil profile is considered Prime Farmland or not Prime Farmland,

including conditions that the farmland needs to be drained and irrigated to be considered Prime Farmland. See **Appendix A, Figure 5 – NRCS Soils** for NRCS soil mapping units and parcel boundaries.

3.2 Field Investigations

Field investigations were conducted in the summer and fall of 2020, and included soil sampling and laboratory fertility analysis of soils onsite and synthesizing previously collected vegetation data and NRCS soil data. Soil samples were collected at eight boring locations and two monitoring wells in 2020 at varying depths from zero to six feet (see **Appendix A, Figure 3** for soil sample locations, parcels numbers and habitat types). Soil samples are identified by the sampling location and the depth (F0 indicates 0-1 foot depth, F1 indicates 1-2 foot depth, etc.). Soil samples were analyzed for fertility and salinity data at the A&L Western Agricultural Laboratories on 11/23/20 (**Appendix C)**. Vegetation was characterized using Rapid Assessment protocol and mapped according to the Manual of California Vegetation at the Alliance level (Sawyer et al., 2009; CNPS 2022) in the summer and fall of 2020. Please see the technical memorandum on botanical studies at the site for additional details (GHD 2022).

4. Results

4.1 NRCS Soil Survey Results

The following NRCS soil mapping units are present in the PSA, and are shown in **Appendix A, Figure 5**. The NRCS mapping likely does not represent current conditions as large areas within the PSA have converted to tidelands from saltwater inundation, particularly within the central portion of the PSA.

4.1.1 Water and Fluvents, 0 to 2 percent slopes (Soil Map Unit 100)

Water and fluvents occur on the western and northern sides of the PSA. The water and fluvents soil unit is not considered Prime Farmland, and it has a land capability classification of 5w. The parent material is alluvium derived from mixed sources. Water and fluvents soil occurs in point bars on channels, and at the base or toe of slopes. The soil consists of somewhat excessively drained gravelly fine sandy loam, underlain by extremely gravelly sandy loam. The water table is typically at the surface (at 0 inches). Water and fluvents soil is hydric and has low available water capacity, and salinity content ranging from non-saline to very slightly saline.

4.1.2 Weott, 0 to 2 percent slopes (Soil Map Unit 110)

Weott soils overlap the pasturelands on the eastern side of the PSA. The Weott soil unit is considered Prime Farmland if irrigated and drained, and it has a land capability classification of 5w. The parent material is alluvium derived from mixed sources. Weott soil occurs in backswamps, depressions, and flood-plain steps. The soil consists of very poorly drained silt loam with the soil surface 0-4 inches from the water table. Weott soil is hydric and has high available water capacity, and salinity content ranging from non-saline to very slightly saline. The Hydrologic Soil Group B/D indicates that the Weott soils onsite may have a moderate infiltration and water transmission rate if drained, but have a very slow rate of infiltration and transmission in their natural condition.

4.1.3 Swainslough-Occidental complex, 0 to 2 percent slopes (Soil Map Unit 117)

The Swainslough-Occidental complex of soils occurs in a low elevation area of transitional pasture on the south side of the PSA and a central portion of the PSA that has reverted to salt marsh and mudflat. The map unit composition consists of 70 percent Swainslough and similar soils, 20 percent Occidental and similar soils, and 10 percent minor components. The Swainslough-Occidental soil complex is not Prime

Farmland (capability classification 5w). The parent material is alluvium derived from mixed sources. Swainslough soil occurs in backswamps, depressions, flood-plain steps, and salt marshes. It consists of silty clay loam with the soil surface 0-4 inches from the water table. Swainslough soil is hydric, very poorly drained, and has high available water capacity. The soil salinity content ranges from non-saline to slightly saline. Occidental soil is a similar hydric silty clay loam that occurs in tidal marshes and salt marshes, and salinity content that ranges from slightly saline to strongly saline. With Hydrologic Soil Groups of C/D, the soils may have a slow infiltration and water transmission rate if drained, and have a very slow infiltration and water transmission rate in their natural state.

4.1.4 Arlynda, 0 to 2 percent slopes (Soil Map Unit 119)

Arlynda soils occur in an eastern lower elevation area of transitional pastureland and former pastureland that has reverted to salt marsh and mudflat. The map unit composition is as follows: 85 percent Arlynda and similar soils, and 15 percent minor components. Arlynda soil is Prime Farmland if irrigated and drained, and it has a capability classification of 5w. The parent material is alluvium derived from mixed sources. Arlynda soil occurs in meander scars, backswamps, depressions, and flood-plain steps. The soil consists of a top layer of slightly decomposed organic material (0-3 inches) above deep silty clay loam. Arlynda soil occurs 0-4 inches from the water table. Arlynda soil is hydric, very poorly drained, and has high available water capacity. Arlynda soil salinity ranges from non-saline to slightly saline. With a Hydrologic Soil Group of C/D, the soil may have a slow infiltration and water transmission rate if drained, and have a very slow infiltration and water transmission rate in their natural state.

4.1.5 Occidental, 0 to 2 percent slopes (Soil Map Unit 140)

Occidental soils overlap a large area of central salt marsh and mudflats in the PSA. The map unit composition is as follows: 90 percent Occidental and 10 percent minor components. Occidental soil is not considered Prime Farmland, and it has a capability classification of 7w. The parent material is alluvium derived from mixed sources. Occidental soil occurs in salt marshes. The soil consists of very poorly drained silty clay loam with a 0-3 inch peat top layer. The surface of Occidental soil occurs 0-4 inches from the water table. Occidental soil is hydric and has moderate available water capacity, and salinity content ranging from slightly saline to strongly saline. With a Hydrologic Soil Group of C/D, the soil may have a slow infiltration and water transmission rate if drained, and have a very slow infiltration and water transmission rate in their natural state.

4.1.6 Wigi, 0 to 2 percent slopes (Soil Map Unit 142)

Wigi soils overlap an area that has mostly reverted to salt marsh. The map unit composition is as follows: 90 percent Wigi, occasionally flooded, and similar soils, and 10 percent minor components. Wigi soil is not considered Prime Farmland, and it has a capability classification of 7s. The parent material is alluvium derived from mixed sources. Wigi soil occurs in salt marshes. Wigi soil consists of a thin peat organic horizon (0-1 inches) and an A horizon of silt loam (1-7 inches), above a deep layer of silty clay loam. Wigi soil is very poorly drained and occurs 0-6 inches from the water table. Wigi soil is hydric, has high available water capacity, and can be strongly saline. With a Hydrologic Soil Group of C/D, the soil may have a slow infiltration and water transmission rate if drained, and have a very slow infiltration and water transmission rate in their natural state.

