INITIAL STUDY and ENVIRONMENTAL CHECKLIST

FOR

McKINLEYVILLE ACE HARDWARE IMPROVEMENTS, COMMERCIAL REZONE, AND WETLAND MITIGATION PROJECT

Application No. PLN-2021-17029

August 2026

Lead Agency: County of Humboldt

Lead Agency Contact:
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TABLE OF CONTENTS

Project Summary	1
Project Description	10
Project Setting and Location	16
Environmental Effects	18
Environmental Factors Potentially affected	19
Environmental Impact Analysis:	
I. Aesthetics	20
II. Agriculture and Forestry Resources	23
III. Air Quality	26
IV. Biological Resources	33
V. Cultural Resources	45
VI. Energy	48
VII. Geology and Soils	50
VIII. Greenhouse Gas Emissions	55
IX. Hazards and Hazardous Materials	60
X. Hydrology and Water Quality	65
XI. Land Use and Planning	72
XII. Mineral Resources	74
XIII. Noise	75
XIV. Population and Housing	78
XV. Public Services	80
XVI. Recreation	83
XVII. Transportation	85
XVIII. Tribal Cultural Resources	89
XIX. Utilities and Service Systems	92
XX. Wildfire	95
XXI. Mandatory Findings of Significance	97
XXII. References	102
XXIII. List of Preparers	106

FIGURES AND APPENDICES

Figures

Figure 1 Vicinity Map 2
Figure 2 Existing Parcel Exhibit 3
Figure 3 Proposed Parcel Exhibit 4
Figure 4 Existing Land Use Designations 5
Figure 5 Proposed Land Use Designations 6
Figure 6 Existing Zoning Designations 7
Figure 7 Proposed Zoning Designations 8

Appendices

Appendix A Mitigation Monitoring and Reporting Program (MMRP)
Appendix B Wetland Mitigation Grading and Drainage Plan Construction Drawings (Nov. 2021)
Appendix C Restoration Report (March 2016)
Appendix D Wetland Delineation (September 2014)
Appendix E Wetland Delineation (May 2020)
Appendix F Natural Resources Assessment (August 2019)
Appendix G Residential Upland Clearance Assessment (November 2015)
Appendix H CalEEMod Emissions Results (September 2024)
Appendix I Preliminary Retention and Detention Pond Sizing (November 2018)
Appendix J Biological Resource Assessment (March 2026)
Appendix K Wetland Mitigation and Monitoring Plan (March 2026)
Appendix L Aquatic Resources Delineation Report (January 2026)
Appendix M Botanical Survey Report (March 2026)
Appendix N Concept Site Plans
Appendix O VMT Screening

PROJECT SUMMARY

Date: May 2026

Project Title: McKinleyville Ace Hardware Improvements, Commercial Rezone, and Wetland Mitigation Project

Lead Agency: County of Humboldt

Contact: Steven Santos, Senior Planner
County of Humboldt Planning and Building Department
3015 H Street, Eureka, CA 95501

Location: The project in the McKinleyville area, on the east side of Central Avenue approximately 450 feet south from the intersection of Murray Road and Central Avenue, on the property know as 2707, 2745, and 2725 Central Avenue identified as Assessor's Parcel Numbers (APNs): 510-081-001, 510-081-002, and 510-081-003. (Figure 1)

Coastal Zone: No

Project Parcel(s): Assessor's Parcel Numbers (APNs): 510-081-001, 510-081-002, and 510-081-003. (Figure 2)

Existing Land Use Designations: (Figure 4)
Commercial Services with Airport Land Use Compatibility Zone Overlay (CS, AP); Residential Low Density (1-7 units/acre) with Airport Land Use Compatibility Zone Overlay (RL1-7, AP); McKinleyville Community Plan.

Existing Zoning: (Figure 6)
Community Commercial; (C-2); Residential One-Family (R-1); Airport Safety Review (AP); Noise Impact (N); Streamside Management Areas and Wetlands Combining Zones (WR).

Proposed Zoning and Land Use Designations: (see Figure 5 and 7)

LACO			
1-800-515-5054 www.lacoassociates.com	PROJECT GPA, ZONE RECLASSIFICATION, AND LLA	BY MCH	FIGURE 1
	CLIENT BLACK DOG PARTNERSHIP	CHECK MKR	
	LOCATION 2725 CENTRAL AVE. MCKINLEYVILLE	DATE 5/01/2024	JOB NO. 9909.00
	VICINITY MAP		

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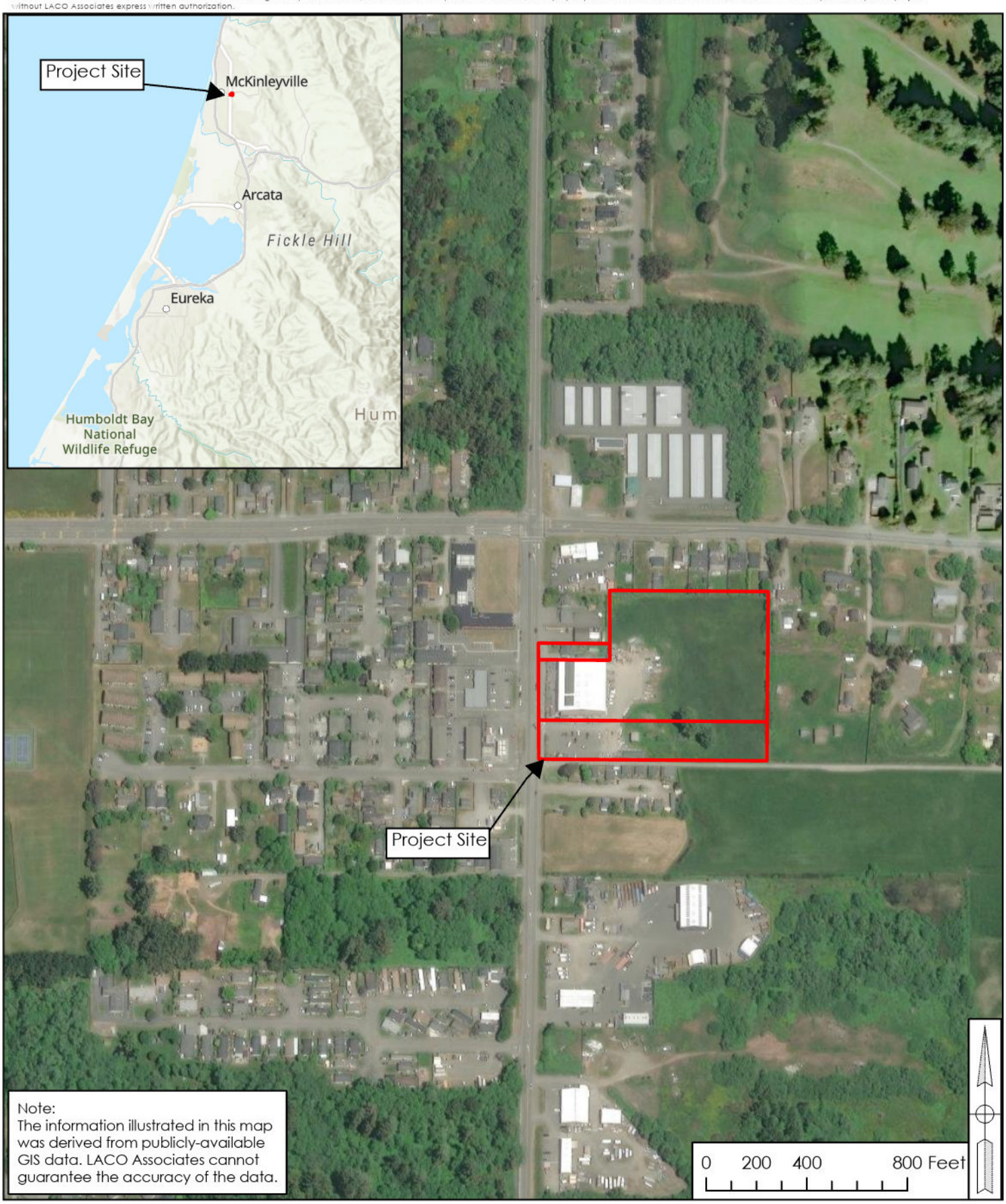

LACO	PROJECT	GPA, ZONE RECLASSIFICATION, AND LLA	BY	MCH	FIGURE
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	LOCATION	2725 CENTRAL AVE. MCKINLEYVILLE	DATE	5/01/2024	JOB NO. 9909.00
		EXISTING PARCEL EXHIBIT			

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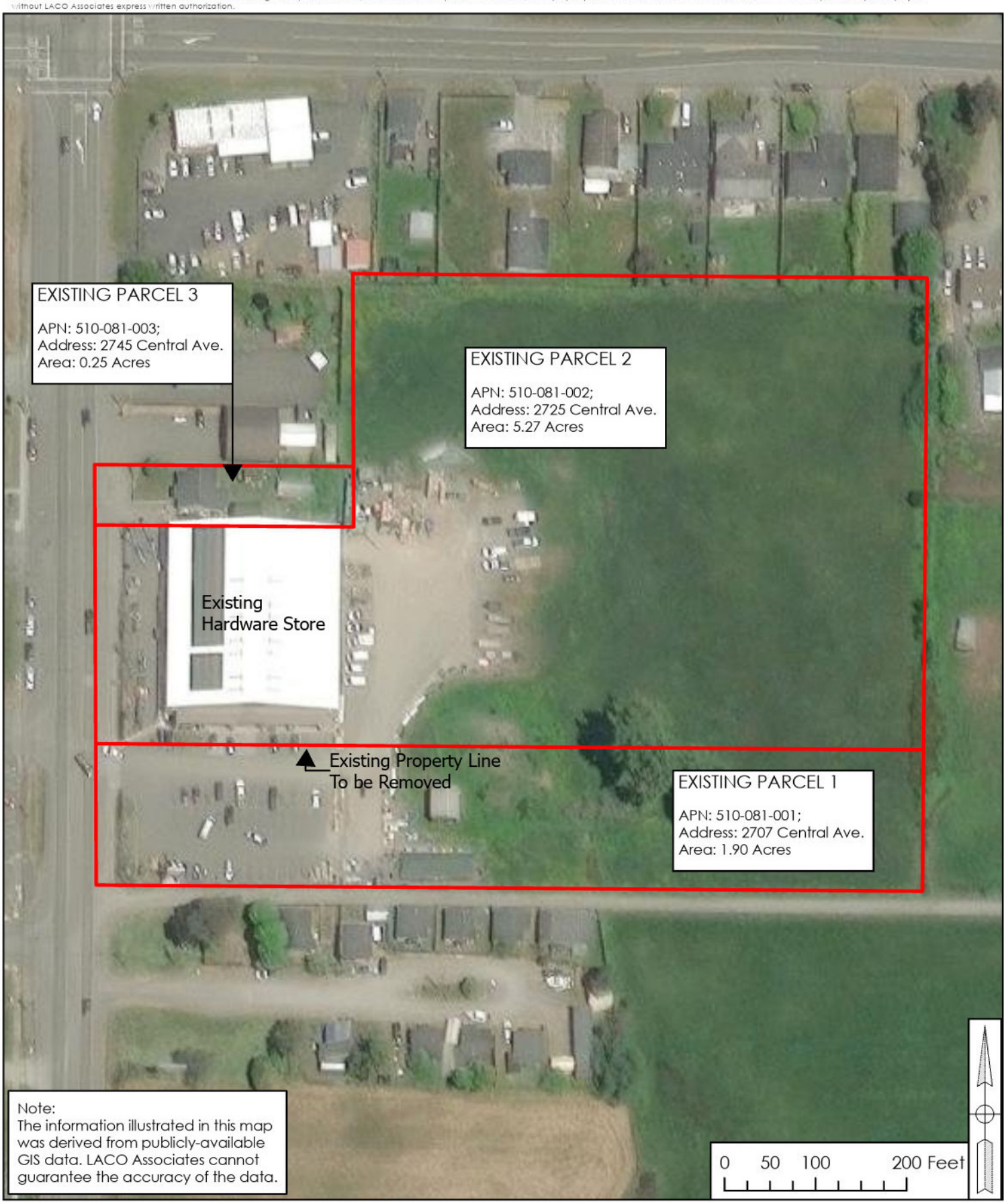

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1-800-515-5054 www.lacoassociates.com	PROJECT	GPA, ZONE RECLASSIFICATION, AND LLA	BY MCH	FIGURE 3
	CLIENT	BLACK DOG PARTNERSHIP	CHECK MKR	
	LOCATION	2725 CENTRAL AVE. MCKINLEYVILLE	DATE 5/01/2024	JOB NO. 9909.00
		PROPOSED PARCEL EXHIBIT		

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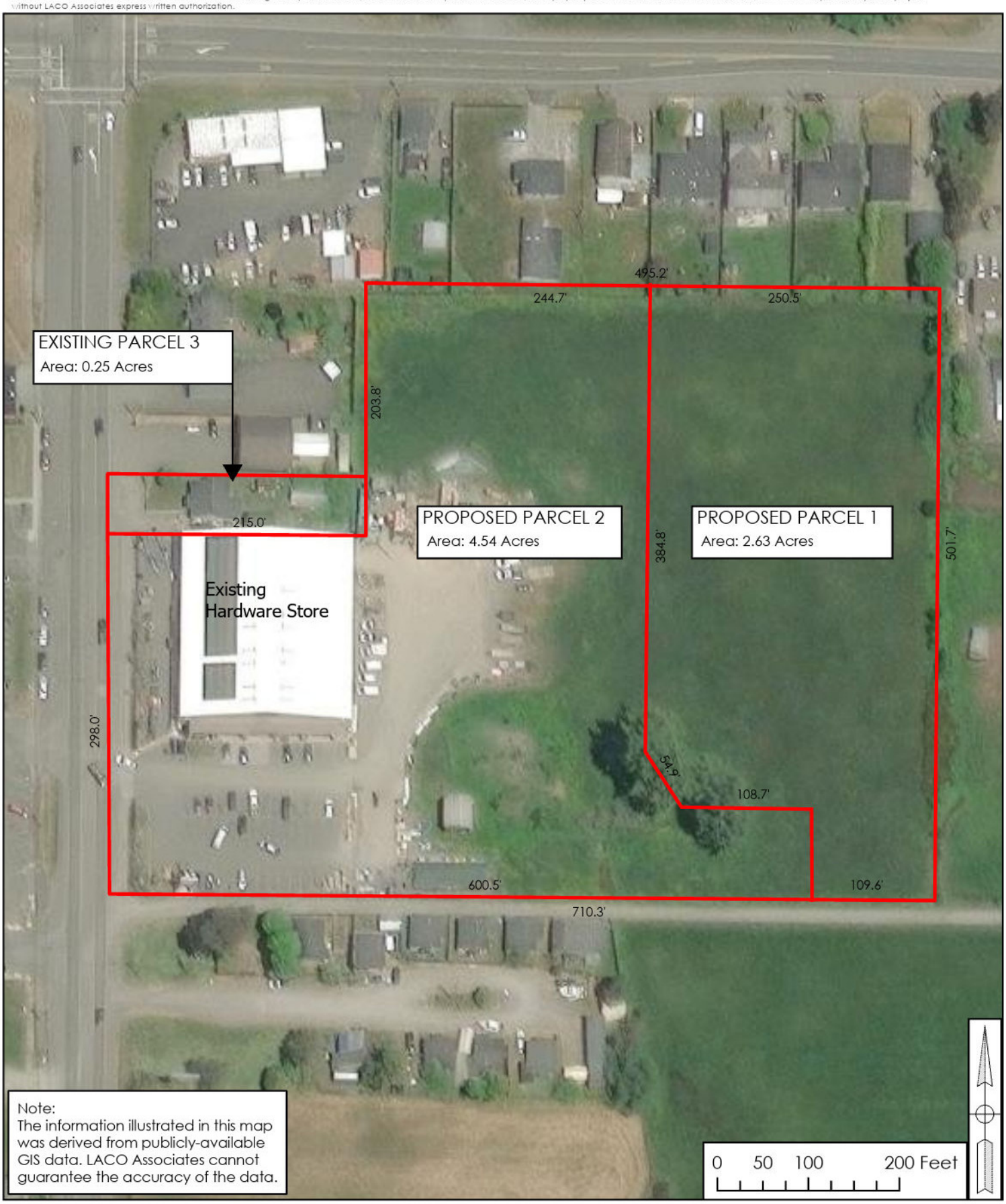

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	CLIENT BLACK DOG PARTNERSHIP	CHECK MKR	
	LOCATION 2725 CENTRAL AVE. MCKINLEYVILLE	DATE 5/01/2024	JOB NO. 9909.00
	EXISTING LAND USE DESIGNATIONS		

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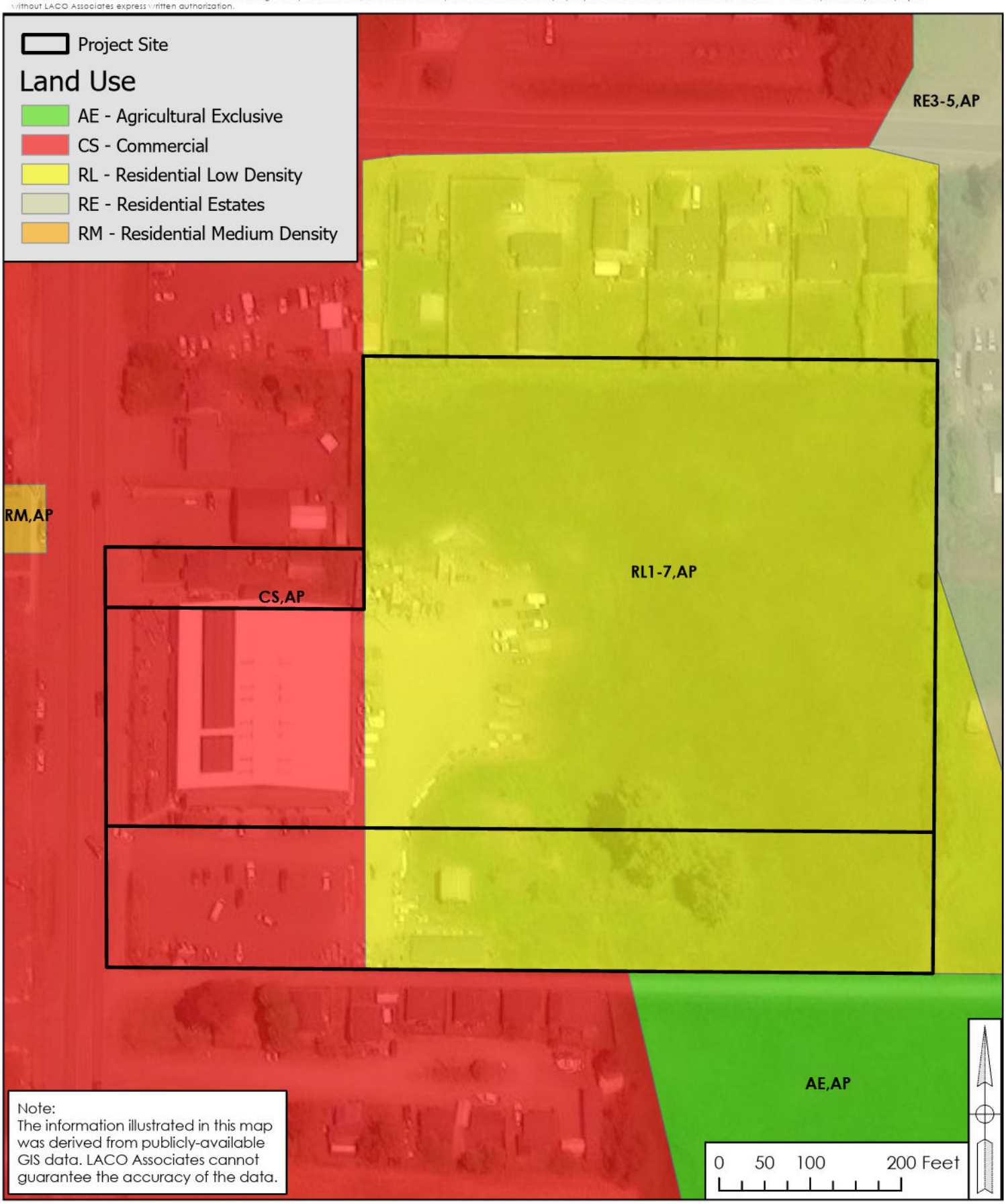

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LACO			
1-800-515-5054 www.lacoassociates.com	PROJECT GPA, ZONE RECLASSIFICATION, AND LLA	BY MCH	FIGURE 5
	CLIENT BLACK DOG PARTNERSHIP	CHECK MKR	
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	PROPOSED LAND USE DESIGNATIONS		

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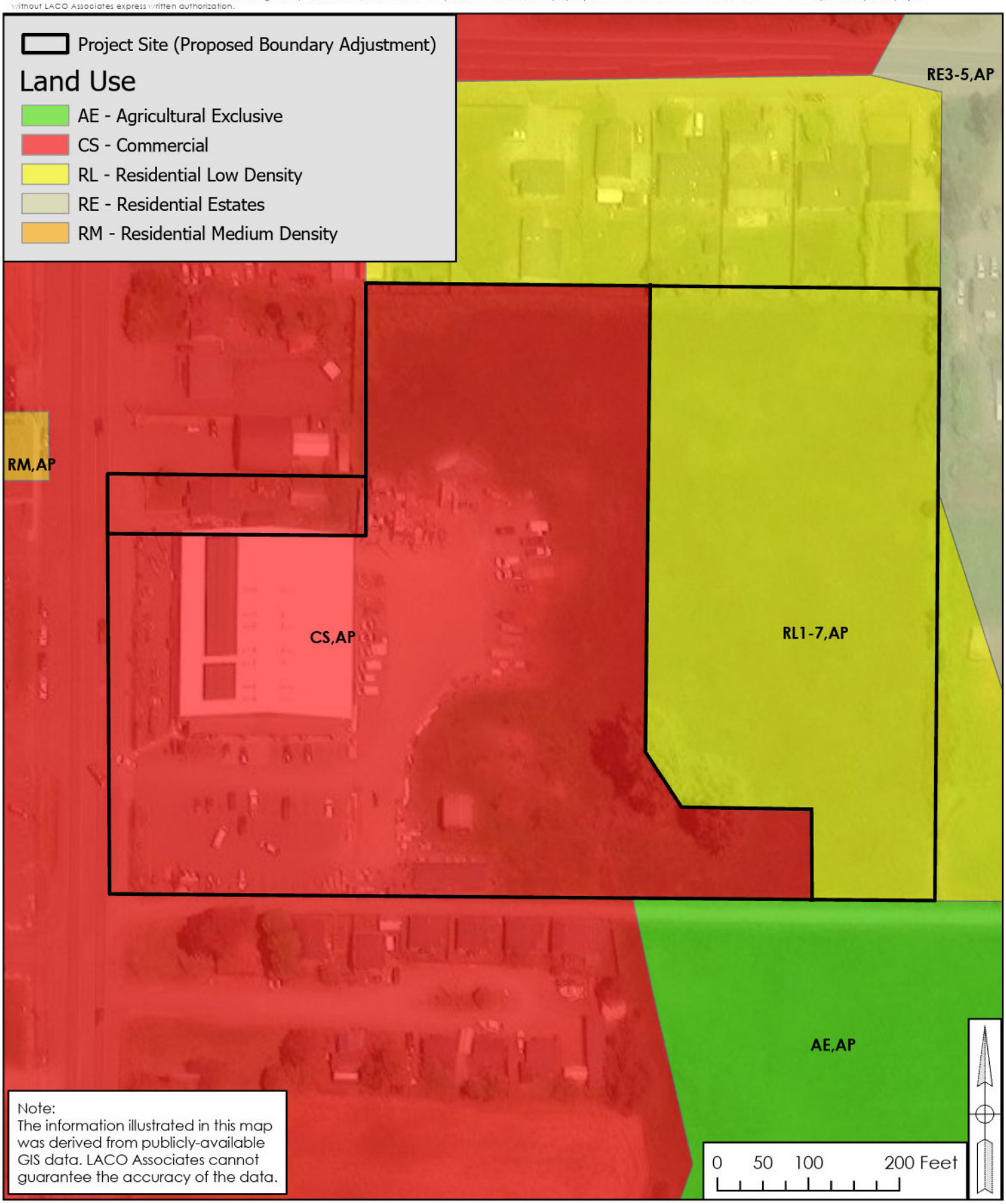

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LACO				
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	CLIENT	BLACK DOG PARTNERSHIP	CHECK MKR	
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		EXISTING ZONING		

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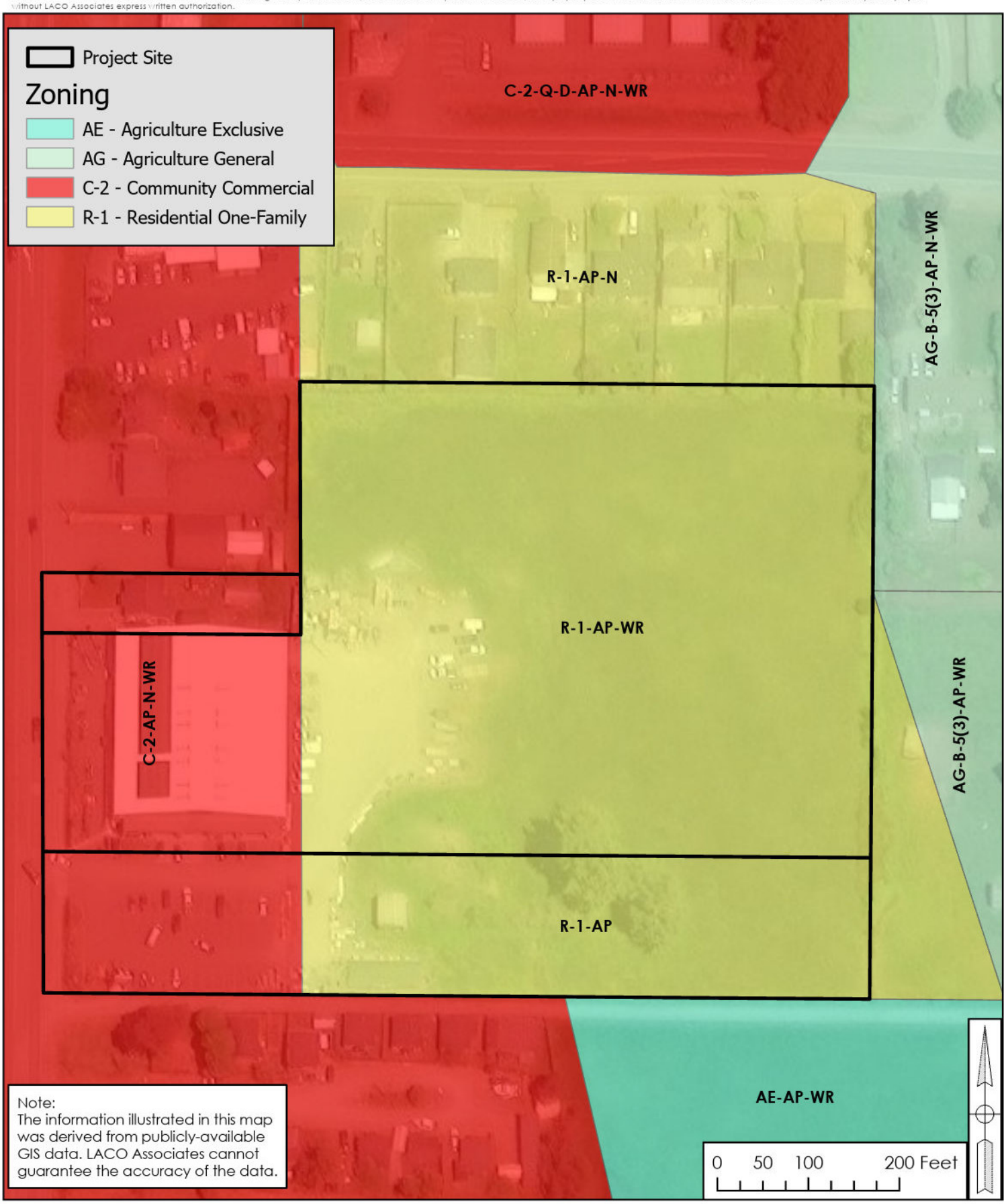

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LACO			
1-800-515-5054 www.lacoassociates.com	PROJECT GPA, ZONE RECLASSIFICATION, AND LLA	BY MCH	FIGURE 7
	CLIENT BLACK DOG PARTNERSHIP	CHECK MKR	
	LOCATION 2725 CENTRAL AVE. MCKINLEYVILLE	DATE 5/01/2024	JOB NO. 9909.00
	PROPOSED ZONING		

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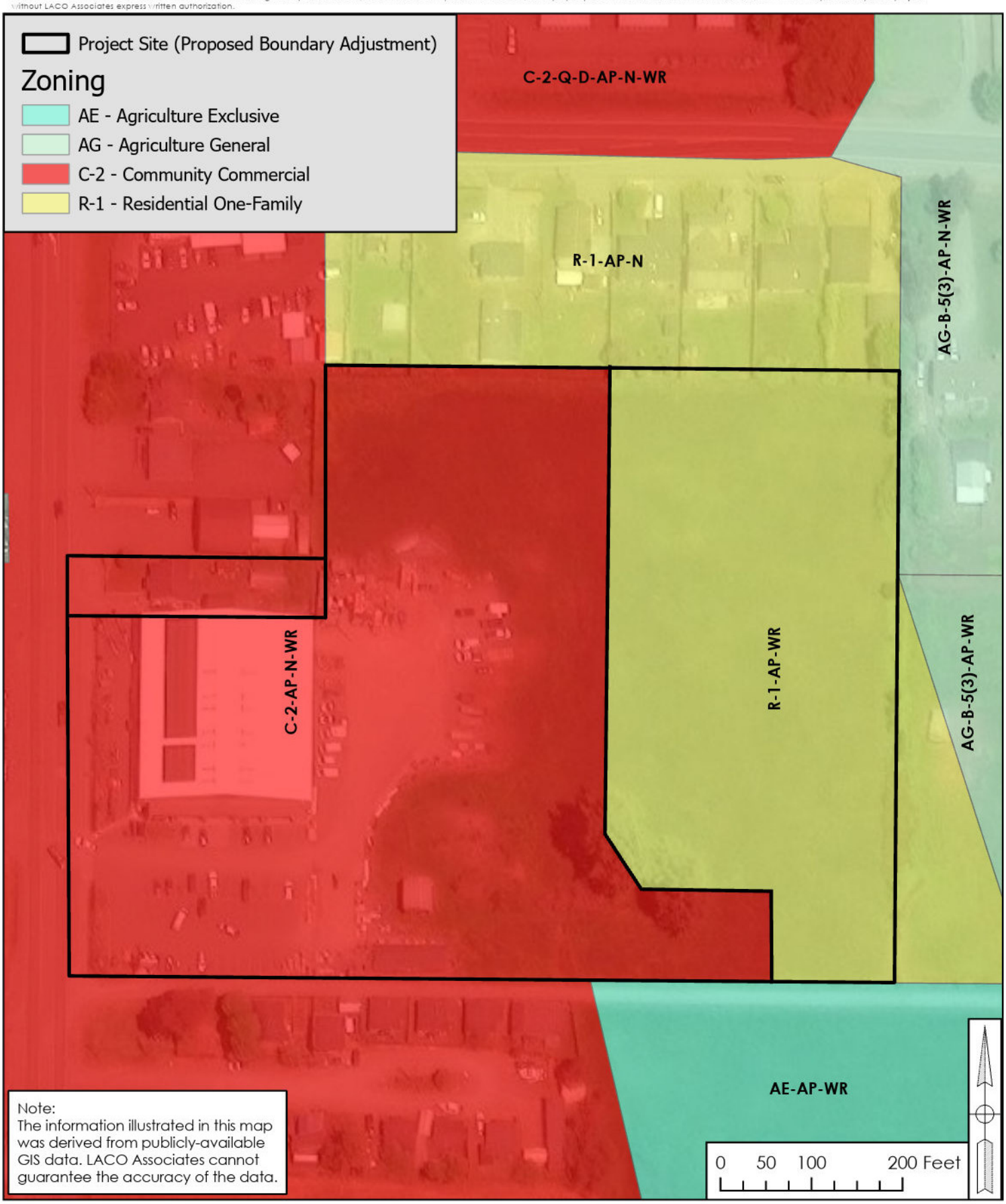

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PROJECT DESCRIPTION

Project Overview

Black Dog Partnership (Applicant) is proposing modifications to the existing McKinleyville Ace Hardware retail store to allow for retail infrastructure to be moved and to provide additional parking for employees on two adjacent properties identified as APNs 510-081-001 and 510-081-002, located at 2707 and 2725 Central Avenue in McKinleyville. A General Plan Amendment, Zone Reclassification, and Lot Line Adjustment is also proposed for the two properties to adjust the boundaries of the properties' current land use and zoning designations and lot lines for consistency with the existing commercial development and proposed improvements on the subject properties. Also included is a Special Permit for relocation of an existing bioswale and associated fill and wetland restoration on APNs: 510-081-001 and 510-081-002 which is further discussed below (herein referred to as "project" or "proposed project"). Collectively, the three parcels (APNs: 510-081-001, 510-081-002, and 510-081-003) represent the project site. Per the Applicant, the primary purpose of the project is to increase the functional commercial use of the site.

Property Details

Currently, APN 510-081-002 is approximately 5.27 acres in size, and APN 510-081-001 is approximately 1.90 acres in size, and APN 510-081-003 is approximately 0.25 gross acres in size for a total of 7.42 acres (see Table 1).

Table 1 (See also Figure 1)

APN	Owner	Address	Approx. Acres
510-081-001	Black Dog Partnership	2707 Central Avenue	1.90
510-081-002	Black Dog Partnership	2725 Central Avenue	5.27
510-081-003	Black Dog Partnership	2745 Central Avenue	0.25
		TOTAL	**7.42**

Surrounding Land Uses and Setting
The proposed project is in the unincorporated McKinleyville area and zone for commercial and residential uses. The site has been used as a commercial scale hardware store for approximately 10 years along the frontage with Central Avenue while the bulk of the eastern portion of the site, which is zoned for residential, has been open fields. Surrounding land uses consist of predominantly commercial and some industrial uses along Central Avenue, Commercial and residential uses along Murray Road as well as agricultural uses to the east.

Other Public Agencies Whose Approval is Required (e.g., permits, financing approval, or participation agreement):

- County of Humboldt Building Inspection Division – Building Permits and Grading Permits
- County of Humboldt Planning Division (Planning Commission) – Lot Line Adjustment and Special Permit
- County of Humboldt Public Works – Encroachment Permit
- County of Humboldt Division of Environmental Health – CUPA
- County of Humboldt Board of Supervisors – General Plan Amendment and Zone Reclassification
- California Department of fish and Wildlife – Lake and Streambed Alteration Agreement
- State Water Resources Control Board – Construction General Permit or 401.

Have California Native American Tribes Traditionally and Culturally Affiliated with the Project Area Requested Consultation Pursuant to Public Resources Code Section 21080.3.1?
Consultation with Native American tribes traditionally and culturally associated with the project area has been an ongoing part of the process. Specifically, an invitation for Tribal Consultation pursuant to AB 52 was sent to all tribes identified as potentially being affected by the NAHC on October 5, 2021 and again on July 18, 2025. No tribes responded to request consultation. A cultural resources investigation report was prepared by a qualified archaeologist which concluded that no cultural or historical resources were present on the property and recommended standard inadvertent discovery protocols, which are incorporated into the mitigation measures.

Project Background
The Applicant applied for a building permit for construction of a commercial retail structure (McKinleyville Ace Hardware) in 2014 on APNs: 510-081-001 and -002. Due to the properties' split zoning (C-2 and R-1), the development was limited to the C-2-zoned portion of the subject parcels. No additional parking or storage was allowed behind the structure in the R-1 zoned portion of the properties, which also contain wetlands.

As stated in the *Restoration Report* prepared by Streamline Planning Consultants in March 2016 (Appendix C), the existing McKinleyville Ace Hardware retail store was constructed on the subject Site between the fall of 2014 and spring of 2015. During this time, approximately 1,000 square feet of gravel was pushed into the westernmost edge of a three-parameter wetland located around the existing barn. The post-construction runoff requirements were not met to

the satisfaction of the North Coast Regional Water Quality Control Board (RWQCB). Although two bioswales were installed on the western side of the property along Central Avenue, no post-construction runoff measures were installed to retain runoff in the eastern watershed. An onsite meeting with the RWQCB, California Department of Fish and Wildlife (CDFW) staff, the landowner, and several interested parties occurred in January 2016 to discuss and remediate these issues (Streamline, 2016).

Site restoration work was performed in February 2016 and included removal of fill materials within the wetland near the barn to the southeast of the existing retail store, and construction of an approximately 1,000-square-foot bioswale between the wetland and the retail store and parking area. The bioswale was designed to accommodate roof runoff from the southeast downspout from the store. A new drain line was installed, which runs underneath the gravel driveway and directly into the bioswale. The purpose of the bioswale was to retain and infiltrate stormwater before reaching the wetland area (Streamline, 2016). In April 2016, an after-the-fact Emergency Special Permit (SP-16 040E) was granted by the County under Humboldt County Code section 312-5 for the following:

1. Construction of the bioswale.
2. Installation of a roof drain line to run directly into the swale before wetland.
3. Removal of approximately 20 cubic yards of gravel fill within a delineated wetland.
4. Installation of a boundary fence around the delineated wetland to prevent further encroachment.
5. Restoration of wetland vegetation, as needed.

The bioswale, berm, and restored wetland area was seeded with a mix of grass species found naturalized throughout McKinleyville. The restored area was monitored for two years. Long term maintenance of the bioswale consists of periodically mowing, weed control, or livestock grazing, as appropriate. If sediment is found to be building up, it is removed to maintain functionality of the bioswale.

Additionally, a petition request was heard and approved by the Board of Supervisors in April 2015 for a General Plan Amendment and Zone Reclassification for the three properties. Granting of the petition was required before applying for the General Plan Amendment and Zone Reclassification. The purpose of the requested General Plan Amendment and Zone Reclassification is to realign the boundaries of the C-2 zone and CS land use designation with the proposed lot line adjustment. The realignment will allow for retail space expansion and additional parking as there is insufficient commercially zoned land to operate effectively on the subject parcels.

Project Components

Combined, the project is anticipated to result in 4.66 acres of on-site improvements. The various aspects of the project are described further below.

McKinleyville Ace Hardware Improvements

As described in the 2015 General Plan Amendment and Zone Reclassification Petition (PLN-

9592-GPA), the Applicant had difficulty relocating all business assets, infrastructure, product, and services from the prior store location (located at Central Avenue and Pickett Road in McKinleyville) to the new location on Parcels 1 and 2, due to the size of the commercially planned and zoned portion of the project parcels and the amount of space needed for these materials.