4.1.7 Samoa-Clambeach complex, 0 to 50 percent slopes (Soil Map Unit 155)

The Samoa-Clambeach soil complex occurs on a small area of elevated sandy soil on the western side of the PSA. The map unit composition is as follows: 65 percent Samoa and similar soils, 30 percent Clambeach and similar soils, and 5 percent minor components. These soils are not considered Prime Farmland, and have a capability classifications of 6e and 5w, respectively. The parent material is eolian and

marine sand derived from mixed sources. Samoa soil occurs in dunes, and Clambeach soil occurs in deflation basins. Samoa soil consists of a thin organic horizon of slightly decomposed plant material (0-1 inches) above deep sand. Samoa soil is typically more than 80 inches from the water table. Samoa soil is non-hydric and has low water capacity. With a Hydrologic Soil Group of A, Samoa soil has a high infiltration and water transmission rate. In contrast, Clambeach soil consists of sand and may be hydric, with the soild surface occurring 0-4 inches from the water table. The soil salinity content ranges from non-saline to very slightly saline. With a Hydrologic Soil Group of A/D, Clambeach soils may have a very high infiltration and water transmission rate if drained, and have a very slow infiltration and water transmission rate in their natural state (NRCS 2020).

4.2 Field Mapping and Wetland Delineation

Vegetation mapping by GHD in 2020 and 2022 showed a total of 208.7 acres of pasture grass within the PSA, primarily characterized by non-native creeping bentgrass (*Agrostis stolonifera*) (**Table 4-1**). The PSA contained 395.8 acres of salt marsh, including vegetation characterized by pickleweed (*Salicornia pacifica*), gum plant (*Grindelia stricta*), salt grass (*Distichlis spicata*), and invasive dense-flowered cordgrass (*Spartina densiflora*). The PSA also contained 26.2 acres of fresh to brackish wetlands primarily characterized by salt rush (*Juncus lescurii*), 52.9 acres of coastal brambles and other vegetation along levees, roadsides, and other development, and 110.1 acres of muted or fully tidal waters. The 208.7 acres of pasture grass mapped onsite has agricultural value (see **Appendix A, Figure 3**).

Table 4-1. Acres of Habitat and Vegetation Types within the PSA

Habitat Type	Habitat Type Area (acres)	Vegetation Mapping Unit	Vegetation Unit Area (acres)
Pasture	208.7	Non-native pasture grass	208.7
Salt marsh	395.8	Pickleweed salt marsh	287.7
		Gum plant patches	28.7
		Salt grass flats	17.8
		Dense-flowered cordgrass	61.6
Fresh to brackish wetland	26.2	Salt rush swales	26.2
Other	53.3	Coastal brambles	2.9
		Coastal willow thickets	0.4
		Pale spike rush marsh	0.15
		Non-native vegetation/developed	49.8
Waters	110.1	Eelgrass beds	0.6
		Mudflats	93.4
		Subtidal	16.1

4.3 Soil Sample Analysis

Laboratory analysis of soil samples collected within the PSA (**Appendix C**) showed variable salinities (**Table 4-2**). Soil samples collected along upland berms and levees (B-1, B-3, B-4, and B-5) were not saline, and samples taken within the salt marsh (B-6, B-8, and B-11) reliably exceeded the salinity thresholds of Electrical Conductivity (EC) >4 mmhos/cm (a.k.a. dS/m) and the exchangeable sodium percentage (ESP) of 15. The laboratory analysis results for samples B-7 and B-7A show that inboard elevations below seven feet NAVD88 have become saline, which (based upon preliminary analysis and anecdotal observations) coincides with areas that are prone to periodic flooding during overflow events and king tides. The MW-1 sample, near the upper edge of fresh to brackish marsh characterized by salt rush, showed salinity below the designated thresholds but is considered somewhat high for agricultural soil (**Appendix C**). Although the MW-3 sample, located in pasture to the south near Cannibal Island Road, is above seven feet NAVD88 and showed salinity below the designated thresholds, its salinity level is considered somewhat high for agricultural soil. See **Appendix A, Figure 3** for the location of soil samples.

Table 4-2. Soil Salinity Analysis

Sample ID	EC	SAR	ESP	Saline? (EC>4)	Location	NRCS Soil	NRCS Potential Prime Soil
MW1F0[1]	2.3	6.2	7.3	No (somewhat high for agriculture)	Fresh to brackish salt rush swale/ pasture transition	Weott	Prime if Irrigated
MW3F0	2.5	8.3	9.9	No (high for agriculture)	Southern pasture	Swainslough-Occidental	No
B1F1[2]	1.1	9.1	10.8	No	Southwest berm	Weott	Prime if Irrigated
B1F3[3]	1.0	6.8	8.1	No	Southwest berm	Weott	Prime if Irrigated
B3F0so	0.3	1.9	1.5	No	Levee near culvert	Clambeach/ Occidental	No
B4F2	0.9	4.6	5.2	No	West levee	Occidental	No
B5F3	0.2	1.6	1.1	No	Northwest levee	Occidental	No
B6F0	13.1	14.6	16.8	Yes	Southern salt marsh	Swainslough-Occidental	No
B7F0	13.1	11.9	14.0	Yes	East saltmarsh/ pasture boundary	Arlynda	Prime if Irrigated
B7AF0	14.1	12.0	14.1	Yes	East transitional pasture	Arlynda	Prime if Irrigated
B8F1	35.1	11.9	14.0	Yes	Central salt marsh	Wigi	No
B8F4[4]	34.1	10.8	12.8	Yes	Central salt marsh	Wigi	No
B11F1	17.7	13.7	15.9	Yes	Northeast mudflat/salt marsh	Occidental	No
B11F3	18.1	12.6	14.7	Yes	Northeast mudflat/salt marsh	Occidental	No
B11F5[5]	24.5	10.3	12.2	Yes	Northeast Mudflat/salt marsh	Occidental	No

1. F0 = 0-1’ below ground surface
2. F1= 1’-2’ below surface
3. F2= 2’-3’ below surface
4. F4= 3’-4’ below surface
5. F5= 4’-5’ below surface

5. Agricultural Designations (CEQA Impact Analysis [a])

As mentioned in Section 1.4, the PSA is not irrigated for commercial agricultural use (i.e., personal gardens may be watered periodically, however pasture lands are not irrigated). Drainage occurs naturally through existing swales that exit into the North Bay through partially failed culverts and most of the PSA is not drained.

As mentioned in Section 2.1, CEQA impact analysis question (a) asks if the Project would: *Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?* The FMMP, which produces maps of Prime Farmland, Unique Farmland, and Farmland of Statewide Importance for counties across California, has not yet produced maps for Humboldt

County (DOC 2022). Therefore, in accordance with PRC Section 21060.1, which provides guidance for determining the agricultural designation of lands which haven't been mapped by the FMMP, subdivisions (1) through (4) of the Gov. Code Section 51201 (c) were utilized to determine whether Prime Agricultural Land is present in the PSA (with regard to question (a)/Prime Farmland). Additionally, NRCS Prime Farmland designations based on soil mapping units were utilized to address CEQA impact analysis question (a). See **Table 5-1** (below) for an overview of agricultural land designations of all parcels within the PSA. See **Appendix A, Figure 6 – Agricultural Land Designations and Encumbrances**, for area deemed to be Prime Agricultural land.