Upon completion of the requested General Plan Amendment, Zone Reclassification, and Lot Line Adjustment, the existing zoning and land use designations will be realigned to follow the proposed new parcel lines. Proposed parcel 2 will (See Figure 3) will allow be zoned and designated for commercial uses. This will allow for additional storage and approximately 56 spaces parking to the east of the existing retail store. Expansion of the existing retail store is proposed to include paving approximately 53,250 square feet of parking lot and gravel surface of approximately 38,770 square feet. Up to three new structures totaling 11,730 square feet are proposed, including a greenhouse, a lumber rack structure, and an optional future lumber rack. The location of these proposed structures is depicted in the Concept Site Plan in Appendix N. The parking and storage areas are proposed to extend to the northern end of Proposed Parcel 2, while conforming to all development standards.

The retail store currently has an existing storage and staging area to the east of the store, within land currently designated and zoned residential, as shown on Figures 2, 4, and 6. These uses are not currently compliant with existing zoning and land use designations. The proposed project and associated General Plan Amendment and Zone Reclassification will allow for these areas to be compliant within commercially designated and zoned land.

Additional improvements at the existing retail store include reconfiguration of the existing site entrance. The existing retail store currently takes access directly from Central Avenue. The project proposes a new public street, “Ace Avenue,” along the southern portion of the Site, off Central Avenue. The street is proposed to be 20 feet in width and would be developed in accordance with Humboldt County Department of Public Works requirements. The retail store ingress and egress location will then be reconfigured to take access from Ace Avenue, rather than Central Avenue (see Figure 8), and would be paved and gated. An encroachment permit would be required from the County’s Department of Public Works for any work within the County right-of-way.

Proposed General Plan Amendment, Zone Reclassification, and Lot Line Adjustment

Under the proposed project, the area currently designated and zoned as Commercial Services (CS, AP) and Community Commercial (C-2-AP-N-WR) with respective combining zones on Parcels 1 and 2 would shift 190 feet to the east, with an additional area in the southeastern corner to contain the proposed stormwater retention basin and wetland/bioswale improvements, including a variable width vegetated buffer, proposed along the eastern edge of the new parcel boundary. In addition, the current boundary line dividing the two properties, which currently runs east to west (see Figure 2), would be adjusted to instead run north to south, as shown in Figure 3. The newly configured parcels are referred to as proposed Parcel 1 and proposed Parcel 2 in the Initial Study. Proposed Parcel 1 would be the eastern residential parcel

and proposed Parcel 2 would be the western commercial parcel containing the existing retail store. Following approval and recordation of the respective lot line adjustment with the Humboldt County Clerk, new Assessor Parcel Numbers (APNs) would be issued for the reconfigured parcels.

As depicted in Figure 3, the parcel line dividing proposed Parcels 1 and 2 has been aligned at its southern terminus to contour around and include the stormwater retention basin/bioswale improvements with a 0.95-acre variable width vegetated buffer, in addition to the existing three-parameter wetland, on proposed Parcel 2. After the proposed lot line adjustment, proposed Parcel 1 would be 2.63 acres and Proposed Parcel 2 would be 4.54 acres (see Figure 3). Proposed Parcel 1 would be zoned and designated for residential use, while Proposed Parcel 2 would be commercially zoned and designated and would comprise the existing McKinleyville Ace Hardware retail store (See Figure 5). No changes are proposed to APN 510-081-003 also referred to as Parcel 3. No lot line adjustments, zone reclassification, or general plan amendment is proposed for Parcel 3.

Tables 2 and 3, below, show the current and proposed area (in acres) comprising each land use and zoning designation on the three properties.

Table 2. Current Area of Existing Land Use and Zoning Designations by Property

Current Land Use	Current Zoning	Existing Area in Approx. Acres Per APN			Total
		510-081-001	510-081-002	510-081-003	
CS	C-2-AP-N-WR	0.62	0.97	0.25	1.84
RL1-7	R-1-AP	1.28	0	0	1.28
RL1-7	R-1-AP-WR	0	4.30	0	4.30
	Total	1.90	5.27	0.25	7.42

Table 3. Proposed Area of Modified Land Use and Zoning Designations by Property

Current Land Use	Current Zoning	Proposed Area in Approx. Acres Per Proposed Parcel / Existing APN			Total
		Parcel 1	Parcel 2	510-081-003	
CS	C-2-AP-N-WR	0	4.54	0.25	4.79
RL1-7	R-1-AP	0	0	0	0
RL1-7	R-1-AP-WR	2.63	0	0	2.63
	Total	2.63	4.54	0.25	7.42

Based on information provided in Tables 2 and 3 above, the proposed project will increase the amount of land planned and zoned for commercial use and decrease the amount of residentially planned and zoned land by a total of approximately 2.95 acres, respectively.

Proposed Wetland and Bioswale Modifications and Improvements

A Special Permit for relocation of an existing bioswale, fill, and wetland restoration on APNs: 510-081-001 and 510-081-002 is part of the proposed project. As shown in the Grading and Drainage Plan construction drawings (Appendix B) as well as the figures in the Wetland Mitigation and Monitoring Plan (Appendix K), the project includes modifications to the existing wetland area, in addition to construction of a stormwater detention basin within the southern portion of the Site and construction of a bioswale along the eastern boundary of Proposed Parcel 2.

Under the project, a portion of the existing three-parameter wetland located north and east of the existing barn would be filled, with the remaining wetland area to be reconfigured. Additionally, a separate stormwater detention basin is proposed southeast of the reconfigured wetland to capture run-off from the McKinleyville Ace Hardware retail store. In addition, an approximately 0.33-acre elongated bioswale along the majority of Proposed Parcel 2's eastern boundary to contain runoff from Proposed Parcel 2 (western parcel) and prevent it from flowing onto adjacent proposed Parcel 1 to the east. A 0.95-acre, variable width vegetated buffer is proposed around the entire bioswale and most of the proposed reconfigured wetland. The surrounding area would be graded to provide positive draining towards the proposed reconfigured wetland.

A Preliminary Retention and Detention Pond Sizing Report (Sizing Report) was prepared by SHN in November 2018 (see Appendix I) to determine the volume of storage capacity required to meet post-development drainage requirements for the Site. As stated in the Sizing Report, expansion of the existing retail store is proposed to include paving of approximately 53,250 square feet of parking lot and gravel surface of approximately 38,770 square feet, in addition to constructing up of up to three new buildings totaling 11,730 square feet, including a greenhouse, a lumber rack structure, and an optional future lumber rack.

The proposed development is classified as a hydromodification project under the *Humboldt Low Impact Development Stormwater Manual*, creating more than 1 acre of impervious surface area. Hydromodification projects must meet the following two requirements:

1. The project must use bioretention facilities or equivalent LID treatment or hydromodification to capture and treat excess runoff from the 85th percentile, 24-hour storm that is not retained or infiltrated by site design measures; and
2. Post-project runoff rate shall not exceed the pre-project runoff rate for the 2-year 24-hour storm (Appendix I).

In addition, the McKinleyville Community Plan (MCCP) requires that *"…Development shall only be allowed in such a manner that downstream peak flows will not be increased"* (Section 3310 Policy 5, MCCP).

Under the Sizing Report, the preliminary retention basin capacity was sized to retain excess runoff from the 85th percentile rain event, to satisfy the LID manual requirement, and detain runoff from the 100-year storm so that it does not exceed the pre-project 2-year storm runoff

rates, to satisfy the requirements of the MMCP. It was determined the amount of excess runoff from the 85th percentile 24-hour storm that must be retained is 17,964 gallons or approximately 2,400 cubic feet, and the volume to be detained to mitigate the runoff flows was determined to be 8,130 cubic feet, for a combined required pond volume of 10,530 cubic feet (Appendix I, pp.3-4).

As described in Appendix B, the total area to be disturbed associated with the proposed wetland and bioswale modifications and improvements will be approximately 1.31 acres, and total earthwork will comprise approximately 930 cubic yards of cut and 290 cubic yards of fill. The actual amount of earth moved may vary, depending on compaction, consolidation, stripping requirements, and the contractor's method of operation. However, the total amount of earth moved will not exceed the disturbed area described above.

In addition, the Applicant, in coordination with an adjacent property owner to the south (APN: 510-071-002), will replace an existing damaged culvert located under Martin Road that is meant to convey stormwater between the northern and southern sides of Martin Road (see culvert location on Figure 8 and Section X, Hydrology and Water Quality, for further discussion).

Access

Access to the Site is currently via Central Avenue, which runs along the western side of the project parcels. Site access will be reconfigured as part of the proposed project. Specifically, a new 20-foot-wide public street, "Ace Avenue," is proposed along the southern portion of the Site, off Central Avenue, which will be developed in accordance with Humboldt County Department of Public Works requirements. The ingress and egress location for the existing retail store will be reconfigured to take access from Ace Avenue, rather than Central Avenue and would be paved and gated.

Additionally, APN: 510-081-002 contains an existing 20-foot-wide easement for road purposes from the northeastern corner of the property, heading north through the eastern portion of the property identified as APN: 510-081-009, terminating at Murray Road. An existing garage is located within the easement. If development occurs on proposed Parcel 1, the Applicant proposes installation of a 6-foot-wide walking and biking trail within the easement to offer pedestrian and bicycle access to Murray Road (see Figure 8).

PROJECT SETTING AND LOCATION

The project site (Site), approximately 7.42 gross acres in size, comprises three adjacent properties, identified as Assessor's Parcel Numbers (APNs) 510-081-001 (1.90 gross acres), 510-081-002 (5.27 gross acres), and 510-081-003 (0.25 gross acres). The Site is located on the east side of Central Avenue at 2707, 2725, and 2745 Central Avenue, within the unincorporated community of McKinleyville in Humboldt County, California (see Figure 2). The Site is not located within the coastal zone.

The western portion of the Site is currently developed with the McKinleyville Ace Hardware retail store with associated parking immediately south of the storefront, with a gravel area with

additional parking and storage located immediately east of the building and an existing barn further to the south. The central and eastern portions of the Site consist of open grassy areas with a cluster of trees in the southern portion of the Site and along the Site's eastern boundary. The third project parcel (APN: 510-081-003) contains an existing single-family residence with detached garage. Existing fencing surrounds the entirety of the Site. The Site is relatively flat in nature.

Per the Humboldt County Web GIS, the central and southern portions of the Site (APNs: 510-081-001 and -002) comprise freshwater forested/shrub and freshwater emergent wetlands. Additionally, the Site is located approximately 0.6 miles south of the California Redwood Coast-Humboldt County Airport, and the entirety of the Site is located within Airport Compatibility Safety Zone 6. The northeastern corner of the Site has been identified to contain prime agricultural soils.

According to the Wetland Delineation prepared by SHN Consulting Engineers & Geologists (SHN) in May 2020 (Appendix E) for APNs: 510-081-001 and -002, the two properties were historically used for livestock grazing and motocross riding and contained a residence until construction of the McKinleyville Ace store in 2015. Currently, periodic grazing occurs in the Site's pasture area (eastern portion of the Site). In addition to the existing Ace Hardware retail store, the Site contains a dilapidated wooden barn in the southwestern portion of the Site. Vegetation primarily comprises mixed herbaceous species (Appendix E).

Based on review of the U.S. Fish and Wildlife Service's (USFWS) National Wetlands Inventory (NWI), most of the wetland delineation study area (central portion of the Site) is shown as wetland. Specifically, a palustrine emergent persistent seasonally flooded (PEM1C) wetland is shown intertwined with a palustrine scrub/shrub persistent seasonally flooded (PSS1C) wetland covering nearly the entire Site (Appendix E). No streams are shown to traverse the Site. Per the wetland delineation, one three-parameter area, covering approximately 0.30 acres, was found within the study area. The area adjacent to the existing McKinleyville Ace Hardware retail store heading to the north of the parcel has one to two wetland parameters present, while the eastern half of the study area is characterized as "upland', which no wetland parameters observed (Appendix E and L). Recommendations are included in the wetland delineation report to minimize potential impacts associated with the proposed project and are further discussed under Section IV (Biological Resources) of this Initial Study.

Surrounding uses include commercial and residential uses to the north, with storage units further to the north; low density residential uses to the east; a residential subdivision and open grassland to the south; and a mix of commercial uses, including a gas station, across Central Avenue with residential neighborhoods further to the west.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a **"Potentially Significant Impact"** or "**Potentially Significant Unless Mitigation Incorporated**" as indicated by the checklists on the following pages.

	Aesthetics		Agriculture and Forestry Resources	X	Air Quality
X	Biological Resources		Cultural Resources		Energy
	Geology/Soils		Greenhouse Gas Emissions		Hazards & Hazardous Materials
	Hydrology/Water Quality		Land Use/Planning		Mineral Resources
	Noise		Population/Housing		Public Services
	Recreation		Transportation		Tribal Cultural Resources
	Utilities/Service Systems		Wildfire	X	Mandatory Findings of Significance

DETERMINATION: (To be completed by the Lead Agency) On the basis of this initial evaluation:

☐ I find that the project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the project COULD have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the project COULD have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the project, nothing further is required.

Steven A. Santos — Signature

7/31/2026 — Date

Steven Santos, Senior Planner Humboldt County Planning and Building Department

ENVIRONMENTAL EFFECTS

An environmental checklist follows this section and addresses all potential adverse effects resulting from the proposed project. No significant adverse effects are expected from any of the proposed activities.

An explanation for all checklist responses is included, and all answers consider the whole action involved and the following types of impacts: off-site and on-site; cumulative and project-level; indirect and direct; and construction and operational. The explanation of each issue identifies (a) the threshold of significance, if any, used to evaluate each question; and (b) the mitigation measure identified, if any, to reduce the impact to less than significance. All mitigation measures required for the project are provided in the Mitigation and Monitoring Reporting Program (MMRP), included in Appendix A.

In the checklist the following definitions are used:

"**Potentially Significant Impact**" means there is substantial evidence that an effect may be significant.

"**Potentially Significant Unless Mitigation Incorporated**" means the incorporation of one or more mitigation measures can reduce the effect from potentially significant to a less than significant level.

"**Less Than Significant Impact"** means that the effect is less than significant, and no mitigation is necessary to reduce the impact to a lesser level.

"**No Impact"** means that the effect does not apply to the proposed project or clearly will not impact nor be impacted by the proposed project

I. **AESTHETICS**. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

DISCUSSION

The proposed project would adjust the current configuration of the existing lots in addition to the current land use and zoning designations for consistency with existing development and proposed improvements on the subject properties. The western portion of the Site is currently developed with the McKinleyville Ace Hardware retail store with associated parking immediately south of the storefront, with a gravel area with additional parking and storage located immediately east of the building and an existing barn further to the south. The central and eastern portions of the Site consist of open grassy areas with a cluster of trees in the southern portion of the Site and along the Site's eastern boundary. The third project parcel (APN: 510-081-003) contains an existing single-family residence with detached garage. Existing fencing surrounds the entirety of the Site. The Site is relatively flat in nature.

Upon completion of the requested General Plan Amendment, Zone Reclassification, and Lot Line Adjustment, the existing designations will be modified to expand for commercial uses and the parcels will be reconfigured, allowing for expansion of the McKinleyville Ace Hardware's commercial activities and storage (including lumber, nursery stock, landscaping materials and supplies, etc.), as well as allowing for additional parking (approximately 56 spaces) to the east of

the existing retail store. These additions would occur east of the existing retail store and additional existing development on neighboring properties along Central Avenue, and south of existing development located along Murray Road.

The project also includes a Special Permit for modifications to the existing wetland area, in addition to construction of a stormwater retention basin within the southern portion of the Site and a bioswale along the eastern boundary of proposed Parcel 2. The approximately 0.33-acre bioswale will be located along the majority of proposed Parcel 2's eastern boundary to contain runoff from proposed Parcel 2 on the western side of the site and prevent it from flowing onto the adjacent proposed Parcel 1 to the east. A variable width vegetated buffer is proposed around the entire bioswale and most of the proposed reconfigured wetland. The surrounding area would be graded to provide positive draining towards the proposed reconfigured wetland.

A significant visual impact is not anticipated because of the project, as limited physical changes would occur consistent with the already established commercial use.

a) Have a substantial adverse effect on a scenic vista?

No impact. The proposed project is not located within a city- or county-mapped or designated scenic vista; within a scenic resources area; or along a state scenic highway. The proposed project is compliant with Humboldt County General Plan (2017) Scenic Resources Section Standard SR-S6 and policy SR-P3 because the project is not located with a mapped scenic resource area or scenic highway.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No impact. The western portion of the Site is developed with the existing McKinleyville Ace Hardware retail store and associated infrastructure, with an existing single-family residence and detached garage located immediately north on APN: 510-081-003, while the eastern portion is mostly undeveloped. Existing fencing surrounds the entirety of the Site. While a historic-era barn is located within the southern portion of the Site, it was found not to be historically significant (see Section V, Cultural Resources, below).

c) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Less than significant impact. The proposed project involves minor physical improvements, including wetland improvements, new bioswale and detention pond within the eastern and southern portions of proposed Parcel 2, and expanded commercial activities, storage, and parking for the existing retail store on proposed Parcel 2, in addition to a change in boundary lines and land use and zoning designations. As a result, the existing visual character or quality of the Site and its surroundings would change, but would not be substantially degraded, since

existing trees would be retained to the greatest extent feasible and be consistent with existing development in the vicinity. Additionally, while the configuration of the Site and existing land use and zoning designations would be adjusted, the eastern portion of the Site would remain planned and zoned for low-density and single-family development.

d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?

Less than significant impact. All current and future development of the Site would be subject the Humboldt County Outdoor Lighting Ordinance (HCC 314-105). Development is required to utilize downward facing exterior lighting and to minimize reflective surfaces, thereby reducing the potential for new sources of significant light or glare at the Site, which would adversely affect day or nighttime views in the area. The performance standards of HCC 314-105 would be applied to any new development.

MITIGATION MEASURES

No mitigation required.

FINDINGS

The proposed project would have a **Less than Significant Impact** on Aesthetics.

II. AGRICULTURE AND FORESTRY RESOURCES. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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, forest land (as defined in Public Resources Code section 12220(g), timberland (as defined by PRC 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 forestland to non-forest use?	☐	☐	☐	☒

DISCUSSION

The Site currently includes the McKinleyville Ace Hardware retail store within the western portion of the Site, an existing single-family residence and detached garage north of the retail store, and undeveloped pastureland in the eastern portion of the Site. As previously discussed, the Site is currently designated as Commercial Services (CS) and Residential Low Density (RL1-7; 1-7 units/acre) under the 2017 General Plan and is zoned as Community Commercial with Airport Safety Review, Noise Impact, and Streamside Management Areas and Wetlands Combining Zones (C-2-AP-N-WR), Residential One-Family with Airport Safety Review Combining Zone (R-1-AP), and Residential One-Family with Airport Safety Review and Streamside Management Areas and Wetlands Combining Zone (R-1-AP-WR) under the Humboldt County

Zoning Regulations. While the Site is currently designated and zoned for both commercial and residential use, the boundaries of these land use and zoning designations are proposed to be modified for consistency with existing development and planned improvements on the subject properties.

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?

Less than significant impact. According to Humboldt County WebGIS, approximately 0.43 acres of prime agricultural soils are located within the northeastern corner of the Site. However, the Site is not classified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program (FMMP) of the California Resources Agency (2016). In addition, the portion of the Site that contains the prime agricultural soils is presently and would continue to be designated and zoned for residential use, existing residential uses surround this portion of the Site, and the small area would not be of sufficient size or scale to support intensive agricultural production.

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

No impact. As noted in the discussion above, the Site is zoned for commercial and residential uses. No portions of the site are zoned for agricultural use or a Williamson Act contract.

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

No impact. No portions of the Site are currently designated or zoned as forest land, timberland, or timberland zoned Timberland Production.

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

No impact. No portions of the site are considered forest or timberland.

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 forestland to non-forest use?

No impact. The Site is not mapped as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance under the Farmland Mapping and Monitoring Program. The Site is not designated or zoned for agricultural use or considered forestland.