5.1 Prime Farmland Calculation

For the purposes of this Tech Memo, Prime Farmland is an NRCS term, and was utilized in this analysis to provide a determination of whether this federal agricultural designation is present or absent within the PSA for CEQA purposes. There are seven soil types present within the PSA: Water and Fluvents, Weott, Swainslough-Occidental complex, Arlyda, Occidental, Wigi, and Samoa-Clambeach complex (see Section 4.1 for additional information). The Water and Fluvents, Swainslough-Occidental complex, Occidental, Wigi and Samoa-Clambeach complex soil units are all not considered Prime Farmland. The Weott and Arlynda soils are considered Prime Farmland if irrigated and drained. However, no portions of the PSA are irrigated, and most of the PSA is not "drained," except for some of the eastern portion of the PSA, which is partially drained by remnant lateral drainage ditches. Therefore, no Prime Farmland is present in the PSA.

5.2 Prime Agricultural Land

Per Section 21060.1, given the absence of FMMP data (i.e. State-level Prime Farmland, Unique Farmland and Farmland of Statewide Importance designations), subdivisions (1) through (4) of Gov. Code Section 51201 (c) were utilized to determine whether Prime Agricultural Land (as it related to Prime Farmland/CEQA impact question [a]) is present in the PSA. As listed in Section 2.1 of this Tech Memo, Gov. Code Section 51201 (c) lists the following:

> ***Government Code Section 51201 (c)***
>
> *"Prime agricultural land" means any of the following:*
>
> *(1) All land that qualifies for rating as class I or class II in the Natural Resource Conservation Service land use capability classifications.*
>
> *(2) Land which qualifies for rating 80 through 100 in the Storie Index Rating.*
>
> *(3) Land which supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture.*
>
> *(4) Land planted with fruit- or nut-bearing trees, vines, bushes, or crops which have a nonbearing period of less than five years and which will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than two hundred dollars ($200) per acre.*

Therefore, Prime Agricultural Land can be defined by having a Land Capability Classification (LCC) of 1 or 2, or a Storie Index 80 to 100, or by economic value of agricultural products.

None of the NRCS soil mapping units onsite meet the LCC criteria of 1 or 2, rather all soil types contain LCCs ranging from 5w to 7. The California Revised Storie Index was calculated for the area (see **Appendix B**) and no soils were within the Grade 1 rating (which corresponds to the 81 through 100 of the original Storie Index Rating) are present within the PSA. Thus the PSA does not meet the first or second criteria.

Per the third criteria, an area of pasture may be considered Prime Agricultural Land if it has an annual carrying capacity equivalent to at least one animal unit per acre. The two privately owned properties graze livestock seasonally, however CDFW does not graze animals within their property and it has not been legally grazed since 2009. Determining the precise boundaries of pasture capable of supporting one animal unit per acre is complex because portions of the site only supports livestock seasonally, and forage quality varies widely based on vegetation, salinity, and flood conditions (which typically occur in the west, central and northern portions of the PSA) and conditions are changing over time. Based upon existing conditions, the portions of the PSA that can support one animal unit per acre (on average) include the eastern portion of APNs 310-043-04 (L. Pedrazzini) and the eastern portions of 310-051-001 and 310-043-003 (L. Hansen) and therefore can be considered Prime Agricultural Land.

Per the fourth criteria, the PSA was not planted with fruit- or nut-bearing trees, vines, bushes or crops which normally return at least $200 per year during the commercial bearing period. However, the PSA does produce hay, which if harvested could be considered a crop. Similarly to the paragraph above, the eastern portions of APNs 310-043-004 (L. Pedrazzini) and 310-051-001 and 310-043-003 (L. Hansen) contain the conditions most suitable for hay productions (as well as grazing) due to the suitable vegetation, lower salinity levels and less frequent flooding. Therefore, the eastern portions of the above referenced parcels also meet the fourth subdivision of Gov. Code 51201 (c) and can be considered Prime Agricultural Land. See **Appendix A, Figure 6** for the locations of areas considered Prime Agricultural Land. Prime Agricultural Lands were drawn on the 8-foot contour line (NAVD88).

Table 5-1. Overview of Parcels and Agricultural Land Designations

Parcel	Prime Farmland by NRCS?	NRCS Mapping Unit?	Prime Agricultural Land by Gov Code 51201(c) & PCR 21060.1?	Prime Agricultural Land by CA Coastal Act?
CDFW - 310-033-004	No	110, 140 & 155	No	No
CDFW - 310-043-001	No	100, 110, 117 & 142	No	No
CDFW - 310-021-003	No	100, 110 & 140	No	No
CDFW - 310-021-004	No	100, 110 & 140	No	No
L. Pedrazzini - 310-043-006	No	100, 117, 140 & 142	No	No
L. Pedrazzini - 310-043-004	No	117 & 142	Yes: east only	Yes: east only
L. Pedrazzini - 310-043-005	No	110 & 117	No	No
L. Hansen - 310-043-003	No	110, 117, 119 & 140	Yes: east only	Yes: east only
L. Hansen - 310-051-001	No	110, 110, 119 & 140	Yes: east only	Yes: east only

Project components would not occur within Prime Agricultural Land areas. The Project components closest to Prime Agricultural Land includes the installation of the set-back dike and raising of Cannibal Island Road to approximately 11 feet (NAVD 88) which matches the elevation of the proposed set-back dike adjacent to it. Minimal earthwork would occur on unsurveyed (likely) Prime Agricultural land south of Cannibal Island Road to elevate Cannibal Island Road. This area is being impacted from salt water during high tides from the north. The road raising would control salt water on this parcel and would result in higher production in the current salt water impacted areas. The fill would terminate at the existing fence or slightly south of the existing fence (in that case the fence would be moved slightly to the south). This sliver of fill is considered insignificant, and conditions would be improved. Therefore, no conversion of Prime Agricultural Land that would result in a loss agricultural production would occur.

Further, implementation of the tidal slough channels, estuarine enhancements, installation of gated culverts, and proposed set-back levee would occur west of the Prime Agricultural Land. The set-back levee would provide protection to Prime Agricultural Land from potential flooding, thereby improving the potential for productivity within Prime Agricultural Land.

6. County Zoning or Williamson Act Conflict Analysis (CEQA Impact Analysis [b])

6.1 Humboldt County Zoning

The parcels within the PSA are zoned AE-60/W, F, R, T meaning they are zoned Agriculture Exclusive with a minimum lot area of 60 acres, and contain the following combining zones: Streamside Management Areas and Wetlands (W), Flood Hazard Area (F), Recreation (R), and Manufactured Home (T), see **Appendix A, Figure 4**. As stated in Section 2.4 (Humboldt County Zoning Code), land uses including "fish and wildlife management, watershed management, and wetland restoration" are conditionally permitted activities within the AE zoning. Within the PSA, all AE-zoned lands west of the proposed set-back levee would be managed for fish and wildlife, watershed function and wetlands restoration and therefore would be conditionally permitted. Therefore, pending successful acquisition of a Conditional Use Permit from Humboldt County, no conflict with Humboldt County Zoning Code would occur from implementation of the Project. The Conditional Use Permit would need to adhere to ERAP guidelines, which is discussed in Section 7.1 below.