MITIGATION MEASURES
No mitigation required.

FINDINGS
The proposed project would have **Less Than Significant Impact** on Agricultural and Forestry Resources.

III. AIR QUALITY. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☒	☐	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☒	☐	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

DISCUSSION

The Site is located within the North Coast Air Basin (NCAB) and is subject to North Coast Unified Air Quality Management District (NCUAQMD) requirements. The NCUAQMD is responsible for monitoring and enforcing local, state, and federal air quality standards in the County of Humboldt. The NCUAQMD sets air quality standards for emissions that may include, but are not limited to, visible emissions, particulate matter, and fugitive dust. The Humboldt County portion of the NCAB is currently designated as "non-attainment" or more than allowable limits for breathable particulate matter of 10 microns or less (PM10), and as "attainment", or within allowable limits, with respect to all other federal and state criteria pollutants. Because the NCAB is in non-attainment for PM10 the NCUAQMD has prepared a draft PM10 Attainment Plan identifying control measures that can be implemented to reduce ambient PM10 levels. Unpaved road dust accounts for approximately 58 percent of the County's PM10 emissions (County of Humboldt, April 2017).

The proposed project involves a change in boundary lines and land use and zoning designations, as well wetland and bioswale improvements and construction of a retention basin within the southern and eastern portions of proposed Parcel 2, and expanded commercial activities, storage, and parking for the existing retail store on proposed Parcel 2.

The project and its emission sources are subject to NCUAQMD rules and regulations contained in the most recent version of the *Rules and Regulations of the North Coast Unified AQMD*. During the proposed and potential future construction at the Site, the contractor would be expected to use heavy construction machinery and temporary air pollutant emissions would be associated

with grading, excavation, and construction on the Site. However, the project would be required to comply with policies regarding the control of fugitive dust included in Rule 104 in Section D (Fugitive Dust Emissions) during these activities, as established by NCUAQMD, and all construction equipment would be required to be maintained in good working condition. As stated in Section D of Rule 104 of the NCUAQMD's Rules and Regulations, "reasonable precautions shall be taken to prevent particulate matter from becoming airborne", which includes but is not limited to the following provisions:

1. Covering open bodied trucks when used for transporting materials likely to give rise to airborne dust.
2. Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials. Containment methods can be employed during sandblasting and other similar operations.
3. Conduct agricultural practices in such a manner as to minimize the creation of airborne dust.
4. The use of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads or the clearing of land.
5. The application of asphalt, oil, water or suitable chemicals on dirt roads, materials stockpiles, and other surfaces which can give rise to airborne dusts.
6. The paving of roadways and their maintenance in a clean condition.
7. The prompt removal of earth or other track out material from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water, or other means.

On-site emission sources at the Site currently include stationary, mobile, and fugitive sources associated with operation of the existing McKinleyville Ace Hardware retail store. While various improvements are proposed on-site under the project, significant air quality impacts are not anticipated for ongoing operations but may occur temporarily during consturction. Once construction of the proposed improvements (including wetland, bioswale, retention basin, and commercial-related improvements) is complete, emissions from operation of the project would be comprised of direct and indirect emissions, including exhaust and fugitive dust from the operation of personal vehicles, service trucks, and employees traveling to and from the Site, in addition to the burning of fossil fuels associated with heating activities.

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less than significant impact with mitigation incorporated*.* The project would not conflict with or obstruct implementation of the applicable air quality plan. According to the Humboldt County General Plan, unpaved road dust accounts for approximately 58.2% of the County's PM10 emissions (2017). While the driveway and some parking of the proposed project site is paved, the some areas will be comprised of compacted, well-maintained gravel. To comply with the General Plan and NCUAQMD Rule 104, Section D – Fugitive Dust Emissions, the Proposed Project design incorporates relevant control measures identified in the PM10 Attainment Plan appropriate to incorporate into construction and operational activities. These measures are included as **Mitigation Measures AQ-1.** Therefore, the Proposed Project would not conflict with or obstruct implementation of the NCUAQMD Attainment plan for PM10 and the impacts

would be less than significant with mitigation incorporated.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Less than significant impact with mitigation incorporated. Temporary air pollutant emissions may be associated with grading, excavation, and construction on the Site associated with the proposed on-site improvements. The NCUAQMD has established policies regarding the control of fugitive dust during these activities. When future development is proposed at the Site, the project would comply with NCUAQMD Rules and Regulations, specifically Rule 104 Section 4.0, regarding fugitive dust emissions. This includes covering open bodied trucks used for transporting materials likely to release airborne dust, using water or chemicals for dust control during construction, road grading, and land clearing activities, applying water or suitable chemicals on dirt roads, covering materials stockpiles and other surfaces which can give rise to airborne dusts, and promptly removing tracked material from paved streets.

Potential air quality impacts associated with the proposed project were modeled using the California Emissions Estimator Model (CalEEMod) model and compared to the significance thresholds shown in Table 6. NCUAQMD has not formally adopted significance thresholds for use in evaluating project impacts under CEQA but rather utilizes the Best Available Control Technology (BACT) emission rates for stationary sources as defined and listed in Table 6, below. NCUAQMD does not currently have any thresholds for toxics but recommends the use of the latest version of the California Air Pollution Control Officers Association's (CAPCOA) Health Risk Assessments for Proposed Land Use Project to evaluate and reduce air pollution impacts from new development, which includes recommended mitigation measures to help reduce air pollution impacts anticipated under the proposed project.

Table 6. NCUAQMD Significance Thresholds

Pollutant	Significance Thresholds	
	Daily (pounds per day)	Annual (tons per year)
Carbon monoxide (CO)	500	100
Fluorides (F)	15	3
Hydrogen sulfide (H2S)	50	10
Lead (Pb)	3.2	0.6
Nitrogen oxides (Nox)	50	40
Particulate matter (PM10)	80	15
Particulate matter (PM2.5)	50	10
Reactive organic compounds (ROC)	50	40
Reduced sulfur compounds	50	10
Sulfur oxides (Sox)	80	40
Sulfuric acid mist (H2SO4)	35	7

Total reduced sulfur compounds	50	10

Source: North Coast Unified Air Quality Management District (NCUAQMD) Rules and Regulations. Regulation 1, Rule 110. Best Available Control Technology (BACT). July 9, 2015.

CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects. This program is the standard for Air Quality and GHG analysis within the NCUAQMD jurisdiction. The model quantifies direct emissions from construction and operation activities (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. Further, the model identifies mitigation measures to reduce criteria pollutants and GHG emissions along with calculating the benefits achieved from measures chosen by the used. Vehicles are known to be a major pollution contributor, producing significant amounts of nitrous oxides (NOX), carbon monoxide (CO), ozone (O3), and particulate matter (PM2.5 and PM10), and must also be considered when evaluating potential air quality impacts of a proposed project. In both cases the CalEEMod-generated default values for equipment and project phase time frames were used (except as noted in the respective report).The CalEEMod results in their entirety are included in Appendix H. The CalEEMod model analyzed air quality impacts associated with the improvements currently proposed (including wetland, bioswale, retention basin, and commercial-related improvements).

The CalEEMod model assumes that construction would be constructed over an approximately 4-month period. In addition, the CalEEMod analysis assumes implementation of basic construction and operational-level mitigation measures, including reducing vehicle speeds on unpaved areas to 15 miles per hour. The results of the CalEEMod analysis are shown in Table 7, below.

Table 7. CalEEMod Analysis Results

Pollutant	Emissions (tons/year)			
	Modeled Construction Emissions	Modeled Operational Emissions	Annual Thresholds	Threshold Exceeded?
Carbon monoxide (CO)	0.5987	0.7723	100	no
Nitrogen oxides (NOx)	0.4960	0.3730	40	no
Particulate matter (PM10) (total)	0.0634	0.0714	15	no
Particulate matter (PM2.5) (total)	0.0339	0.0285	10	no
Reactive organic gases (ROG)	0.2347	0.1668	40	no
Sulfur oxides (SO2)	0.0012	0.0016	40	no

Note: Emissions results were the same for both the unmitigated and mitigated scenarios. Source: CalEEMod Analysis Results, September 13, 2024. (Appendix H)

As shown in Table 7, above, the anticipated emissions associated with both construction and operation of the proposed improvements at the Site would be well-below NCUAQMD's annual thresholds of significance for all six criteria pollutants assessed [carbon monoxide (CO), nitrogen oxides (NOx), particulate matter (PM10 and PM2.5), reactive organic gases (ROG), and sulfur oxides (S02)].

NCUAQMD has advised that generally an activity that individually complies with the state and local standards for air quality emissions would not result in a cumulatively considerable net increase in the countywide PM10 air quality violation. As shown in Table 7, above, the currently proposed improvements would not be anticipated to substantially increase pollutant concentrations or exceed NCUAQMD's annual thresholds of significance for the above-listed pollutants. While the project improvements would generate temporary emissions and direct and indirect emissions once construction is complete, the project would not include any source of visible emissions, including intentional fire/burning or manufacturing. However, by complying with NCUAQMD standards and regulations for fugitive dust and maintaining all equipment in good working condition such that potential fugitive dust is controlled and exhaust emissions are minimized, the proposed project would not result in substantial adverse air quality impacts or result in a cumulatively considerable net increase in the PM10 non-attainment levels in Humboldt County. A less than significant impact would occur.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. Sensitive receptors, as defined by NCUAQMD (2014), include, but are not limited to, preschools and daycare centers, K-12 schools, nursing homes, hospitals, Class I Areas (any area having air quality values requiring special protection and which has been designated Class I by a federal, State or local authority), and other locations where there are concentrations of sensitive populations. Sensitive receptors in the vicinity of the project Site include:

- Existing single-family residences, located adjacent to the northern edge of the Site;
- Existing single-family residences, located adjacent to the eastern edge of the Site;
- Existing single-family residences, located immediately south of the Site, across Martin Road;
- Existing single- and multi-family residences, located approximately 186 feet west of the Site, across Central Avenue;
- Existing single-family residences, located approximately 253 feet southwest of the Site, across Central Avenue;
- First Baptist Church of McKinleyville, located approximately 900 feet west of the Site;
- McKinleyville High School, located approximately 0.25 miles the west of the Site;
- McKinleyville Trailer Park, located approximately 0.39 miles south of the Site;
- Morris Elementary School, located approximately 0.45 miles the southwest of the Site;
- McKinleyville Middle School, located approximately 0.46 miles south of the Site;
- Living Water Church, located approximately 0.61 miles southwest of the Site;
- Sovereign Grace Fellowship, located approximate 0.62 miles southeast of the Site;

- Northfork Full Gospel Church, located approximately 0.65 miles south of the Site;
- Church on the Rock, located approximately 0.65 miles southwest of the Site;
- Evans Family Childcare, located approximately 0.67 miles northwest of the Site;
- Pierson Park, located approximately 0.68 miles south of the Site;
- Lil Fishers Learning Center, located approximately 0.68 miles south of the Site;
- Widow White RV Park, located approximately 0.69 miles the northwest of the Site;
- McKinleyville Church of Christ, located approximately 0.69 miles southwest of the Site;
- New Heart Community Church, located approximately 0.78 miles south of the Site;
- Sprouting Scholars Academy, located approximately 0.78 miles south of the Site;
- Grace Good Shepherd Church, located approximately 0.91 miles southwest of the Site;
- United Methodist Church, located approximately 0.94 miles south of the Site;
- Timber Ridge at McKinleyville, located approximately 0.95 miles south of the Site;
- The Church of Jesus Chris of Latter Day Saints, located approximately 1.03 miles south of the Site;
- Catholic Church of Christ the King, located approximately 1.03 miles southwest of the Site;
- Church of the Light, located approximately 1.03 miles southwest of the Site;
- Hiller Park, located approximately 1.07 miles southwest of the Site;
- Gracepoint Church, located approximately 1.3 miles south of the Site;
- New Hope Church of God, located approximately 1.38 miles southeast of the Site;
- McKinleyville Baptist Church, located approximately 1.47 miles southwest of the Site;
- Wesleyan Church of Redwoods, located approximately 1.63 miles southwest of the Site; and
- Mad River County Park, located approximately 2.0 miles southwest of the Site.

As previously discussed, the proposed project involves a modification to the configuration of two existing parcels and existing land use and zoning designations, as well as physical improvements, including wetland and bioswale improvements and construction of a detention pond within the eastern and southern portions of Proposed Parcel 2, and expanded commercial activities, storage, and parking for the existing retail store on Proposed Parcel 2. While the proposed bioswale and wetland improvements and commercial expansion within the central and western portions of the Site would require construction near adjcaent residences, compliance with NCQUAMD's Rules and Regulations and maintaining all equipment in good working condition would lessen potential impacts to sensitive receptors located in the vicinity of the Site. A less than significant impact would occur.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less Than Significant Impact. There are no current or proposed uses on the Site that would result in other emissions, such as objectionable odors, that would impact a significant number of people. The existing McKinleyville Ace Hardware retail store would continue to operate on-site. During development of the proposed improvements, temporary objectionable odors, typical of construction sites and equipment use, may be generated during the construction phase. Given the distance to most sensitive receptors, it is unlikely that they would cause any

substantial impact. By complying with NCUAQMD's Rules and Regulations and maintaining all equipment in good working condition, a less than significant impact would occur.

MITIGATION MEASURES:

AQ-1. During construction and operation, the following dust control measures shall be implemented:

A. All exposed surfaces (e.g., parking areas, staging areas, soil piles, active graded areas, excavations, and unpaved access roads) shall be watered two times per day in areas of active construction.
B. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
C. All vehicle speeds on unpaved roads shall be limited to 15 mph, unless the unpaved road surface has been treated for dust suppression with water, rock, wood chip mulch, or other dust prevention measures.
D. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes. Clear signage shall be provided for construction workers at all access points.
E. All construction and operation equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications.

FINDINGS: The proposed project would have a **Less than Significant Impact with Mitigation Incorporated** on Air Quality.

IV. BIOLOGICAL RESOURCES. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

DISCUSSION

While the western portion of the Site is currently developed with the McKinleyville Ace Hardware retail store, with associated parking and storage, and an existing residence and

garage on APN: 510-081-003 (Parcel 3), the eastern portion of the Site comprises undeveloped pastureland. Surrounding uses include commercial and residential uses to the north, with storage units further to the north; low density residential uses to the east; a residential subdivision and open grassland to the south; and a mix of commercial uses, including a gas station, across Central Avenue with residential neighborhoods further to the west.

Sensitive Species

A Natural Resources Assessment (Biological Report) was prepared by SHN in August 2019 and a Botanical Survey (Survey) by Howman in March 2026 (Appendices F and M respectively). Per the Biological Report and survey, two seasonally appropriate surveys for botanical species with a moderate or higher potential for occurrence at the Site were performed. As noted, the project is located at an elevation of approximately 97 feet above mean sea level, within the Widow White Creek drainage system. Widow White Creek flows into Norton Creek, which connects to the Mad River, approximately 1.2 miles to the northwest. During the field surveys, the western portion of the Site was noted to be comprised of native and non-native forbs, grasses, and coniferous, with approximately 71 percent of the study area comprised of non-native plant species. Existing habitat quality within the study area was noted to be consistent with adjacent areas. As provided in the Biological Report, there is the potential for 65 special-status plant species to occur; however, 58 of the plant species are considered to have no or low potential to occur within the study area and 7 species have a moderate or higher potential to occur. No special-status plant species were observed within the study area during follow up field surveys. In addition, the Biological Report states that all locations with a shrub or tree canopy layer, in addition to tall grasses, may provide nesting habitat for a diverse array of migratory bird species. Additionally, one sensitive vegetation community was observed within the palustrine emergent wetland, which included the *Argentina egedii* Herbaceous Alliance. It is further noted that watercourses and their associated riparian zones likely serve as primary wildlife corridors due to their complex structure and provide cover and hiding places from predators. Wildlife may also use existing roads and trails that provide narrow openings in areas of tall grass or dense shrub layers. Based on the findings of the Biological Report and Survey, several recommendations are included in order to ensure no significant impacts to biological resources will occur, including but not limited to minimizing ground disturbance to the minimal extent necessary, project related noise, and timing of vegetation clearing, which have been incorporated in Mitigation Measure BIO-1, below.

Per review of the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB), the Site and surrounding area has the potential for western lily (*Lilium occidentale*), a special status plant species to be present within the project area (2021). In addition, the U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (iPaC) database indicates there is the potential for 10 endangered species and 17 migratory birds protected under the federal Migratory Bird Treaty Act (MBTA) to occur on the subject Site (n.d.). {Please note one reptile species [green sea turtle (*Chelonia mydas*) and one fish species [Tidewater goby (*Eucyclogobius* newberryi) were also included on the USFWS iPaC list; however, due to the distance to the coast and since there are no watercourses on-site, these two species do not have the potential to occur at the Site and are therefore not included below

in Table 8.} Furthermore, the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants lists 1 rare or endangered plant species (western lily) with the potential to occur within the Arcata North Quad, which includes the Site (2021). The candidate, sensitive, or special status species with the potential to occur at the Site are listed in Table 8, below.

Table 8. Species with the Potential to Occur at the Site and within the Arcata North Quad

Common Name	Scientific Name
Mammals	
Pacific Marten (coastal distinct population segment)	*Martes caurina*
Birds	
Allen's hummingbird	*Selasphorus sasin*
Bald Eagle	*Haliaeetus leucocephalus*
Black oystercatcher	*Haematopus bachmani*
Black turnstone	*Arenaria melanocephala*
California thrasher	*Toxostoma redivivum*
Clark's grebe	*Aechmophorus clarkii*
Great blue heron	*Ardea herodias*
Lesser yellowlegs	*Tringa flavipes*
Long-billed curlew	*Numenius americanus*
Marbled godwit	*Limosa fedoa*
Olive-sided flycatcher	*Contopus cooperi*
Red-throated loon	*Gavia stellata*
Rufous hummingbird	*Selasphorus rufus*
Semipalmated sandpiper	*Calidris pusilla*
Short-billed dowitcher	*Limnodromus griseus*
Whimbrel	*Numenius phaeopus*
Willet	*Tringa semipalmata*
Marbled murrelet	*Brachyramphus marmoratus*
Northern spotted owl	*Strix occidentalis caurina*
Western snowy plover	*Charadrius nivosus nivosus*
Yellow-billed cuckoo	*Coccyzus americanus*
Plants	
Beach layia	*Layia carnosa*
Menzie's wallflower	*Erysimum menziesii*
Western lily	*Lilium occidentale*

Source: USFWS, n.d.; CDFW, 2021; and CNPS, 2021.

Wetlands

The Site does not contain any streams; however, the western and central portions of the Site are known to contain one, two, and three-parameter wetlands, totaling 1.18 acres (Appendix E). A Wetland Delineation was prepared by Streamline Planning Consultants in September 2014

(Appendix D) for APNs 510-081-001 and -002 (McKinleyville Ace Hardware parcels) to determine the boundary of a wetland located near the existing barn within the southern portion of APN 510-081-001. As noted in 2014 Wetland Report, the site was evaluated using the three parameters of the U.S. Army Corps of Engineers (USACE) – hydrophytic vegetation, wetland hydrology, and hydric soils – and further notes the County deems areas meeting all three of the USACE's parameters as wetlands. Per the Report, the wetland was noted to be an "unevenly-shaped depressional area". Although a second wetland feature (linear ditch) was noted to extend northwest from the main wetland, this feature was not delineated since it was located within the northern parcel (APN 510-081-002, away from the southwestern corner of the property being evaluated for development potential and was over 50 feet from the proposed boundary of development Appendix E).

As described in the 2014 Wetland Report, concentrated animal traffic around the barn has led to depressed and compressed soils, which likely lead to water remaining around the barn. The wetland was noted to have "clearly formed as a result of historical human disturbance" and was not considered to provide significant animal habitat. Water is noted to drain much too quickly from the site to support amphibians, insects, or birds. However, the wetland is useful for capturing stormwater runoff from surrounding development, supports hydrophytic vegetation, and both the topsoil and plant system associated with the wetland can filter and treat pollutants. Although the specific size of the wetland is not detailed in the 2014 Wetland Report, it was concluded in the Report that there would be a 41.25-foot buffer between the western wetland boundary and development (edge of parking lot), which will ensure the wetland is "thoroughly protected from the impacts of development and exceed current county requirements for wetland protection. Furthermore, directing stormwater runoff from development into the wetland will increase the water charging of this wetland, accenting the established native wetland plants growing onsite, while treating runoff before it discharges from the parcel." (Streamline, 2014, p.4). As noted in the Report, County requirements (Humboldt County Zoning Regulations §314-61.1) at that time required a 25-foot buffer between intermittent streams and development within an Urban Development and Expansion Area, and noted that since the wetland is considered intermittent and is located within the Urban Development Area, that it would also be subject to the 25-foot buffer requirement (Streamline, 2014, p.4). However, the County's Streamside Management Areas and Wetlands Ordinance was updated in 2021 and the required setback for seasonal wetlands is 50 feet (HCC 61.1.7.6.6).

An additional Wetland Delineation was prepared by SHN in May 2020 (2020 Wetland Report; see Appendix E) to delineate potential wetlands and other waters of the United States and State, as defined by the USACE three-parameter methodology, to assist with future Site design and minimizing potential impacts on such features. As noted in the Wetland Delineation Report, the USACE method relies on a three-parameter approach, in which criteria for hydrophytic vegetation, hydric soils, and wetland hydrology must each be met (present at the point of field investigation) to conclude that an area qualifies as a wetland. However, the McKinleyville Community Plan (MCCP) requires only one of the three wetland parameters to be met to qualify as a wetland. One three-parameter area, covering approximately 0.30 acres, is located within a

geomorphic depression east of the old barn where it catches and retains stormwater, and is dominated by native and non-native herbaceous species. The area adjacent to the existing store heading to the north of the parcel has one to two parameters present and covers approximately 0.88 acres (SHN, 2020, p.10,15). The eastern half of the study area (1.55 acres) slopes gently upward to the east and is classified as upland with no wetland parameters present (SHN, 2020, p.10,15). Upon review, it was determined that the SHN 2020 Wetland Delineation omitted one-parameter wetlands immediately east of the retail store that were impacted by the installation of a gravel parking lot and storage. The actual total of One and Two-Parameter wetlands is 1.24 acres. Wetland totals are summarized in the table below.

Note: Taken from 2020 SHN Wetland Delineation (Appendix E) and 2026 Hohman Wetland Mitigation Plan (Appendix K).

Summary of Wetland Totals	
Three - Parameter	0.30 acres
One and Two – Parameter	1.24 acres

In addition, a Residential Upland Clearance Assessment was prepared by Streamline Planning in November 2015 (Appendix G) to determine the amount of upland (non-wetland) habitat on-site and to determine the feasibility of a lot line adjustment. Per the Assessment, the Site rises to the northeast and the entire elevated portion of the Site evaluated during the assessment (approximately 52,080 square feet or 1.2 acres) exhibited none of the three USACE wetland parameters. It is further noted that the evaluated area is approximately 120 feet from the delineated wetland to the southwest and would provide adequate buffer distance from the identified wetland.

Per Section 3422(13) of the MCCP, permittable development within wetland areas is very limited, but includes wetland restoration, in addition to other specified uses, including but not limited to fish and wildlife management, aquaculture, fencing, and wells in rural areas. In addition, wetlands shall also contain specified wetland buffer areas. As specified in Section 3422(16) of the MCCP, a wetland buffer is defined as the area around a wetland where restrictions on development are required to protect the wetland from significant impact. No specific wetland buffer distances are provided in the MCCP; however, the MCCP *Wetland Buffer Areas* states a Wetland Buffer Area shall be defined as the area around a wetland where restrictions on development are required to protect the wetland from significant impact as identified through the CEQA process. This Initial Study will rely on the wetland setbacks prescribed in Section 314-61.1 of the Humboldt County Zoning Regulations, known as the Streamside Management Areas and Wetlands Ordinance (SMAWO). Specifically, per Section 61.1.7.6.6 of the SMAWO, wetland setbacks are defined as 50 feet for seasonal wetlands and 150 feet from perennial wetlands, with the specified setbacks beginning at the edge of the delineated wetland. It is further noted that buffers may be reduced based on site-specific information and consultation with CDFW. No buffer is required for manmade wetlands, except wetlands created for mitigation purposes (HCC §61.1.7.6.6)

According to Section 3422(18) of the MCCP, any development proposed within the wetland

buffer is required to implement the following mitigation measures:

A. No more than 25% of the lot surface shall be made effectively impervious by development activities.
B. The release rate of storm runoff to adjacent natural wetlands, in any size storm, shall not exceed the natural rate of storm runoff for a 50 year storm of 10 minute duration.
C. Stormwater outfalls, culverts, gutters, and other similar facilities, shall be dissipated.
D. Septic systems or alternative waste disposal systems must meet standards of the Humboldt-Del Norte Health Department and the Regional Water Quality Control Board.
E. Areas disturbed during construction, grading, or related activities within 100 feet of the boundary of the wetland in areas outside of the Urban Development Area, and 50 feet of the boundary of the wetland in areas within the Urban Development Area, shall be restored to original contours and sufficiently and promptly replanted with vegetation naturally occurring in the immediate area.
F. Development and construction shall minimize cut and fill operations and erosion and sedimentation potentials through construction of temporary and permanent sediment basins, seeding or planting bare soil, diversion of run-off away from graded areas and areas heavily used during construction, and avoidance of grading in the buffer areas during the rainy season (November to April).
G. Further, per MCCP Section 3224(19), no land use or development shall be permitted within wetland buffer areas that degrade the wetland or detract from the natural resource value. However, it is important to note that MCCP Section 3224(12) does not require wetland and wetland buffer standards for "watercourses consisting entirely of a drainage ditch, or other man-made drainage device, construction or system", which would include the bioswale and retention basin improvements proposed under the project.

For the basis of this analysis and for consistency with the MCCP, a total of 1.54 acres of wetlands (one, two, and three-parameters) were identified and known to occur on-site (Appendices E and K). Furthermore, impacts to any identified on-site wetlands because of the project will require mitigation. Specifically, in accordance with Mitigation Measures BIO-2 and BIO-3 (further discussed below), the Applicant is prepared and must implement a Wetland Mitigation Plan (Appendix K), to recreate and relocate any impacted wetlands at a 1:1 ratio with respective 50-foot setback in accordance with the requirements of the SMAWO, replant all disturbed areas within 50 feet of mapped wetlands, and implement three years of monitoring.

Proposed Improvements

The proposed project involves a change in boundary lines and land use and zoning designations, as well wetland and bioswale improvements and construction of a detention pond within the eastern and southern portions of Proposed Parcel 2, and expanded commercial activities, storage, and parking for the existing retail store on Proposed Parcel 2. Under the project, total disturbance would entail 4.3 acres, of which 1.0 acres of identified wetlands would be impacted under the project.

Under the project, portions of the existing three-parameter wetland (0.17 acres) located north and east of the existing barn would be reconfigured. A separate stormwater

retention basin is proposed southeast of the reconfigured wetland. In addition, an approximately 0.33-acre elongated bioswale along the majority of Proposed Parcel 2's eastern boundary to contain runoff from Proposed Parcel 2 (western parcel) and prevent it from flowing onto the adjacent Proposed Parcel 1 (eastern parcel). A variable width vegetated buffer is proposed around the entire bioswale and most of the proposed reconfigured wetland. The surrounding area would be graded to provide positive draining towards the proposed reconfigured wetland.

Per the 2014 Wetland Report, while a 0.30-acre three-parameter intermittent wetland was identified on-site, the "wetland has clearly formed as a result of historical human disturbance" (p.3). The 2014 Wetland Report further notes the wetland serves as a "useful site to capture stormwater runoff from surrounding development" and states a larger buffer would not be useful for this site due to it lacking wildlife habitat. However, it is stated that protecting the wetland for stormwater retention and treatment is important (p.3). It is important to note that the influence of human activities in the formation of the wetlands is clear, the wetlands themselves were not created by humans and any wetlands created for purposes of mitigation do require a buffer. A variable width vegetated buffer is proposed around the entire bioswale and much of the proposed reconfigured wetland and would provide adequate protection of the wetland and bioswale for stormwater retention and treatment. Upon completion of the grading proposed just west of the, the slope will be vegetated, which will increase the buffer around the wetlands. Preliminary consultations with the California Department of Fish and Wildlife and Water Board in May and June of 2026 resulted in recommendations that a 50-foot minimum seasonal wetland buffer, consistent with the SMAWO, be applied to all retained and relocated wetlands as part of the mitigation plan. Additionally, all three-parameter wetlands that are permanently impacted should be mitigated at a 2:1 ratio. Also, any wetlands created for the purposes to receive stormwater must treat the stormwater prior to discharge into the wetlands.

Due to the potential for the above-listed species in Table 8 to be present on-site or within the Arcata North Quad, which contains the Site, and since the Biological Report performed by SHN in August 2019 only comprised the western portion of the Site, additional seasonally-appropriate biological and botanical surveys will be required prior to the start of potential future construction to determine the presence of any sensitive or protected species within the potential residential development area, where, if necessary, recommendations and protocol can be provided to ensure potential impacts are minimized. While tree removal may be necessary in the future to accommodate anticipated development, existing trees will be retained to the greatest extent feasible, as they may provide habitat for sensitive species.

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less Than Significant with Mitigation Incorporated. The Site is in a developed residential and commercial area and is surrounded by development on all sides. Although periodic grazing

occurs in the Site's pasture area, as described in the Wetland Delineation Report prepared by SHN in May 2020 (Appendix E; p.1), there is the potential for special status plants and wildlife species, particularly birds, to be located on-site, as indicated in Table 8. In addition to the land use and zoning designation changes and lot line adjustment proposed under the project, the project involves wetland and bioswale improvements, construction of a detention pond, and expansion of the commercial activities, storage, and parking associated with the existing McKinleyville Ace Hardware retail store. As described above, a Biological Report was prepared by SHN in August 2019 (Appendix F) for the western portion of the Site, in which seasonally appropriate field surveys were conducted. Per the Biological Report, no special-status plant species were observed, although one sensitive vegetation community was observed within the palustrine emergent wetland area. Additionally, the Biological Report concluded there was the potential for special status birds, including migratory birds, to utilize the Site. As such, to protect such resources, Mitigation Measure BIO-1 is required, which requires implementation of the recommendations contained in the Biological Report for any Site development, including but is not limited to minimizing ground disturbance to the minimal extent necessary, project related noise, and timing of vegetation clearing.

Since the Biological Report covered only the western portion of the Site, an additional Aquatic Resources Delineation Report was prepared by NAIAD in January 2026 (Appendix L) and additional Botanical Survey Report was conducted by Hohman in March 2026 (Appendix 2026). Neither the NAIAD nor Hohman reports identified sensitive species or resources within their study areas.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less Than Significant Impact. As described above, the Site does not contain any streams or riparian habitat. The site does not contain any sensitive natural communities identified in local or regional plans, policies nor any regulations by the CDFW or the USFWS. The Site does contain wetlands which are discussed further in section c) below.

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less Than Significant with Mitigation Incorporated. As described above, the western and central portions of the Site contain wetlands. As detailed in the Wetland Delineation Report prepared by SHN in May 2020 (Appendix E), one three-parameter area, covering approximately 0.30 acres, is located within a geomorphic depression east of the old barn The area adjacent to the existing McKinleyville Ace store, heading to the north of the parcel, has one to two parameters present and covers approximately 1.24 acres (Appendix E and Appendix K) for a total of 1.54 acres of on-site wetlands. SHN notes that past disturbance of the area, including agricultural use, residential development, motorcross track development, and adjacent

commercial development has impacted the integrity of the wetland parameters observed within this area and has significantly altered site hydrology. As a result, SHN considers whether this area should be identified as a wetland (SHN, 2020, p.10). However, for consistency with the MCCP, all impacted wetlands (one, two, and three-parameter) will be mitigated. One and two-parameter wetlands shall be mitigated at a 1:1 ratio and three-parameter wetlands shall be mitigated at a 2:1 ratio (see Mitigation Measures BIO-2 and BIO-3). The eastern half of the study area (1.55 acres) slopes gently upward to the east and is classified as upland with no wetland parameters present (SHN, 2020, p.10,15).

Under the project, modifications to the existing three-parameter wetland area will occur. As described above and shown on Appendix B, a portion of the existing three-parameter wetland located north and east of the existing barn would be relocated, with the remaining wetland area to be reconfigured. A separate stormwater retention basin is proposed southeast of the reconfigured wetland. In addition, an approximately 0.33-acre elongated bioswale along the majority of Proposed Parcel 2's eastern boundary to contain runoff from Proposed Parcel 2 and prevent it from flowing onto the adjacent Proposed Parcel 1. A variable width vegetated buffer is proposed around the entire bioswale and most of the proposed reconfigured wetland. The surrounding area would be graded to provide positive draining towards the proposed reconfigured wetland).

As described above, the MCCP and the SMAWO require buffers for wetlands including those created as mitigation. Mitigation Measure BIO-2 requires the Applicant update the Wetland Mitigation Plan (Appendix K) that identifies the amount and location of mitigation for associated impacts to wetlands identified on the subject Site. Additionally, any permanently impacted one or two-parameter wetland areas shall be recreated at a 1:1 ratio and three - parameter wetlands at a 2:1 ratio, all with a respective 50-foot setback.

During construction of the 0.33-acre bioswale along Parcel A's eastern boundary, it is anticipated that heavy equipment will be required. Under Mitigation Measure BIO-3, prior to and during these improvements, the on-site wetland areas would be required to be flagged for construction equipment to avoid these areas to the greatest extent feasible. Once associated improvements are complete, the Applicant would be required to implement the Wetland Mitigation Plan and shall replace and replant all area disturbed within 50 feet of mapped wetlands. A minimum of five years of monitoring shall be required, with annual monitoring reports submitted to the County, to ensure a minimum success rate of 85 percent. Should replanting be determined unsuccessful, replanting and monitoring shall reoccur, as previously described (Mitigation Measure BIO-3).

In order to minimize potential impacts, including runoff, to the on-site wetlands areas during the project improvements and potential future on-site development, the project contractor(s) would be required to implement standard Best Management Practices (BMPs) during project construction, to ensure compliance with the Clean Water Act (33 U.S.C. §1251 et seq. (1972)) and the Porter-Cologne Water Quality Control Act and as amended (California Water Code §13000 et seq.). Such BMPs may include the use of straw bales, fiber rolls, and/or silt

fencing structures to assure the minimization of erosion resulting from construction and to avoid runoff into sensitive habitat areas, limiting ground disturbance to the minimum necessary, and stabilizing disturbed soil areas as soon as feasible after construction is completed (Mitigation Measure Bio-4). In addition, per Mitigation Measures BIO-2 and BIO-3, the Applicant and/or project contractor(s) shall implement and adhere to the Wetland Mitigation Plan and grading and drainage plans detailed above, in order to further reduce potential impacts to existing wetland habitat.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less Than Significant with Mitigation Incorporated. The proposed project would not impact the movement of any native resident or migratory fish, as the Site does not contain any waterways that support fish. However, the Site is located between larger forested areas to the north, southwest, south, and east of the Site, and contains on-site wetlands, which may serve as native wildlife nursery sites. As noted under section a) above, there is limited potential for special status wildlife species to be located on-site, although several trees are located on-site, with the southern portion and along the eastern Site boundary, which may provide habitat for special status bird species. Additionally, the Biological Report states that all locations with a shrub or tree canopy layer, in addition to tall grasses, may provide nesting habitat for a diverse array of migratory bird species, and, as a result, the Site may serve as a native resident or migratory wildlife corridor between the area. Under the project, existing trees on-site will be preserved to the greatest extent feasible. Further, in accordance with Mitigation Measures BIO-1, all recommendations contained within the Biological Report prepared by SHN in August 2019 shall be followed such as conducting preconstruction surveys for nesting birds.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Less Than Significant Impact. The proposed project will not conflict with any local policies or ordinances protecting biological resources. The Humboldt County General Plan, including the McKinleyville Community Plan, contain goals, policies, and standards established for the protection of sensitive biological resources such as mitigation ratios for wetlands and the project must comply with those policies. The project will comply with the Streamside Management Area and Wetlands Ordinance by incorporating buffers to wetlands.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact. There are no adopted Habitat Conservation Plans, Natural Community Conservation Plans, or other local, regional, or state habitat conservation plans that cover the project Site. Therefore, no impact would occur.

MITIGATION MEASURES

BIO-1: Any development on-site shall implement the recommendations contained in the *Natural Resources Assessment,* prepared by SHN in August 2019, including:

A. If impacts to special-status resources cannot be avoided while still accomplishing project objectives, these impacts shall be mitigated at a ratio to be determined by consultation with the appropriate regulatory agency including but not limited to the Planning and Building Department and the California Department of Fish and Wildlife.
B. Where project construction activities occur within 100 feet to special-status resources, these resources shall be demarcated by high-visibility construction fencing during the project construction period in a manner sufficient to avoid unintentional impacts.
C. Project-related noise levels shall be minimized so that sound levels are below 50 decibels at 100 feet from the source.
D. Limit ground disturbance and vegetation clearing to the minimal extent necessary to accomplish project goals.
E. Project-related vegetation clearing shall occur outside the bird nesting season, which is February 15 through August 15. If project-related brush clearing or structural work on buildings within the vicinity of nesting bird habitat must occur during the breeding season, nesting bird surveys shall be performed within seven days of project activities in those locations by a qualified biologist to ensure that active nests are not destroyed. If more than seven days has passed between the nesting bird survey and commencement of vegetation removal, the survey must be redone.
F. Use native and locally sourced plant material for landscaping and revegetation.
G. Ensure that future development or new fencing does not prevent wildlife movement by maintaining sufficient movement corridors outside the project area.

BIO-2: The Wetland Mitigation and Monitoring Plan (Appendix K) shall be updated to include a 2:1 mitigation ratio for any permanently impacted three-parameter wetlands. All wetlands shall have a respective 50-foot setback. The associated plans shall identify the area, depth, and location of the proposed wetland and shall include cross sections, flow lines, and limits of work area. The update shall also include establishing a wetland reference site to serve as baseline conditions for hydrology, plant community composition, and invasive species cover. Wetland success criteria should be defined relative to this baseline. To expedite revegetation and meet performance criteria, consider collecting plant material (seed, rhizomes, cuttings) onsite and amplifying at a nursery rather than relying on salvage. The stress of uprooting, storing, and replanting established plants may result in poor vigor and low survivorship. Locally appropriate native wetland species can also be obtained directly from a nursery as container stock. The update to Appendix K shall also include any measures described in BIO-3 below. Additionally, a stormwater management plan shall be development that includes measures to treat the stormwater before it is discharged into any wetland. The stormwater management plan shall comply with all applicable LID standards including routine maintenance and replanting to maintain functionality. The mitigation plan shall include a diversity index to ensure the created wetland supports similar or greater diversity to the reference site. The updated mitigation plan

shall include measures that demonstrate successful creation of three-parameter wetlands such as conducting scheduled wetland delineations during the monitoring period.