6.2 Williamson Act Agricultural Preserves

Two parcels (APNs 310-043-003 and 310-051-001), owned by L. Hansen, are designated as Williamson Act Agricultural Preserves (#144 and #132) (**Appendix A, Figure 4**). The Humboldt County Williamson Act Guidelines state that "*the majority of the land area of any property under contract must be devoted to agricultural pursuits consistent with the purpose of the preserve in which the property is located*." As previously mentioned, the western portions of the two parcels regularly flood and only seasonally support agricultural production (i.e. grazing). The proposed Project would restore tidal marsh within these areas located west of the proposed set-back levee, and thereby reduce potential flooding in lands east of the proposed set back levee (see **Appendix A, Figure 6**). The acreage within each parcel/Williamson Act contract and in total that would continue to be grazed after Project implementation is shown in **Table 6-1** below.

Table 6-1. Williamson Act Parcels under Existing and Proposed Conditions

Parcel/Williamson Act Preserve	Existing Acreage - Seasonal Grazing	Proposed Acreage - Year Round Grazing	Percentage of Lands to Remain Grazed
310-043-003/#144	81	20	25%
310-051-001/#132	63	46	73%
Total of both contracts	144	66	46%

As shown, 73% of property within the -001 parcel would remain grazeable, and 25% of parcel -003 would remain grazeable. Although the majority of parcel -003 would not be grazed, the productivity within the remaining grazeable area would increase and the resiliency to future flooding would increase via the set-back levee.

According to vegetation mapping, areas at and below six feet (NAVD 88) contain pickleweed salt marsh habitat which is not of forage quality to livestock. The 59-acre area under Williamson Act contracts located east of the proposed set-back levee currently contains 2.9 acres (5%) pickleweed salt marsh or salt rush swale habitat and 52.5 acres (89%) pasture grass (the remaining 3.6 acres [6%] is coastal willows or developed areas). Following Project implementation, due to a lack of tidal influence it is anticipated that this

area would be entirely pasture grass, except for areas which contain coastal willow thickets or are developed, amounting to 55.4 acres and would be grazeable year-round. Although modest, this change in vegetation would therefore result in an increase in productivity.

Additionally, the proposed set back levee would increase the resiliency of agricultural lands east of it which would preserve (and likely increase) grazing productivity in the present and into the future. Therefore, although less than the majority of the property under Williamson Act contracts would be grazed following Project implementation, the productivity on remaining grazing lands would be preserved and improved via a shift in vegetation assemblages. This preservation and increase in productivity is a result of the set-back levee and tidal marsh creation, making them complementary components of agricultural pursuits. Thus, the majority of property under Williamson Act contracts (tidal marsh and grazing land) would be utilized for agricultural pursuits and conforms to Humboldt County Williamson Act guidelines. Therefore, a less than significant impact would occur on Williamson Act contract lands during both construction and operation of the Project.

This conclusion is additionally and independently supported by the fact that the Williamson Act specifically defines “agricultural land” to include, among other items, “a wildlife habitat area, a saltpond, a managed wetland, or a submerged area.” (Gov. Code, Section 51205.) The Williamson Act also names three factors for determining whether a use is compatible with a contract, namely that:

(1) The use will not significantly compromise the long–term productive agricultural capability of the subject contracted parcel or parcels or on other contracted lands in agricultural preserves.

(2) The use will not significantly displace or impair current or reasonably foreseeable agricultural operations on the subject contracted parcel or parcels or on other contracted lands in agricultural preserves. Uses that significantly displace agricultural operations on the subject contracted parcel or parcels may be deemed compatible if they relate directly to the production of commercial agricultural products on the subject contracted parcel or parcels or neighbouring lands, including activities such as harvesting, processing, or shipping.

(3) The use will not result in the significant removal of adjacent contracted land from agricultural or open–space use. (Gov. Code, Section 51238.1.)

7. Other Potential Conversion (CEQA Impact Analysis [e])

7.1 Eel River Area Plan (for Conditional Use Permit)

The Project would require a Conditional Use Permit and would therefore need to adhere to the ERAP. The sections of the ERAP that apply to the Project include Sections 30241 and 30242 as well as “Compatible Uses”, which are listed verbatim in Section 2.3 of this Assessment. To summarize, Section 30241 states the “maximum amount of prime agricultural land shall be maintained in agricultural production…” and provides implementation examples. The ERAP defines Prime Agricultural Land based on the adopted definition of Prime Agricultural Land by the State of California. Therefore, Prime Agricultural Land is considered to be land that meets any of the five subdivisions in Gov. Code 51201 (c). As mentioned above in Section 5 (Agricultural Designations and CEQA Impact Analysis [a]), the eastern portions of APNs 310-043-004 (L. Pedrazzini) and the eastern portions of APNs 310-051-001 and 310-043-003 (L. Hansen) meet subdivisions (3) and (4) of the Government Code and can be considered Prime Agricultural Land under the ERAP. The Project does not conflict with Section 30241 because the Project would not disturb, modify or convert any Prime Agricultural Land within the PSA that will result in a loss of production loss, and therefore the maximum amount of Prime Agricultural Land would be maintained in agricultural production.

Section 30242 of the ERAP is in regard to all other agricultural lands, and states that “all other lands suitable for agriculture use shall not be converted to non-agricultural uses unless (1) continued or renewed agricultural use is not feasible, or (2) such conversion would preserve prime agricultural land….” Implementation of the Project would result in a set-back levee and the conversion of 673 acres of AE-zoned

lands to tidal marsh habitat. Although this area regularly floods and is of poor grazing quality, it can be considered agricultural lands for the purpose of this analysis. Conversion of these agricultural lands to non-agricultural use meets both subsections (1) and (2) of Section 30242 because continued or renewed agricultural use is not feasible in this area as is demonstrated by the routine flooding and establishment of salt marsh vegetation (thus lower productivity for grazing, see **Appendix A, Figure 3**), and because the conversion and installation of the set-back levee would preserve adjacent Prime Agricultural Land.

Further, the proposed Project would not conflict with the ERAP because "management for watershed, and management for fish and wildlife habitat" are considered compatible with agricultural operations under the ERAP. Therefore, implementation of Project would not conflict with Sections 30241, 30242 or "Compatible Uses" as listed in the ERAP.

7.2 California Coastal Act (for Coastal Development Permit)

The PSA is under the State's jurisdiction within the Coastal Zone, therefore a Coastal Development Permit issued by the California Coastal Commission in accordance with the Coastal Act would be obtained by the Project applicant. Similarly to the ERAP, the Coastal Act considers Prime Agricultural Land to be land that meets any of the five subdivisions in Gov. Code 51201 (c) and all lands shown as Prime Agricultural Land in **Appendix A, Figure 6** are also considered Prime Agricultural Land under the Coastal Act. Similarly to the ERAP, Sections 30241 and 30242 of the Coastal Act would apply to the Project, and for the same reasons stated above in Section 7.1 the Project would not conflict with the Coastal Act. Specifically, the maximum amount of Prime Agricultural Land would be maintained in agricultural production (Section 30241), and the conversion of other agricultural lands would be done so because renewed agriculture is not feasible in said location and the conversion would preserve the adjacent Prime Agricultural Land (Section 30242). These Prime Agricultural Lands would remain in agricultural production following Project implementation and the agricultural productivity in these areas is expected to increase as they would be protected by a setback levee which would alleviate flooding and salinity intrusion in the eastern portion of the PSA. Therefore, implementation of the Project would not conflict with the Coastal Act.