BIO-3: During construction of the 0.33-acre bioswale along Proposed Parcel 2's eastern boundary, the on-site wetland areas shall be flagged for construction equipment to avoid these areas to the greatest extent feasible. Once construction is complete, the Applicant shall implement the Wetland Mitigation Plan and replace and replant all area disturbed within 50 feet of mapped wetlands. A minimum of five years of monitoring shall be required for all plantings, within annual monitoring reports submitted to the County, to ensure a minimum success rate of 85 percent. Invasive species cover shall not exceed 15%. The monitoring plan shall include invasive species management to ensure stability of native plantings. Should replanting be determined unsuccessful, replanting and monitoring shall reoccur, as described above.

BIO-4: To minimize potential impacts, including runoff, to the on-site wetlands areas during the project improvements and potential future on-site development, the project contractor(s) would be required to implement standard Best Management Practices (BMPs) during project construction, to ensure compliance with the Clean Water Act (33 U.S.C. Sec. 1251 et seq. (1972)) and the Porter-Cologne Water Quality Control Act and as amended (California Water Code Sec. 1300 et seq.). Such BMPs may include the use of straw bales, fiber rolls, and/or silt fencing structures to assure the minimization of erosion resulting from construction and to avoid runoff into sensitive habitat areas, limiting ground disturbance to the minimum necessary, and stabilizing disturbed soil areas as soon as feasible after construction is completed.

FINDINGS

The proposed project would have a **Less Than Significant Impact with Mitigation Incorporated** on Biological Resources.

V. CULTURAL RESOURCES. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change §15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☒	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

DISCUSSION

A Cultural Resources Investigation for Rezoning and Lot Line Adjustment at APN 510-081-001 and 510-081-002, 2725 Central Avenue, McKinleyville, Humboldt County California (Cultural Study) was prepared by William Rich, M.A., RPA, and Melinda Salisbury, B.A., with contributions by Historian Lynette Mullen, William Rich and Associates (WRA), Bayside, California, in May 2021. Please note a copy of the Cultural Study is not included with this Initial Study, due to the confidential nature of the report. Additionally, Parcel 3 (APN: 510-081-003), comprising an existing residence and detached garage, was not included in the assessment.

Per the Cultural Study, according to the Northwest Information Center (NWIC), the two properties have been included in three (3) prior cultural studies, which were completed in the 1970s and included large areas, with no discussions specific to the subject parcels. Seven additional studies have been conducted within 1/2-mile of the Site. While no archaeological resources have been documented within the study area or within 1/2-mile; however, four historic-period built-environment resources (buildings) are listed on the NWIC's directory, all located at least 0.24 miles from the Site.

It is noted in the Report that the property remained undeveloped until the mid-1940s, when a person by the name of Charles Sniggs purchased the property and constructed a residential and agricultural complex. A barn associated with this development remains on the southern parcel (APN 510-081-001); however, all other buildings and structures associated with the Sniggs development were removed during the construction of the McKinleyville Ace Hardware store in 2016. The barn was documented on the appropriate California Department of Parks and Recreation 523 series forms and was determined to not be a significant historical resource. The barn is noted to be "in very poor condition, in a continually deteriorating state, and does not appear to be associated with important historical events, the lives of particularly influential individuals, nor constructed with unique style of elements of design…and lacks integrity of setting, materials, workmanship, feeling, and association." WRA concludes the barn does not appear eligible for listing in the California Register of Historical Resources, since it does not meet the four eligibility requirements, including:

- The barn is not associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage (Criterion A);
- Charles Sniggs does not appear to have been locally or nationally significant figure in our past (Criterion B);
- The barn is a small common auxiliary structure and does not convey the distinctive characteristics of a type, period, region, or method of construction, and does not represent the work of a master (Criterion C); and
- The barn has not yielded and is unlikely to yield information important in prehistory or history (Criterion D).

No other pre-contact or historic-era artifacts, features, structures, buildings, or sites were identified on the subject parcels as a result of the Site investigation (WRA, 2021, p.2), and, as described above, due to the state of the existing historic-era barn and its lack of eligibility for inclusion on the California Register, WRA concludes no historical resources were identified within the limits of the subject parcels under CEQA and further archaeological study is not recommended. As ground disturbing activities are proposed under the project (associated with the proposed wetland and bioswale improvements, construction of the retention basin, and expansion of the existing commercial use) that have the potential to reveal artifacts, WRA provides protocol to follow in the event of inadvertent discovery of cultural resources, which will be included as a standard condition of approval for the project.

As detailed in the Cultural Study, if cultural resources are encountered during construction activities, all on-site work shall cease in the immediate area and within a 50-foot buffer of the discovery location. A qualified archaeologist shall be retained to evaluate and assess the significance of the discovery, and develop and implement an avoidance or mitigation plan, as appropriate. For discoveries known or likely to be associated with Native American heritage (prehistoric sites and select historic period sites), the Tribal Historic Preservation Officers (THPO) of the local Tribes shall be contacted immediately to evaluate the discovery and, in consultation with the project proponent, the County, and consulting archaeologist, develop a treatment plan in any instance where significant impacts cannot be avoided. Prehistoric materials which could be encountered include obsidian and chert debitage or formal tools, grinding implements, (e.g., pestles, handstones, bowl mortars, slabs), locally darkened midden, deposits of shell, faunal remains, and human burials. Historic archaeological discoveries may include nineteenth century building foundations, structural remains, or concentrations of artifacts made of glass, ceramics, metal or other materials found in buried pits, wells or privies.

On October 5, 2021, the County of Humboldt provided the local tribal representatives a copy of the Cultural Report for review and comment. Responses were received from the Blue Lake Rancheria and Wiyot Tribe on October 5 and 6, 2021, respectively. The Blue Lake Rancheria noted they were satisfied with the findings of the report, concurred with the recommendation of inclusion of the inadvertent discovery protocol, and declined the invitation to consult with the County pursuant to AB 52 and SB 18. The Wiyot Tribe also expressed concurrence with inclusion of the inadvertent discovery protocol. As of the date of this Initial Study, no additional responses or comments have been received. AB52 and SB 18 consultation notice was sent out

again in July 2025 and not tribes responded requesting consultation.

a) Cause a substantial adverse change in the significance of a historical resource pursuant to Sec. 15064.5?

Less Than Significant Impact. As detailed in the Cultural Study and as described above, one historic-era barn was found to be located on the southern project parcel (APN 510-081-001) and constructed in the mid-1940s. Per review by the Archeologist, the barn was found not to be a significant historic resource due to its condition and not being associated with important historical events, the lives of particularly influential individuals, nor constructed with unique style of elements of design; lacks integrity of setting, materials, workmanship, feeling, and association; and is not eligible for listing in the California Register of Historical Resources. No other pre-contact or historic-era artifacts, features, structures, buildings, or sites were identified on-site, and no further archaeological investigation is recommended by WRA.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Less Than Significant Impact. While no archaeological resources or human remains were discovered on-site, there is always the possibility of encountering such resources during ground disturbing activities. As described above, ground disturbing activities are proposed under the project and anticipated on-site in the future that have the potential to encounter such resources. As ground disturbing activities have the potential to reveal artifacts, archaeological resources, and/or human remains, a standard inadvertent discovery is included in conditions of approval.

c) Disturb any human remains, including those interred outside of formal cemeteries?

Less Than Significant Impact. While no archaeological resources or human remains were discovered on-site, there is always the possibility of encountering such resources during ground disturbing activities. As described above, ground disturbing activities are proposed under the project and anticipated on-site in the future that have the potential to encounter such resources. As ground disturbing activities have the potential to reveal artifacts, archaeological resources, and/or human remains, a standard inadvertent discovery is included in conditions of approval.

MITIGATION MEASURES

None required.

FINDINGS

The proposed project would have a **Less Than Significant Impact** on Cultural Resources.

VI. ENERGY. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

DISCUSSION

The site is served by Pacific Gas and Electric. The project would result in an incremental increase in the consumption of energy resources during the construction phase of the project (including site preparation, construction, paving, and architectural coatings) using construction equipment and tools on-site. All project construction equipment would be required to comply with the California Air Resources Control Board (CARB) emissions requirements for construction equipment, which includes measures to reduce fuel-consumption, such as imposing limits on idling and requiring of replacement of older engines.

All on-site development would be subject to the energy efficiency standards identified in Part 6 (California Energy Code) of Title 24 of the California Code of Regulations, which contains energy conservation standards applicable to residential and non-residential buildings throughout California. The Building Energy Efficiency Standards are designed to ensure new and existing buildings achieve energy efficiency by reducing wasteful, uneconomic, inefficient, or unnecessary consumption of energy and enhance outdoor and indoor environmental quality.

a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during project construction or operation?

Less Than Significant Impact. The proposed project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during project construction or operation. During construction of additional improvements such as the parking lot and storage areas, equipment and tools would be used as needed. Operations of the retail store after additional improvements are in place would be subject to energy efficiency standards of Title 24 of the California Code of Regulations.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Less Than Significant Impact. The project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. As noted above, the proposed project and any future development on-site would be subject to Part 6 (California Energy Code) of Title 24 of the California Code of Regulations, which contains energy conservation standards applicable to residential and non-residential buildings throughout California to ensure new and existing buildings achieve energy efficiency and preserve outdoor and indoor environmental quality. Since any on-site development would be required to be designed and developed in accordance with the requirements contained in the California Energy Code, a less than significant impact would occur.

MITIGATION MEASURES

No mitigation required.

FINDINGS

The proposed project would have a **Less Than Significant Impact** on Energy.

VII. GEOLOGY AND SOILS Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
v) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

DISCUSSION

Humboldt County is located within a seismically active region in which large earthquakes may be expected to occur during the economic lifespan, typically 50 years, of any development on the Site. No known earthquake faults are located underneath the Site, although the Mad River and Alquist Priolo Faults are located approximately 0.31 and 0.42 miles northwest of the Site, respectively. However, the Site is classified as "relatively stable" for seismic safety. The project Site is relatively flat in nature and is not within an area subject to liquefaction. Furthermore, no historic landslides have been mapped or recorded within the immediate vicinity, with the nearest historic landslide mapped approximately 0.8 miles east of the Site.

As described in the *Wetland Delineation* prepared by SHN Consulting Engineers & Geologists (SHN) in May 2020 (Appendix E) and confirmed on the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service's (NRCS) Web Soil Survey databased in April 2021, the soils underlying the Site include Map Unit #225 – Arcata and Candy Mountain soils, 0 to 2 percent slopes. The soils are rated as non-hydric and are well-drained, sandy loams that are not subject to frequent flooding or ponding and have a moderate available water capacity (approximately 8.9 inches). The depth to water table is over 80 inches (SHN, 2020, and USDA, 2020). In addition to the General Plan Amendment, Zone Reclassification, and Lot Line Adjustment proposed under the project, wetland and bioswale improvements, construction of a detention pond, and expansion of the commercial activities, storage, and parking (approximately 56 spaces) to the east of the existing McKinleyville Ace Hardware retail store are also proposed. A Special Permit is required for relocation of the existing bioswale and associated fill and wetland restoration on APNs: 510-081-001 and 510-081-002.

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

ii) Strong seismic ground shaking?

iii) Seismic-related ground failure, including liquefaction?

iv) Landslides?

Less Than Significant Impact. No known earthquake faults are located directly underneath the Site, although the A Mad River and Alquist Priolo Faults are located approximately 0.31 and 0.42 miles northwest of the Site, respectively, with the Alquist-Priolo Fault Hazard Zone extending to approximately 0.39 miles northwest the Site. Additionally, the Site is classified as "relatively stable" for seismic safety (Web GIS).

Although the project area is situated within a seismically active region where multiple seismic sources exist that can produce moderate to strong ground motions, the Site is not located within a mapped Alquist-Priolo special studies zone, nor are there any known mapped faults directly below or near the Site. As a result, the potential for surface rupture on the Site from an

active fault within the design life of the proposed project and potential future residential development is considered low. Development of any structures on the site will be subject to the uniform standards of the California Building Codes (CBC).

As shown on the County of Humboldt Web GIS, the Site and immediate vicinity is not within an area of potential liquefaction. Since the Site is not within an area of potential liquefaction and since the project and any future development would be subject to design and construction standards in accordance with the latest version of the CBC, the potential for seismic-related ground failure, including liquefaction, would be further minimized. A less than significant impact would occur.

Per the County of Humboldt Web GIS, the Site is classified as "relatively stable" for seismic safety and is relatively flat in nature. Additionally, no historic landslides have been mapped or recorded within the Site's boundaries or immediate area, with the nearest historic landslide mapped approximately 0.8 miles east of the Site. As such, the potential for landslides to occur at the Site is considered negligible. Design and construction of the project and any subsequent development would be subject to the rules and regulations contained in the latest version of the CBC, which would further reduce the potential for landslides at the Site. As a result, the proposed project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides, and a less than significant impact would occur.

b) Result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact. Substantial soil erosion or the loss of topsoil is anticipated, as the Site is relatively flat in nature. During construction of the proposed on-site improvements, the project contractor(s) would be required to implement standard Best Management Practices (BMPs), pursuant to the Clean Water Act and the Porter-Cologne Water Quality Control Act, to control runoff and ensure that associated grading and construction would not negatively impact water quality. A Stormwater Control Plan (SCP) detailing the proposed management of stormwater from the Site would also be required for the project and potential future construction, further ensuring surface or ground water quality is not jeopardized. Such BMPs may include straw bales, fiber rolls, and/or silt fencing structures to assure the minimization of erosion resulting from construction and to avoid runoff into sensitive habitat areas, limit ground disturbance to the minimum necessary, and stabilize disturbed soil areas as soon as feasible after construction is completed.

In addition, the Cities of Eureka, Arcata, Fortuna, and Trinidad, and portions of unincorporated Humboldt County (McKinleyville, the greater Eureka area, and Shelter Cove), have collaborated to publish the Humboldt Low Impact Development Stormwater Manual (Humboldt LID Stormwater Manual), dated June 30, 2016 which provides technical information, procedures, and guidance for complying with the State's LID design standards. Per the Humboldt LID Stormwater Manual, the proposed improvements included under the project would likely be subject to the requirements for Hydromodification Projects, which create or replace greater

than or equal to 1 acre of impervious surface and would require the preparation of a Stormwater Control Plan (SCP) to describe how the project will manage the property's stormwater and control run-off (see Hydrology and Water Quality section, below, for further discussion).

With implementation of appropriate BMPs and Humboldt LID Stormwater Manual requirements, the proposed project would not result in substantial soil erosion or the loss of topsoil and a less than significant impact would occur.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less Than Significant Impact. As previously discussed, the Site is classified as "relatively stable" and is generally flat in nature. Additionally, the Site is not located within a mapped Alquist-Priolo special studies zone; however, the Site is located within a seismically active region and any development at the Site would be likely to experience strong ground shaking during its economic lifespan. Furthermore, the Site is not within an area subject to liquefaction and the potential for landslides to occur at the Site is considered negligible. Since the project would be required to be designed in accordance with the latest version of the California Building Codes, potential geological risks would be minimized and a less than significant impact would occur.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Less Than Significant Impact. No known expansive soils are located at the Site. Expansive soils generally comprise cohesive, fine-grained clay soils and represent a significant structural hazard to buildings founded on them, especially where seasonal fluctuations in soil moisture occur at the foundation-bearing depth. The subsurface soils at the Site are loam, sandy loam, fine sandy loam, fine sand, and loamy fine sand, and do not contain clay, which can drastically expand and shrink in volume with moisture changes. In addition, a Plasticity Index of less than 15 represents a low potential for soil expansion. Per review of the USDA-NRCS's Web Soil Survey, the entirety of the Site is underlain by soils with a plasticity index of 6.0 (NRCS, 2019), indicating the Site soils have low potential to shrink and swell. A less than significant impact would occur.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact. The Site and surrounding area is located within the service boundaries of the McKinleyville Community Services District (MCSD). As such, existing development would continue to be served by MCSD for water and wastewater service and any future development would be anticipated to connect to and served by MCSD. As a result, since septic systems would not be required on-site, no impact would occur.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant Impact. Although the project would require ground-disturbing construction activities, including grading and excavation, there are no known paleontological resources or unique geologic features on the subject Site and ground disturbance has already occurred on a portion of the Site. Additionally, the Site is not listed within an area identified as containing paleontological resources nor is it located near any known paleontological resources.

MITIGATION MEASURES
No mitigation required.

FINDINGS
The proposed project would have a **Less Than Significant Impact** on Geology and Soils.

VIII. GREENHOUSE GAS EMISSIONS. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions (GHG), either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

DISCUSSION

The project site is located within the North Coast Air Basin (NCAB) and is subject to North Coast Unified Air Quality Management District (NCUAQMD) requirements. The NCUAQMD is responsible for monitoring and enforcing federal, State, and local air quality standards in the County of Humboldt.

The Global Warming Solutions Act of 2006, also known as Assembly Bill (AB) 32, is a State law that establishes a comprehensive program to reduce GHG emissions from all sources throughout the State. AB 32 requires the State to reduce its total GHG emissions to 1990 levels by 2020, a reduction of approximately 15 percent below emissions expected under a "business as usual" scenario, and to a level of 80 percent below 1990 levels by 2050. Pursuant to AB 32, the California Air Resources Board (CARB) must adopt regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. The following major GHGs and groups of GHGs being emitted into the atmosphere are included under AB 32: carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF6), and nitrogen trifluoride (NF3) (ARB, 2014). Assembly Bill (AB) 1803, which became law in 2006, made CARB responsible to prepare, adopt, and update California's GHG inventory. The 2020 GHG emissions limit statewide, equal to the 1990 level, is 431 million metric tonnes of carbon dioxide equivalent (MTCO2e) (CARB, 2019). Pursuant to Senate Bill (SB) 32 and Executive Order S-3-05, California has a reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050 (CARB, 2014).

CARB, in its *California Greenhouse Gas Emissions for 2000 to 2021* Report (2023), states that GHG emissions within the State of California have generally followed a declining trend since the peak in 2004. In 2021, statewide GHG emissions were 381.3 million metric tons of CO2 equivalent (MMTCO2e), 12.6 MMTCO2e higher than 2020 levels and 49.7 MMTCO2e below the 2020 statewide GHG limit of 431 MMTCO2e. The slight increase in emissions recorded between 2020 and 2021 is likely an anomaly related to the COVID-19 pandemic and associated economic recovery. Notably, State GHG emissions dropped below the 2020 GHG limit in 2014 and have

remained below since that time. Additionally, per capita GHG emissions in California have dropped from a 2001 peak of 13.8 metric tons per person to 9.7 metric tons per person in 2021, which equates to a 30 percent decrease (CARB-California, 2023). As shown in Table 9 below, the transportation sector remains the largest source of GHG emissions in the State, accounting for approximately 39 percent of the State's GHG emissions in 2021 (CARB-Current, 2023).

Table 9. California's GHG Emissions by Economic Sector in 2021

Economic Sector	Percentage of California's Total GHG Emissions (2020)
Transportation	39%
Industrial	22%
Electricity	16%
Agriculture & Forestry	8%
Residential	8%
Commercial	6%
Total	**100%**

Source: California Air Resources Board (CARB). 2023. Current California GHG Emission Inventory Data. 2000-2021 GHG Inventory (2023 Edition). Available at: https://ww2.arb.ca.gov/ghg-inventory-data.

As part of the Regional Climate Action Plan adopted by the Humboldt County Board of Supervisors on December 16, 2025, a greenhouse gas (GHG) emissions inventory was conducted. The 2022 GHG emissions inventory covers the relevant emissions sources within the boundary of Humboldt County, including all incorporated and unincorporated areas. The inventory thereby reflects emissions sectors resulting from Humboldt community activities over which the local governments (i.e., County and partnering jurisdictions) have jurisdictional control and influence. Sectors where the local government has limited influence are excluded from the 2022 GHG emissions inventory as the local governments do not have jurisdictional control to develop measures to impact associated emissions. In alignment with Community Protocol, the 2022 GHG emission inventory includes emissions from the five basic reporting activities that must be reported: residential and commercial energy usage, on-road transportation, off-road transportation, landfilled waste, and water and wastewater. Though the Community Protocol recognizes refrigerants as a source of GHG emissions, the protocol notes that obtaining accurate information on a community scale can be challenging and only recommends including refrigerant emissions if reliable data can be obtained. As representative refrigerant consumption information was not readily available during the development of this RCAP, refrigerant emissions are excluded from this inventory.

As part of the energy sector, electricity and natural gas consumption from industrial operations are included as most industrial facilities in the area are not subject to regulations under the State's Cap-and-Trade program which typically governs industrial emissions. Further, local jurisdictions are considered to have some influence over the energy use at industrial land uses through zoning and building codes and therefore are included in the inventory. Emissions from industrial point source discharge have been excluded due to lack of local jurisdictional control

over this emissions source and because industrial point sources are regulated by the state under the Cap-and-Trade program and by the local air district. Water sector emissions, arising from electricity use in water delivery and treatment, are accounted for under electricity sector emissions as the entirety of water supplied to Humboldt community members occurs within Humboldt geographic and jurisdictional boundaries.38 Emissions associated with agricultural land use practices (e.g., land management, livestock emissions) are excluded from the inventory because the County and local jurisdictional governments have limited control over these type of agricultural emissions. Further, the County has not yet completed a natural and working lands carbon sequestration analysis and the existing data available to quantify the region's carbon stock are too limited to accurately quantify the carbon sequestration benefit of the region's natural and working lands. For these reasons, GHG emission impacts and carbon sequestration of natural and working lands are not included in this inventory. Future inventories may include emissions and sink impacts from natural and working lands. Humboldt's total GHG emissions for 2022 were estimated to be 1,531,167 MT CO2e, as depicted in Figure 3. For more information on the data and methodologies used, refer to Appendix B. According to the results of the 2022 GHG inventory, the largest source of GHG emissions in Humboldt was from on-road transportation, which accounted for 73 percent of the inventoried emissions. The second largest source of GHG emissions was from natural gas usage in buildings, which accounted for 13 percent of total emissions. Natural gas is used to heat water, homes, and businesses and to power gas-powered appliances. Off-road equipment accounted for the third largest source of emissions, for a total of 8 percent of total emissions in Humbold.

The California Emissions Estimator Model (CalEEMod) was utilized to quantify potential criteria pollution and greenhouse gas (GHG) emissions associated with both construction and operation of the future residential development anticipated at the Site. The model quantifies direct emissions from construction and operational activities (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. Further, the model identifies mitigation measures to reduce criteria pollutants and GHG emissions along with calculating the benefits achieved from measures chosen by the user (CalEEMOD). The results of the CalEEMod analysis in their entirety are included in Appendix H.

In addition to the General Plan Amendment, Zone Reclassification, and Lot Line Adjustment proposed under the project, wetland and bioswale improvements and construction of a detention pond within the southern and eastern portions of Proposed Parcel 2, and expansion of the commercial activities, storage, and parking (approximately 56 spaces) to the east of the existing McKinleyville Ace Hardware retail store on proposed Parcel 2 are also proposed. A Special Permit is required for relocation of the existing bioswale and associated fill and wetland restoration on APNs: 510-081-001 and 510-081-002. Emissions in the vicinity of the Site would be anticipated to slightly increase during the construction phase of the project.

The construction phase of the project would only be temporary and for a short duration (approximately 4 months). According to the CalEEMod results for the project, as provided in

Table 10, below, construction of the proposed improvements would result in approximately 104.77 MTCO2e. The operational emission of CO2 equivalent gasses would be approximately 229.86 MTCO2e annually. The GHG emissions anticipated under the proposed improvements would equate to approximately 0.007 percent (construction) and 0.015 percent (operational) of the County's total GHG emissions relative to the 2022 GHG inventory in the Regional Climate Action Plan, and approximately 0.00003 percent (construction) and 0.00006 percent (operational) of California's total GHG emissions recorded in 2021.

Table 10. Anticipated Construction and Operational Greenhouse Gas Emissions

Emission Category	CO2e Emissions (Metric tons/year)
Construction	104.7725
Operational	229.8649
Area	0.0020
Energy	20.4839
Mobile	56.5366
Off-Road	85.6489
Waste	65.4174
Water	1.7961

Notes: CO2e= Carbon Dioxide Equivalents Emissions results were the same for both the unmitigated and mitigated scenarios. Construction analysis assumes an approximately 4-month construction period, beginning on April 1, 2025, and ending on August 1, 2025. Once construction activities are completed, only operational emissions would be anticipated at the Site. Source: CalEEMod Model Results, September 13, 2024. (Appendix H)

a) Generate greenhouse gas emissions (GHG), either directly or indirectly, that may have a significant impact on the environment?

b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

(a through b) Less Than Significant Impact. The proposed project and associated improvements would not have a significant impact on greenhouse gas (GHG) emissions. The proposed improvements do not involve any activities that would cause GHGs to vary substantially from current levels. The Regional Climate Action Plan establishes a GHGH significance threshold of 5.28 MTCO2e per full-time equivalent employee for new non-residential development. The proposal to reconfigure and relocate wetlands, add parking areas and add exterior storage will not add any additional employees. The footprint of the retail store and its operations are not proposed to change. The GHG emissions anticipated under the current project would primarily come from the construction phase and be temporary in nature and equate to approximately .007 percent of the County's total GHG emissions recorded in the 2022 inventory in the Regional Climate Action Plan and California's total GHG emissions recorded in 2021. Operational emissions will come from the continuation of an existing use and are part of baseline and not additive in nature.

MITIGATION MEASURES
No mitigation required.

FINDINGS
The proposed project would have a **Less Than Significant Impact** on Greenhouse Gas Emissions.

VIII. **HAZARDS AND HAZARDOUS MATERIALS**. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site which is included on a list of hazardous materials sites complied pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☒	☐
f) Impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

DISCUSSION

A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, state, or local agency, or has characteristics defined as hazardous by a federal, state, or local agency. Chemical and physical properties such as toxicity, ignitability, corrosiveness, and reactivity cause a substance to be considered hazardous. These properties are defined in the

California Code of Regulations (CCR), Title 22, §66261.20-66261.24. A "hazardous waste" includes any hazardous material that is discarded, abandoned, or will be recycled. Therefore, the criteria that render a material hazardous also cause a waste to be classified as hazardous (California Health and Safety Code, §25117).

The Site does not include any known hazardous waste sites, as mapped by the State Water Resources Control Board's (SWRCB) GeoTracker database (2024) or the California Department of Toxic Substances Control's (DTSC) EnviroStor database (2024). However, as provided on the SWRQCB's GeoTracker database, four (4) listed sites are located within one-half mile of the Site, as provided in Table 11, below.

Table 11. GeoTracker-Listed Hazardous Materials Sites within Close Proximity (0.5 miles) to Site

ID	Name & Case No.	Case Type	Location	Distance & Direction to Site	Cleanup Status
1	Dorothy A. Versteegthy A. Versteeg[T0602300367; RB Case #: 1THU482]	LUST Cleanup Site	2771 Central Avenue	Immediately N and W of Site	Completed Case Closed
2	Big Oil & Tire – Bigfoot Service Station [T0602300275; RB Case #: 1THU365]	LUST Cleanup Site	2801 Central Avenue	230 feet N of Site	Completed Case Closed
3	Big Oil & Tire – McKinleyville BP [T0602300261; RB Case #: 1THU341]	LUST Cleanup Site	2698 Central Avenue	Immediately W of Site (across Central Avenue)	Open Verification Monitoring
4	Hartman Investments [T00602393134; RB Case #: 1NHU176]	Cleanup Program Site	Murray Road	0.28 miles NW of Site	Completed Case Closed

LUST = Leaking Underground Storage Tank Source: SWRCB, 2024 and DTSC, 2024.

Existing and proposed expanded development on-site will continue to and would require the transport, use, storage, and disposal of small quantities of hazardous materials common for equipment maintenance and operation, such as gasoline, diesel fuel, hydraulic fluids, oils, and lubricants, and cleaning solvents and supplies, as well as hazardous materials common to the grading and construction process, associated with the proposed improvements and if and when future residential development occurs on-site. However, all hazardous materials would be

utilized and disposed of in accordance with all applicable federal and state regulations.

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

(a through b) Less Than Significant Impact. Existing development and proposed improvements on-site will continue to require the routine transport, use, and disposal of hazardous materials common to a commercial home and garden store and associated deliveries, such as paints, solvents, and materials utilized for vehicle maintenance (i.e., fuels, oils, and lubricants). The types and quantities of hazardous materials to be used are not expected to pose a significant risk to the public and/or environment and would be managed in accordance with federal, State, and local regulations. Since the transport, use, and storage of any hazardous materials at the site would be required to be conducted in accordance with all federal, State, and local regulations, a less than significant impact would occur.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less Than Significant Impact. McKinleyville High School is located approximately 0.26 miles west of the Site and is the school located nearest to the Site. In addition to the General Plan Amendment, Zone Reclassification, and Lot Line Adjustment proposed under the project, wetland and bioswale improvements and construction of a detention pond within the southern and eastern portions of proposed Parcel 2, and expansion of the commercial activities, storage, and parking (approximately 56 spaces) to the east of the existing McKinleyville Ace Hardware retail store on Proposed Parcel 2 are also proposed. All hazardous materials currently contained on-site is required to be stored, handled, and transported in accordance with federal, State, and local regulations. No emissions are anticipated through the typical use of these substances. Therefore, a less than significant impact would occur.

d) Be located on a site which is included on a list of hazardous materials sites complied pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact. While four listed sites are near to the Site, as shown in Table 11, the Site has not been identified on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. As such, the project would therefore not create a significant hazard to the public or environment. Since no hazardous waste or materials sites have been identified on the Site, no impact would occur.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

Less Than Significant Impact. The Site is located approximately 0.56 miles south of the California Redwood Coast – Humboldt County Airport. Per the County's Web GIS portal, the Site is located within the airport's Airport Land Use Compatibility Safety Zone 6 (Airport Traffic Pattern Zone). As provided in the *Humboldt County Airport Land Use Compatibility Plan* (ALUCP), dated April 2021 and adopted by the Airport Land Use Commission on April 13, 2021, Zone 6 has no limit on maximum residential density or lot coverage, but places a limit of 300 people per acre of nonresidential uses. Under the ALUCP, the existing use (McKinleyville Ace Hardware, a retail store) is listed as a "Compatible" use, meaning the use is acceptable without safety-related conditions, although it is noted that noise, airspace protect, and/or overflight limitations may apply. Most of the Site, except for a very small section of the northeastern most corner of the Site, is located outside of the Airport's 55 CNEL noise contour (Web GIS).

As previously discussed, the project involves a General Plan Amendment, Zone Reclassification, and Lot Line Adjustment to modify the Site's land use and zoning designations and boundary lines, in addition to the other physical improvements described above. The Site's primary zoning districts [Community Commercial (C-2) and Residential One-Family (R-1)], proposed to remain, although to be adjusted under the project, allow for a variety of uses, including principally permitting uses (included by not limited to retail stores and one-family dwellings, respectively), in addition to a variety of uses that may be permitted with a Use Permit. Since the project and potential future development would require consistency with both the Airport Land Use Compatibility Zone 6's and the R-1 Zoning District's allowable uses, established development and density requirements, and would be compatible with existing surrounding development, a less than significant impact would occur.

f) Impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact. The County of Humboldt Emergency Operations Plan, dated March 2015, provides a framework for the Humboldt Operational Area agencies (which includes the entirety of the County and its cities, towns, and special districts, in coordination with independent tribes) (County – Office, n.d.) to respond to any emergency requiring multi-agency participation and/or activation of the County Emergency Operations Center (EOC) (County – Emergency, n.d.). Since any development proposed after the current improvements would be required to be designed in accordance to State and local standards, including safety and emergency access requirements, there are no components of the project or potential future residential development that would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. A less than significant impact would occur.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Less Than Significant Impact. According to the Humboldt County Web GIS, the Site is within an areas mapped as having a moderate fire hazard severity rating. An approximately 7,434-acre fire, known as the Luffenholtz Fire, occurred in 1908, approximately 1.35 miles north of the Site; however, no known fires have been recorded or have occurred at the Site between 1900 and 2020, nor have any additional fires occurred within the vicinity of the Site after 1908. The Site is primarily vegetated with grass and contains several trees scattered throughout the Site.

The proposed project is required to meet State and local standards for defensible space and emergency access. By meeting current standards and design requirements, a less than significant impact would occur.

MITIGATION MEASURES
No mitigation required.

FINDINGS
The proposed project would have a **Less Than Significant Impact** on Hazards and Hazardous Materials.

X. HYDROLOGY AND WATER QUALITY. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) Result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
iv) Impede or redirect flood flows?	☐	☐	☒	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

DISCUSSION

The project Site is located approximately 0.8 miles east of the coastal zone boundary. The northern portion of the northernmost parcel (APN 510-081-013) of the Site is mapped to be within a 100-year flood zone (Web GIS). As discussed under Section IV (Biological Resources), above, the Site does not contain any streams; however, the western and central portions of the Site contain one, two, and three-parameter wetlands, totaling 1.54 acres (Appendices E and K). A *Wetland Delineation* was prepared by Streamline Planning Consultants in September 2014 (Appendix D) for APNs 510-081-001 and 501-081-002 (McKinleyville Ace Hardware parcels) to determine the boundary of a wetland located near the existing barn within the southern portion of APN 510-081-001. As noted in 2014 Wetland Report, the site was evaluated using the three parameters of the U.S. Army Corps of Engineers (USACE) – hydrophytic vegetation, wetland hydrology, and hydric soils – and further notes the County deems areas meeting all three of the USACE's parameters as wetlands. Per the Report, the wetland was noted to be an "unevenly-shaped depressional area". Although a second wetland feature (linear ditch) was noted to extend northwest from the main wetland, this feature was not delineated since it was located within the northern parcel (APN 510-081-002, away from the southwestern corner of the property being evaluated for development potential and was over 50 feet from the proposed boundary of development (Appendix D).

As described in the 2014 Wetland Report, concentrated animal traffic around the barn has led to depressed and compressed soils, which likely lead to water remaining around the barn. The wetland was noted to have "clearly formed as a result of historical human disturbance" and was not considered to provide significant animal habitat. Water is noted to drain much too quickly from the site to support amphibians, insects, or birds. However, the wetland is useful for capturing stormwater runoff from surrounding development, supports hydrophytic vegetation, and both the topsoil and plant system associated with the wetland can filter and treat pollutants (Streamline, 2014, p.3).

An additional Wetland Delineation was prepared by SHN in May 2020 (2020 Wetland Report; see Appendix E), in which it is noted that the Site contains one three-parameter area, covering approximately 0.30 acres, which is located within a geomorphic depression east of the old barn where it catches and retains stormwater, and is dominated by native and non-native herbaceous species (SHN, 2020, p.9). In addition, the area adjacent to the existing McKinleyville Ace store, heading to the north of the parcel, has one to two wetland parameters present and covers approximately 0.88 acres (SHN, 2020, p.10,15). The Wetland Mitigation Plan (Appendix K identified an additional .36 acres of one-parameter wetlands that were not accounting for in the SHN 2020 delineation. Therefore, there is a total of 1.54 acres of one, two, and three- parameter wetlands onsite.

While the eastern portion of the Site is predominately undeveloped and no development is proposed for this area currently under the current project. The Site, located within the service boundaries of the McKinleyville Community Services District (MCSD), is and will continue to be served by MCSD for community water and wastewater disposal service.

Urban run-off and other "non-point source" (NPS) discharges are regulated by the 1972 Federal Clean Water Act (CWA) through the National Pollutant Discharge Elimination System (NPDES) permit program. The NPDES Program is a federal program which has been delegated to the State of California for implementation through the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCB) across the State (SWRCB – NPDES, 2020). During construction of the project's proposed improvements contractor(s) would be required to implement standard Best Management Practices (BMPs), pursuant to the Clean Water Act and the Porter-Cologne Water Quality Control Act, to control runoff and ensure that associated grading and construction would not negatively impact water quality. A Stormwater Control Plan (SCP) detailing the proposed management of stormwater from the Site would also be required for the project and potential future construction, further ensuring surface or ground water quality is not jeopardized. Such BMPs may include straw bales, fiber rolls, and/or silt fencing structures to assure the minimization of erosion resulting from construction and to avoid runoff into sensitive habitat areas, limit ground disturbance to the minimum necessary, and stabilize disturbed soil areas as soon as feasible after construction is completed.

Additionally, the Cities of Eureka, Arcata, Fortuna, and Trinidad, and portions of unincorporated Humboldt County (McKinleyville, the greater Eureka area, and Shelter Cove), have developed the Humboldt Low Impact Development Stormwater Manual (Humboldt LID Stormwater Manual), dated June 30, 2016, which provides procedures, and guidance for complying with the State's LID design standards. A Preliminary Retention and Detention Pond Sizing report (Sizing Report) was prepared by SHN in November 2018 (Appendix I) to determine the volume of storage capacity required to meet post development drainage requirements for the Site. As stated in the Sizing Report, expansion of the existing retail store is proposed to include paving approximately 53,250 square feet of parking lot and gravel surface of approximately 38,770 square feet, in addition to constructing up of up to three new buildings totaling 11,730 square feet, including a greenhouse within the southern portion of the Site, a lumber rack structure, and an optional future lumber rack (See Concept Plan Appendix N). The proposed on-site development is classified as a hydromodification project under the Humboldt County LID Manual, creating more than 1 acre of impervious surface area. In addition, the McKinleyville Community Plan (MCCP) requires that "Development shall only be allowed in such a manner that downstream peak flows will not be increased". Per the Humboldt LID Stormwater Manual, the proposed improvements included under the project and the future development on-site is and would be subject to the requirements for Hydromodification Projects, which create or replace greater than or equal to 1 acre of impervious surface and would require the preparation of a Stormwater Control Plan (SCP) to describe how the project will manage the property's stormwater and control run-off.

Under the Sizing Report, the preliminary retention basin capacity was sized to retain excess runoff from the 85th percentile rain event, to satisfy the LID manual requirement, and detain runoff from the 100-year storm so that it does not exceed the pre-project 2-year storm runoff rates, to satisfy the requirements of the MMCP. It was determined the amount of excess runoff from the 85th percentile 24-hour storm that must be retained is 17,964 gallons or approximately 2,400 cubic feet, and the volume to be detained to mitigate the runoff flows was

determined to be 8,130 cubic feet, for a combined required retention basin volume of 10,530 cubic feet (SHN, 2018, pp.3-4).

In total, the area to be disturbed under the proposed improvements will comprise approximately 1.91 acres. Earthwork is anticipated to comprise approximately 930 CY of cut and 290 CY of fill. Please note the actual amount of earth moved will vary, depending on compaction, consolidation, stripping requirements, and the contractor's method of operation. However, the total amount of earth moved will not exceed the disturbed area described.

Additionally, the Application, in coordination with an adjacent property owner to the south (APN: 510-071-002), will replace an existing damaged culvert located under Martin Road that is meant to convey stormwater between the northern and southern sides of Martin Road.

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less Than Significant Impact. The proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water. The Site will continue to be served by the MCSD for water and wastewater service, which is required to operate in compliance with all water quality standards and waste discharge requirements. Additionally, during construction of the proposed project improvements, the project contractor(s) would be required to implement standard Best Management Practices (BMPs), pursuant to the Clean Water Act and the Porter-Cologne Water Quality Control Act, to control runoff and ensure that associated grading and construction would not negatively impact water quality. A Stormwater Control Plan (SCP) detailing the proposed management of stormwater from the Site would also be required for the project, further ensuring surface or ground water quality is not jeopardized. A less than significant impact would occur.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Less Than Significant Impact. The proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge. As noted above, the Site is served by the MCSD for potable water service. As provided in the McKinleyville Community Services District Municipal Service Review (MSR), adopted January 2009, the MCSD serves approximately 14,000 people within its service boundaries, providing water service to 6,300 connections and wastewater service to 5,700 connections. MCSD purchases potable water from the Humboldt Bay Municipal Water District (HBMWD), which treats water from the Mad River (LAFCo, 2009) and therefore does not currently utilize groundwater. MCSD's current system is adequate to serve current demand, with capacity for extra connections. The existing system is designed to serve 10,000 homes and only currently serves 6,300 connections (5,900 of which are residential connections) (LAFCo, 2009).