7.3 Wetland Reserve Easement

Within the PSA, two Wetland Reserve Easements (WREs) exist totalling 219 acres. These are perpetual conservation easements that seek to protect and restore wetland habitat while allowing limited livestock grazing in suitable habitat types. Implementation of the Project would convert wetlands that were previously degraded due to agricultural uses and would remove grazing from within the WREs which are allowable under the WRE program. Therefore, construction and operation would not conflict with the WREs within the PSA.

8. Conclusion

The purpose of this evaluation was to identify which portions of the PSA lands contain protected agricultural designations to inform development of Project Alternatives and/or potential mitigation under CEQA or regulatory permits. No Prime Farmland exists within the PSA (utilizing NRCS designations and soil parameters, which was confirmed by field investigations of soil quality). Approximately 44.4 acres of Prime Agricultural Land exists within PSA, located within the eastern portions of L. Pedrazzini and L. Hansen properties (see **Appendix A, Figure 6**). Under the Project, these areas would not be converted out of Prime Agricultural Land, rather the agricultural productivity is anticipated to increase in these areas due to the installation of a complementary set-back levee which would reduce flooding and saltwater impaction to these Prime Agricultural Lands. Collectively, the majority of grazeable acreage under Williamson Act contracts would decrease following Project implementation, however the installation of the set-back levee and tidal marsh restoration would increase the resiliency of agricultural productivity on remaining grazeable lands, are considered complementary to agricultural production. Therefore, the majority of property under

Williamson Act contracts (tidal marsh and grazing land) would be utilized for agricultural pursuits and conforms to Humboldt County Williamson Act guidelines. With acquisition of a Conditional Use Permit from Humboldt County and a Coastal Development Permit from the California Coastal Commission, no conflict with existing zoning, the ERAP or Coastal Act would occur from Project implementation.

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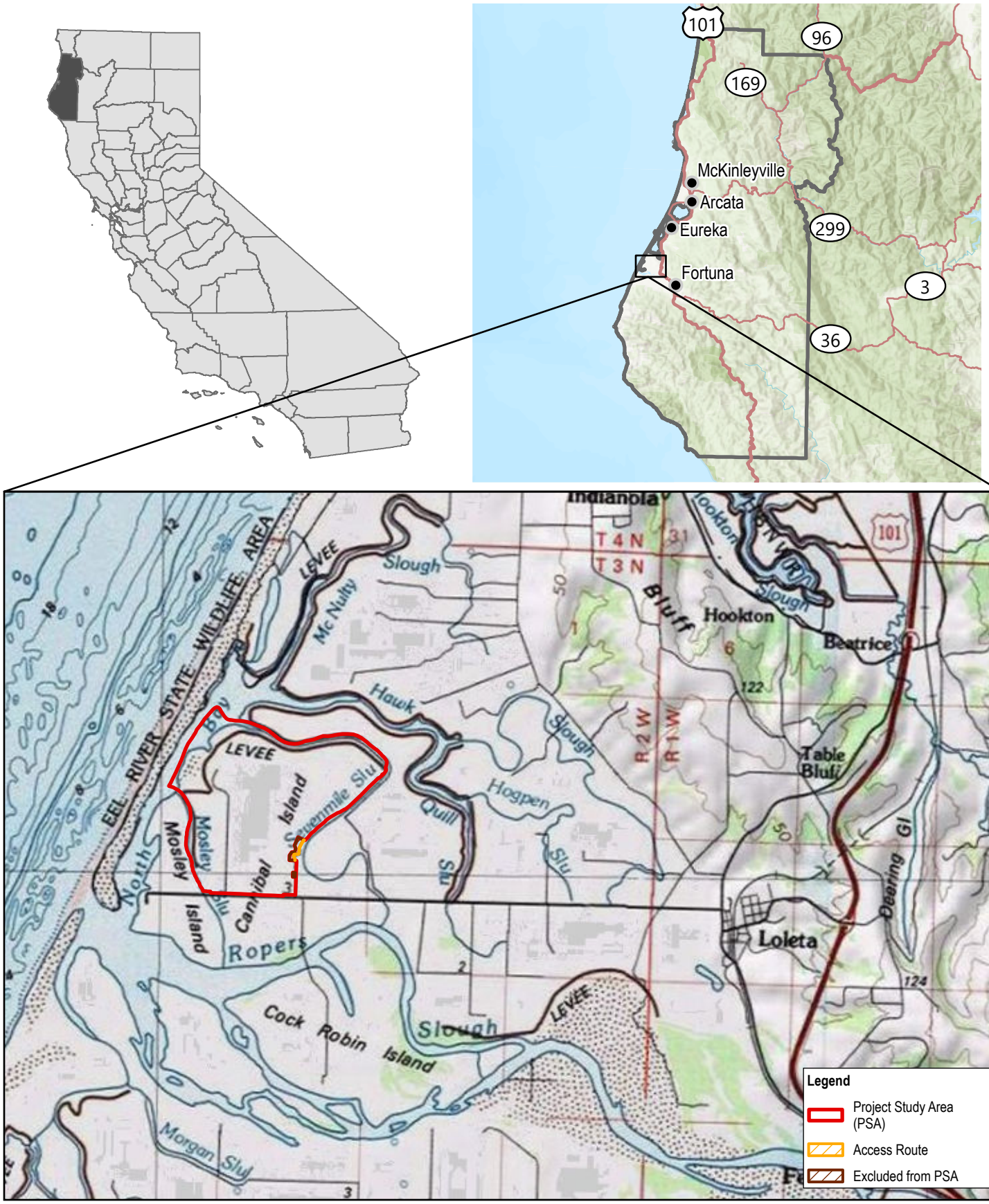
Appendices

Appendix A

Figures



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Miles

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

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GHD

CalTrout
Cannibal Island Restoration Project

Project No. **11206383**
Revision No. **-**
Date **11 Nov 2022**

Vicinity Map

FIGURE 1

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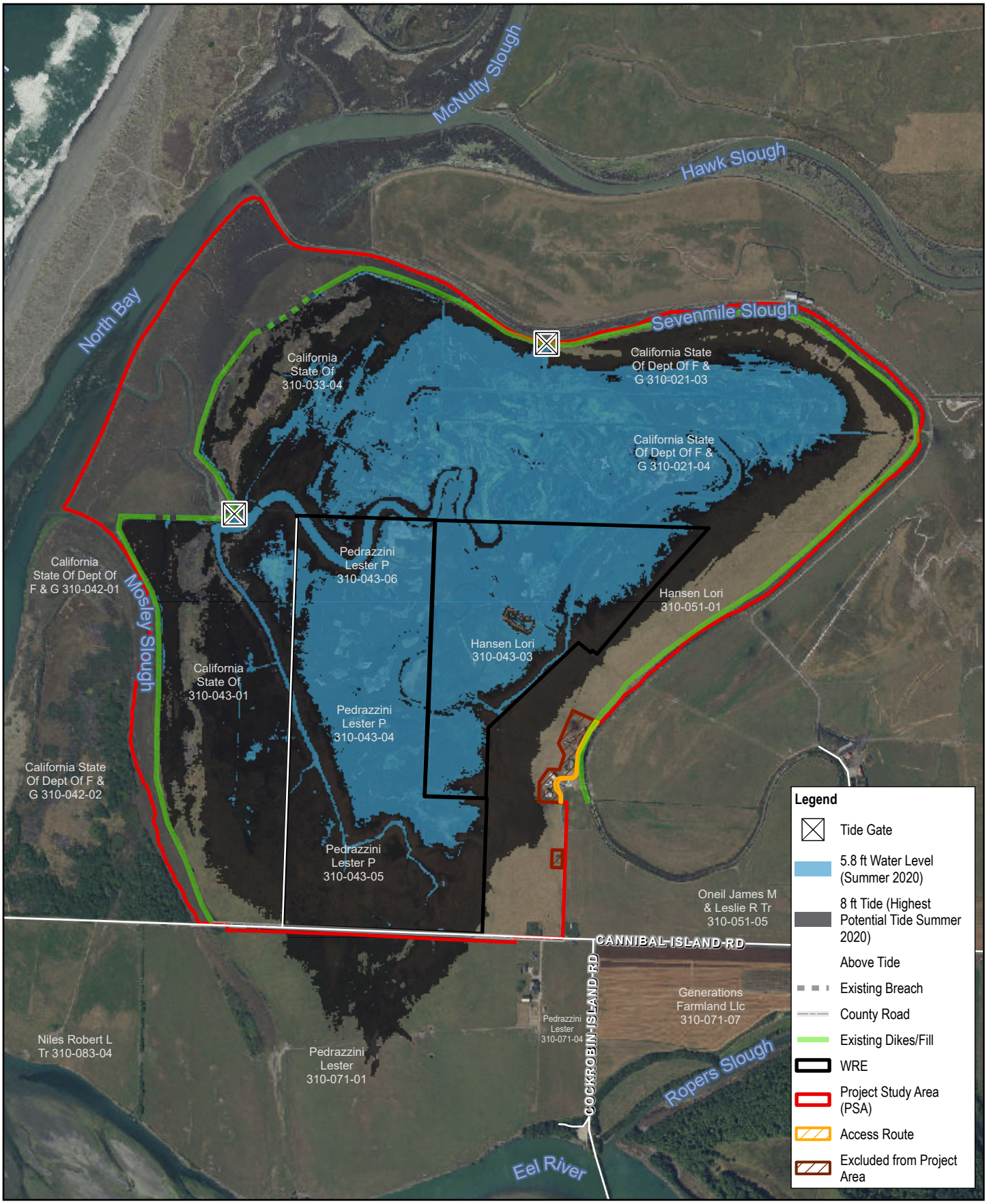

Paper Size ANSI A

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Feet

Map Projection: Lambert Conformal Conic
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Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

N

GHD

CalTrout
Cannibal Island Restoration Project

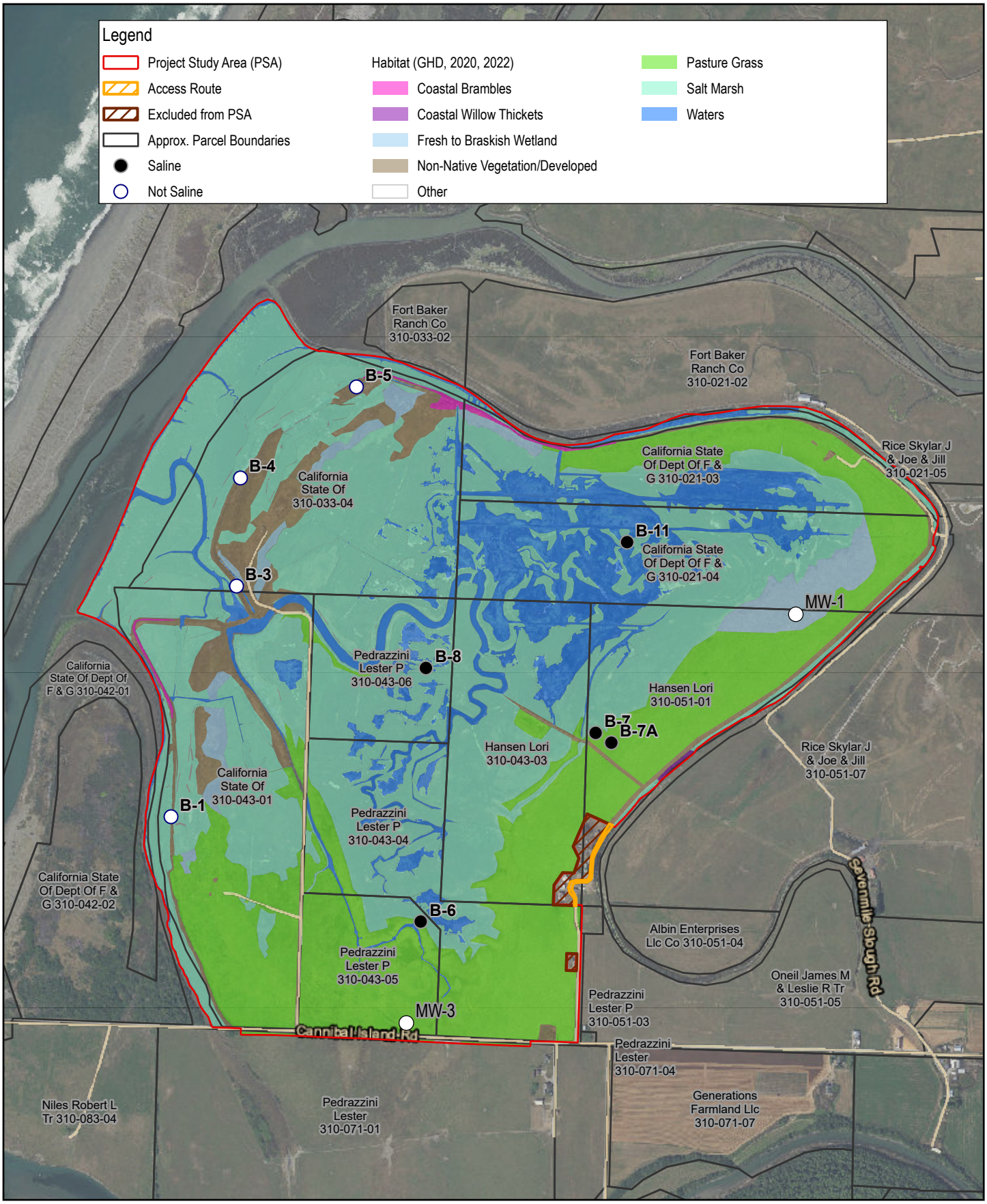
Project No. **11206383**
Revision No. **-**
Date **Feb 2023**

Existing Dikes / Fill

FIGURE 2

N:\US\Eureka\Projects\561\11206383\GIS\Maps\Deliverables\11206383_AgAnalysis\11206383_AgAnalysis.aprx - 11206383_002_ExistingDikesLeveesFill_RevA
Print date: 14 Feb 2023 - 08:39

Data source: project area, GHD 2022; NAIP imagery, 2018; . Created by: jclark2



Paper Size ANSI A

0 350 700 1,050 1,400

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

N

GHD

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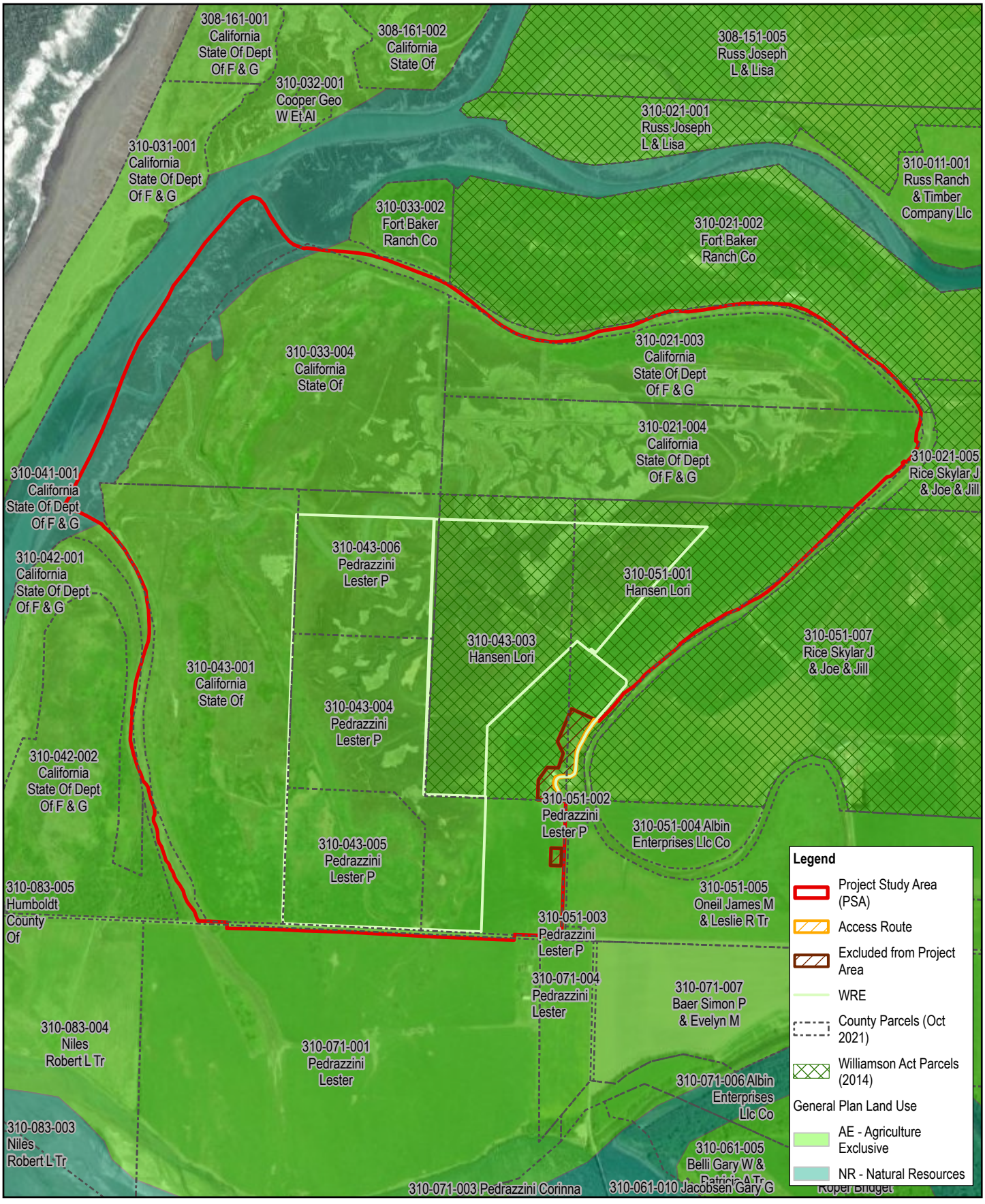
Vegetation Mapping / Soil Sample Locations

Project No. **11206383**
Revision No. **-**
Date **14 Nov 2022**

FIGURE 3

N:\US\Eureka\Projects\561\11206383\GIS\Maps\Deliverables\11206383_AgAnalysis\11206383_AgAnalysis.aprx - 11206383_003_VegSoilSample
Print date: 14 Nov 2022 - 09:15

Data source: GHD PSA, June, 2022; NRCS soils; GHD habitat, 2020; Humboldt County parcel boundaries, Dec 2019; NAIP 2018; World_Transportation: Esri, HERE, GeoTechnologies, Inc.. Created by: jclark2



Paper Size ANSI A

0 350 700 1,050 1,400

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

N

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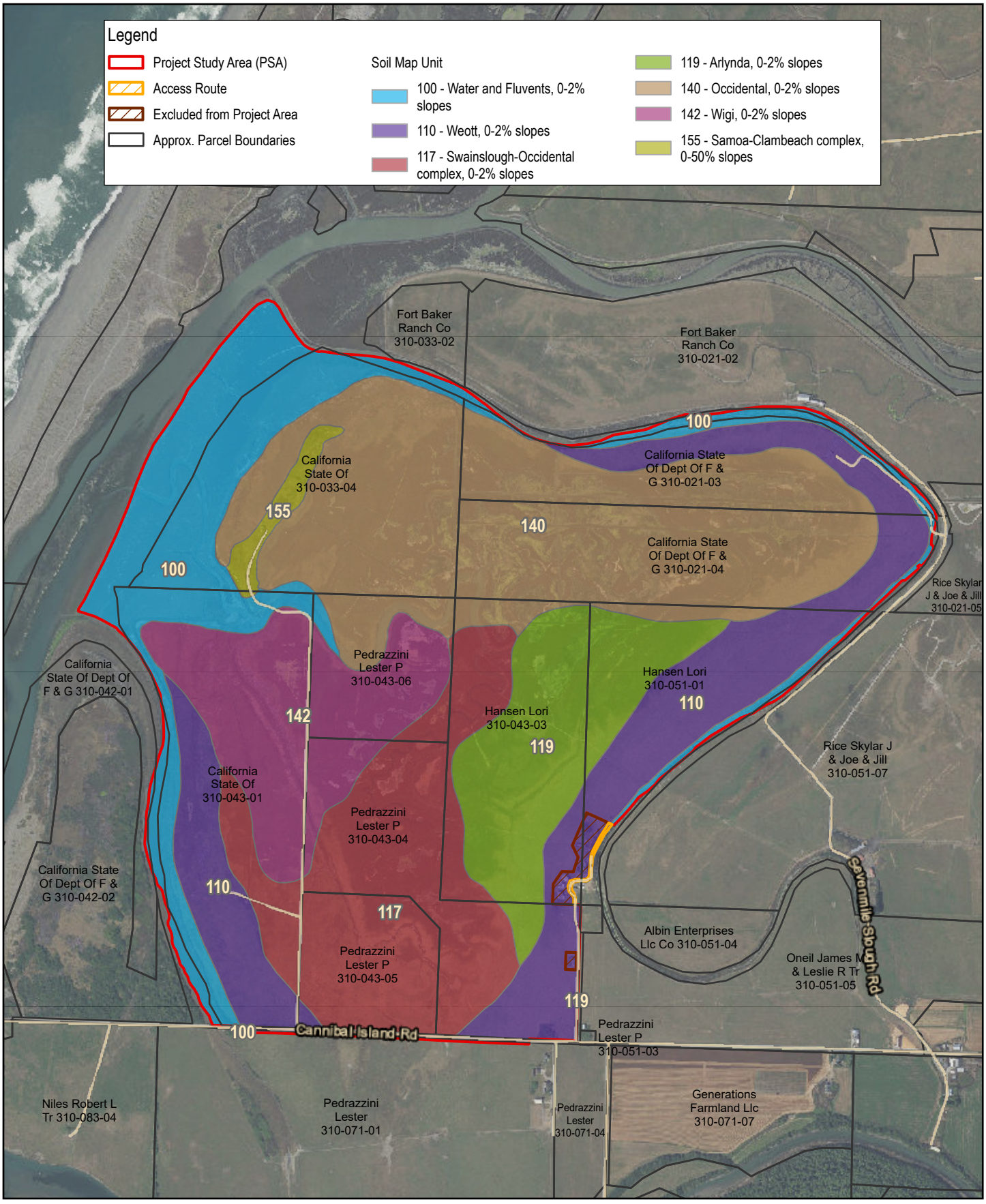
Land Use and Williamson Act Contracts

Project No. **11206383**
Revision No. **-**
Date **Feb 2023**

FIGURE 4

N:\US\Eureka\Projects\561\11206383\GIS\Maps\Deliverables\11206383_AgAnalysis\11206383_AgAnalysis.aprx - 11206383_004_LandUseWilliamson_RevA
Print date: 14 Feb 2023 - 08:43

Data source: Project area, GHD June 2022; World Imagery: Maxar. Created by: jclark2



Paper Size ANSI A

0 350 700 1,050 1,400

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

N

GHD

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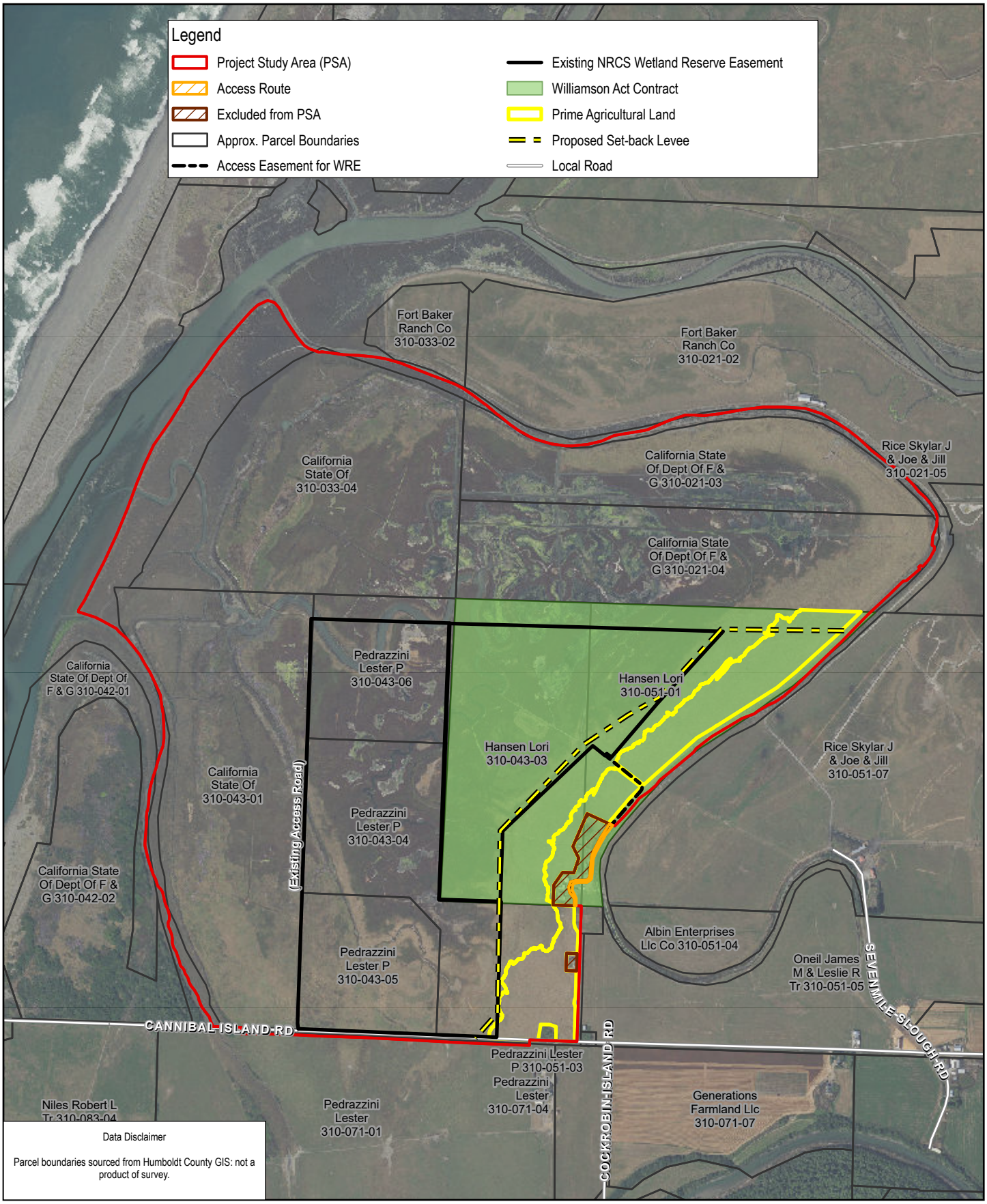
Project No. **11206383**
Revision No. **-**
Date **14 Feb 2023**

NRCS Soils

FIGURE 5

N:\US\Eureka\Projects\561\11206383\GIS\Maps\Deliverables\11206383_AgAnalysis\11206383_AgAnalysis.aprx - 11206383_005_Soils_RevE
Print date: 14 Feb 2023 - 08:44

Data source: PSA, June 2022; NRCS soils; NAIP 2018; World_Transportation: Esri, HERE, iPC. Created by: jclark2



Paper Size ANSI A

0 350 700 1,050 1,400

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

N

GHD

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Project No. **11206383**
Revision No. **-**
Date **30 Jan 2023**

Agricultural Land Designations and Encumbrances

FIGURE 6

N:\US\Eureka\Projects\561\11206383\GIS\Maps\Deliverables\11206383_AgAnalysis\11206383_AgAnalysis.aprx - 11206383_006_PrimeAgLand_RevC
Print date: 30 Jan 2023 - 12:25

Data source: GHD Prime Ag Land, Nov 9, 2022; GHD Project Boundary, June 2022; Humboldt County parcel boundaries, Dec 2019; NAIP 2018; . Created by: jclark2