Although the proposed improvements would increase the impervious surface area on the Site, due to the existing wetlands to remain and wetland mitigation area within the central portion of the Site, a large amount of pervious surface would remain and, as a result, water would continue to infiltrate the ground and aid in groundwater recharge. A less than significant impact would occur.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i) Result in substantial erosion or siltation on- or off-site?

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

iv) Impede or redirect flood flows?

Less Than Significant Impact. The proposed project does not anticipate resulting in substantial erosion or siltation on or off site, substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site, create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems, or provide substantial additional sources of polluted runoff. Within the vicinity of the Site, stormwater drainage follows a natural drainage pattern. As previously discussed under Section IV, Biological Resources, under the project, modifications to the existing three-parameter wetland area will occur. As previously described and shown on Appendix B, a portion of the existing three-parameter wetland located north and east of the existing barn would be filled, with the remaining wetland area to be reconfigured. A separate stormwater retention basin is proposed southeast of the reconfigured wetland. In addition, an approximately 0.33-acre elongated bioswale along the majority of Proposed Parcel 2's eastern boundary to contain runoff from proposed Parcel 2 (western parcel) and prevent it from flowing onto the adjacent Proposed Parcel 1. A variable width vegetated buffer is proposed around the entire bioswale and most of the proposed reconfigured wetland. The surrounding area would be graded to provide positive draining towards the proposed reconfigured wetland. Mitigation Measure BIO-2 requires the Applicant revised a Wetland Mitigation Plan (Appendix K) that identifies the amount and location of mitigation for associated impacts to any wetlands identified on the subject Site. In accordance with the MCCP, any impacted portions of identified on-site wetland areas shall be recreated at a 1:1 ratio with respective 50-foot setback. Three-parameter wetlands shall be mitigated at a 2:1 ratio.

During construction of the bioswale along Proposed Parcel 2's eastern boundary, it is anticipated that heavy equipment will be required. Under Mitigation Measure BIO-3, prior to and during these improvements, the on-site wetland areas would be required to be flagged for construction equipment to avoid these areas to the greatest extent feasible. Once associated improvements

are complete, the Applicant would be required to implement the Wetland Mitigation Plan and shall replace and replant all area disturbed within 50 feet of mapped wetlands. A minimum of five years of monitoring shall be required, with annual monitoring reports submitted to the County, to ensure a minimum success rate of 85 percent. Should replanting be determined unsuccessful, replanting and monitoring shall reoccur, as previously described (see Mitigation Measure BIO-3).

As discussed under Section VII (Geology and Soils) above, the proposed project improvements would require grading and excavation activities to prepare the Site. During proposed construction, the project contractor(s) would be required to implement standard Best Management Practices (BMPs), pursuant to the Clean Water Act and the Porter-Cologne Water Quality Control Act, to control runoff and ensure that associated grading and construction would not negatively impact water quality. A Stormwater Control Plan (SCP) detailing the proposed management of stormwater from the Site would also be required for the project improvements, further ensuring surface or ground water quality is not jeopardized. Such BMPs may include straw bales, fiber rolls, and/or silt fencing structures to assure the minimization of erosion resulting from construction and to avoid runoff into sensitive habitat areas, limit ground disturbance to the minimum necessary, and stabilize disturbed soil areas as soon as feasible after construction is completed. Compliance with the Humboldt LID Stormwater Manual would also be required, which would require the preparation of a Stormwater Control Plan (SCP) to describe how the project will manage the property's stormwater and control run-off.

Although the project would expand the existing commercial use on-site and incorporates bioswale and wetland improvements, as well as construction of a detention pond within the southern portion of Proposed Parcel 2, the eastern portion of the Site will remain undeveloped at this time and, as a result, stormwater would continue to infiltrate the ground.

The northernmost portion of the Site is located within a 100-year flood zone, as mapped by the Federal Emergency Management Agency (FEMA), as shown on FEMA Flood Insurance Rate Map (FIRM) Panel No. 06023C0680G, effective June 21, 2017. However, since most of the Site is not located within a FEMA flood zone or a floodway and the topography of the Site and vicinity is relatively flat in nature (Web GIS), the proposed project would not impede or redirect flood flows. A less than significant impact would occur.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Less Than Significant Impact. The Site is located approximately 0.8 miles east of the coastal zone boundary. As shown on the Humboldt County Web GIS portal, the Site is not located within a flood zone or a tsunami evacuation area. Although the Site is located within a seismically active region, the Site is not located near any large water bodies and any subsequent development on-site would therefore not be subject to seiches. As a result, the potential for inundation at the Site is considered low and a less than significant impact would occur.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less Than Significant Impact. The project would continue to utilize MCSD's community water system, whose supplies are derived from the Mad River (LAFCo, 2009); therefore, the project a would not decrease groundwater supplies. The project would also not interfere substantially with groundwater recharge as a large amount of pervious surface would remain (due to the existing wetlands to remain and wetland mitigation area within the central portion of the Site) and, as a result, water would continue to infiltrate the ground and aid in groundwater recharge. In addition, the project would be subject to and required to comply with the Statewide CGP and Humboldt LID Stormwater Manual, which would minimize the potential for stormwater runoff impacts. Compliance with these regulations would facilitate the implementation of water quality control efforts at both the local and State levels. Therefore, the proposed project is not anticipated to conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. A less than significant impact would occur.

MITIGATION MEASURES
No mitigation required.

FINDINGS
The proposed project would have a **Less Than Significant Impact** on Hydrology and Water Quality.

XI. LAND USE AND PLANNING. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☒	☐
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

DISCUSSION

The three properties are currently designated and zoned for commercial and residential use), with the following respective land use and zoning designations under the McKinleyville Community Plan of the Humboldt County General Plan and Humboldt County Zoning Regulations:

Existing Land Use Designations

- Commercial Services (CS, AP) with Airport Land Use Compatibility Zone Overlay
- Residential Low Density (1-7 units/acre) with Airport Land Use Compatibility Zone Overlay (RL1-7, AP)

Existing Zoning Designations

- Community Commercial with Airport Safety Review, Noise Impact, and Streamside Management Areas and Wetlands Combining Zones (C-2-AP-N-WR)
- Residential One-Family with Airport Safety Review Combining Zone (R-1-AP)
- Residential One-Family with Airport Safety Review and Streamside Management Areas and Wetlands Combining Zone (R-1-AP-WR)

Under the proposed project, the area currently designated and zoned as Commercial Services (CS) and Community Commercial (C-2) with respective combining zones on Parcels 1 and 2 would shift 190 feet to the east, with an additional area in the southeastern corner to contain the stormwater retention basin and wetland and bioswale improvements with variable width vegetated buffer proposed along the eastern edge of the new parcel boundary. In addition, the current boundary line dividing the two properties, which currently runs east to west (see Figure 2), would be relocated to instead run north to south, as shown in Figure 3. Per Figure 3, the parcel line dividing the two properties has been configured to contain the proposed stormwater retention basin and bioswale and wetland area with a variable width vegetated buffer, in addition to the existing three-parameter wetland, on proposed Parcel 2. After the proposed lot line adjustment, proposed Parcel 1 would comprise 2.63 acres and proposed Parcel 2 would comprise 4.54 acres (see Figure 3). Proposed Parcel 2 would be exclusively commercially zoned and designated and would comprise the existing McKinleyville Ace

Hardware retail store, while Proposed Parcel 1 would be entirely zoned and designated for future residential use. Regarding Parcel 3, no changes to the parcel's existing land use and zoning designations (CS, AP and C-2-AP-N-WR, respectively) are proposed under the project.

a) Physically divide an established community?

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

(a through b) Less Than Significant Impact. The proposed project would not physically divide an established community or conflict with any land use plan, policy, or regulation. Minor changes to the Site's current land use and zoning designations are proposed under the project for consistency with existing on-site development. In addition, the proposed improvements (including wetland, bioswale, retention basin, and commercial-related improvements) would not divide an established community and would be consistent with land use plans, policies, and regulations. A less than significant impact would occur.

MITIGATION MEASURES
No mitigation required.

FINDINGS
The proposed project would have a **Less Than Significant Impact** on Land Use and Planning.

XII. MINERAL RESOURCES. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

DISCUSSION

The Site is not located in an area of known rock, aggregate, sand, or other mineral resource deposits of local, regional, or State residents. There are no known mineral resources of significance on the Site that would be made unavailable by the proposed project and potential future residential development. Furthermore, the parcel is not utilized for Surface Mining and Reclamation Act (SMARA) activities, nor are there any active mineral extraction operations in the vicinity of the Site. The nearest SMARA parcel to the Site is located approximately 2.66 miles southwest of the Site in Arcata (Web GIS, n.d.).

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

(a through b) No Impact. The project area does not contain mineral resources that are of value locally, to the region, or to residents. The project area is not identified as a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. Therefore, the proposed project and potential future residential development would not interfere with materials extraction or otherwise cause a short-term or long-term decrease in the availability of mineral resources. No impact would occur.

MITIGATION MEASURES

No mitigation required.

FINDINGS

The proposed project would have **No Impact** on Mineral Resources.

XIII. NOISE. Would the project result in:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐

DISCUSSION

As previously discussed, the proposed project involves a change in boundary lines and land use and zoning designations, as well wetland and bioswale improvements and construction of a detention pond within the southern and eastern portions of Proposed Parcel 2, and expanded commercial activities, storage, and parking for the existing retail store on Proposed Parcel. The project's construction phase and once potential future development occurs on-site, increased noise levels at the Site would be anticipated, as construction would require the use of heavy machinery for Site preparation and ground-disturbing activities, including but not limited to excavating the wetland, bioswale, detention pond, and building foundations, grading, and trenching to extend utilities to the anticipated structures. However, once construction is completed, it is anticipated that the project would not result in a substantial permanent increase in noise at the Site. Currently, the main source of noise at the Site is existing vehicular traffic along adjacent streets, including Central Avenue and Murray and Martin Road, as well as occasional noise from airplanes traveling to and from the nearby California Redwood Coast-Humboldt County Airport, located approximately 0.56 miles north of the Site. Traffic noise volume depends primarily on traffic speed, volume, and vehicle type. The main motor vehicle noise source is tire noise, which increases with speed.

The McKinleyville Community Plan, adopted December 10, 2012, and amended October 23, 2017 (Resolution 17-96) under the Humboldt County General Plan Update process, contains an entire section with goals, policies, standards, and implementation measures pertaining to noise and maintaining "McKinleyville's low exposure levels to noise." As required under the California

Noise Insulation Standards (Title 24, CBC), noise levels within habitable rooms shall be limited to a maximum of 45 CNEL. Additionally, new residences proposed within an airport 60 dB CNEL contour requires an acoustical analysis showing the structure has been designed to limited intruding noise to allowable levels. Although the Site is located approximately 0.56 miles south of the California Redwood Coast-Humboldt County Airport, within Airport Land Use Compatibility Safety Zone 6, it is not located within the Airport's 60 dB CNEL noise contour (Web GIS) and would therefore not require an acoustical analysis. Table 6 (Land Use/Noise Compatibility Standards) of Section 3240 (Noise) of the McKinleyville Community Plan describes the compatibility of various land uses based on exterior noise levels and includes maximum allowable interior noise exposure for different use types.

As provided in the McKinleyville Community Plan's Table 6 the existing commercial use is limited to a maximum interior noise exposure of 50 Ldn, and is considered "Clearly Acceptable" in areas with maximum exterior noise levels of less than 60 Ldn; "Normally Acceptable" in areas with maximum exterior noise levels between 60 and 70 Ldn; "Normally Unacceptable" in areas with maximum exterior noise levels between 70 and 75 Ldn; and "Clearly Unacceptable" in areas with exterior noise levels exceeding 75 Ldn. Ldn is a measure for Day-Night Average Sound Level expressed as a single number measure of cumulative community noise over a 24-hour period. Since most of the Site is located outside of the Airport's noise contours, except for a very small portion of the northeastern most corner of the Site, the Site is an acceptable location for the existing commercial.

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less Than Significant Impact. The proposed project on the Site would not be expected to generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Site. Construction activities and associated construction equipment would cause temporary increases in noise; however, these impacts would only be associated with site preparation and construction and would cease once the construction phase is over. In addition, these activities would generally only occur during daylight hours. Once the project is implemented which consist of wetland and drainage improvements and parking areas and storage structures, the ongoing operation is expected to generate noise in excess of what is common for retail uses and would not be anticipated to significantly increase noise at the Site or within the vicinity. A less than significant impact would occur.

b) Generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact. There are no proposed or potential future uses on-site that would result in excessive ground borne vibration or ground borne noise levels. As noted above, physical improvements are proposed under the project. Required excavation and site preparation activities would require the use of heavy equipment, which may cause temporary ground borne vibration and ground borne noise. However, these impacts are associated with construction,

limited to daylight hours, and would be temporary in nature. A less than significant impact would occur.

c) For a project located within the vicinity of private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Less Than Significant Impact. The Site is located approximately 0.56 miles south of the California Redwood Coast-Humboldt County Airport. Although the Site is located within the Airport's Land Use Compatibility Safety Zone 6, only a very small portion of the northeastern most corner of the Site within proposed Parcel 1 is within one of the Airport's established noise contours (Web GIS). The proposed project is outside this noise contour. Implementation of the project and the continued operation of the existing retail use is not expected to expose people residing or working in the project area to excessive noise levels.

MITIGATION MEASURES
No mitigation required.

FINDINGS
The proposed project would have a **Less Than Significant Impact** on Noise.

XIV. POPULATION AND HOUSING. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and/or businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐

DISCUSSION

As noted in the McKinleyville Community Plan, McKinleyville is the most populated unincorporated area in the County and is one of the fasted growing communities in the County. It is located approximately five miles north of Humboldt Bay and encompasses approximately 14 square miles. Approximately 48 percent of McKinleyville's housing units are served with community water and wastewater services, with the remaining 52 percent suburban to rural in character with limited service availability and infrastructure.

In the 2020 census, the population of McKinleyville was 16,262 with 6,670 households and average household size of 2.56 persons. In 2010, McKinleyville had a total population of 15,177 persons, with 6,283 total households and an average household size of 2.4 persons. In 2000, McKinleyville had a population of 13,599 residents, with 5,277 total households and an average household size of 2.58 persons (U.S. Census Bureau).

Under the proposed lot line adjustment, proposed Parcel 1 (eastern parcel) would comprise 2.63 acres and proposed Parcel 2 (western parcel) would comprise 4.54 acres (see Figure 3). Proposed Parcel 1 would be entirely zoned and designated for future residential use, while Proposed Parcel 2 would be exclusively commercially zoned and designated and would comprise the existing McKinleyville Ace Hardware retail store. The zone and land use designation for Parcel 3 would not change. The changes sought by the Applicant will increase the amount of land onsite planned and zoned for commercial use from 1.84 to 4.79 acres and decrease the amount of residentially planned and zoned land from 5.58 acres to 2.63 acres (see Tables 2 and 3 respectively). Based on the information provided in the County of Humboldt's 2019 Housing Element of the Humboldt County General Plan, the County has a projected housing need of 1,413 housing units for the unincorporated areas of the County from 2019 to 2027 (Table 8-5 Housing Element).

Additionally, the Housing Element determined there is approximately 14,723 acres of

residentially zoned land available within the County's unincorporated areas, which have the potential to result in approximately 5,898 total housing units. Of this total area, 953 acres is zoned RL and has the potential for 3,232 housing units (Housing Element Table 8-6).

As previously discussed, the proposed project would decrease the amount of residentially planned and zoned land (RL-1) within the County by approximately 2.95 acres (or approximately 0.35 percent). When compared to the current amount of land designated and zoned for residential uses (5.58 acres), which could accommodate 42 dwelling units (at the maximum density of 7 dwelling units per acre), this equates to a reduction in approximately 23 potential residential units. However, based on the information in Tables 8-5 and 8-6 in the Housing Element, the County has and would continue to have sufficient residential land inventory to accommodate the County's projected future housing need of 1,413 residential units, with a surplus of approximately 4,462 total units after the proposed project. Furthermore, it is notable that the project site contains site constraints in the form of wetlands which would be contained in proposed Parcel 2, which is proposed for commercial uses.

a) Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and/or businesses) or indirectly (e.g., through extension of roads or other infrastructure)?

Less Than Significant Impact. In addition to the proposed wetland and bioswale improvements and detention pond, the proposed project also involves a General Llan Amendment and Zone Reclassification, as well as a Lot Line Adjustment, in order to adjust the current configuration of the Site's current land use and zoning designations and parcel lines, and does not involve the development of any new homes or the extension of infrastructure at this time, nor the demolition of any existing structures on-site. Community water and sewer service provided by the McKinleyville Community Services District (MCSD) would continue to serve the Site.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact The Site is currently developed with the McKinleyville Ace Hardware retail store (western portion of Site) and an existing single-family residence and detached garaged within Parcel 3, which would remain on-site under the project. The project and potential future development on-site would not displace any existing people or housing, as there are no existing housing units at the Site. No impact would occur.

MITIGATION MEASURES

No mitigation required.

FINDINGS

The proposed project would have a **Less Than Significant Impact** on Population and Housing.

XV. PUBLIC SERVICES. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Fire protection?	☐	☐	☒	☐
b) Police protection?	☐	☐	☒	☐
c) Schools?	☐	☐	☒	☐
d) Parks?	☐	☐	☒	☐
e) Other public facilities?	☐	☐	☒	☐

DISCUSSION

The proposed project involves a General plan Amendment and Zone Reclassification, as well as a Lot Line Adjustment, to adjust the current configuration of the Site's current land use and zoning designations and parcel lines, in addition to proposed wetland and bioswale improvements and development of a retention basin.

The proposed project would decrease the amount of residentially planned and zoned land (RL-1) on-site by approximately 2.95 acres from 5.58 acres to 2.63 acres. There are no elements of the project or potential future development at the Site that would impact the ability of the area's service providers to provide public services to its residents and no residential development is currently proposed at this time.

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

a) Fire protection?
b) Police protection?
c) Schools?
d) Parks?
e) Other public facilities?

Less Than Significant Impact. The Site is mapped within a Moderate Fire Hazard Severity Zone.

The Site is located within the State Responsibility Area (SRA) for fire protection services and is served by both the California Department of Forestry and Fire Protection (CAL FIRE) and the Arcata Fire Protection District (Arcata FPD) (Web GIS).

As provided in the Humboldt Bay Regional Fire Services Municipal Service Review (Fire Service MSR), adopted on September 20, 2017, by the Humboldt Local Agency Formation Commission (LAFCo), the Arcata FPD provides a full range of fire protection services, including fire suppression, rescue, basic life support, and fire prevention services. The Arcata FPD serves a total population of 37,000 residents within the City of Arcata and surrounding unincorporated areas, including McKinleyville, Jacoby Creek, and Manila, which encompasses 62 square miles. Staffing includes 62 staff members (25 paid and 37 volunteer) and includes three engine companies. At all times, there are 7 on-duty personnel as well as a Battalion Chief. The Arcata FPD responded to 2,930 calls in 2016, most of which were medical-related (49 percent), with approximately 5 percent of the calls fire-related. (LAFCo, 2017). The nearest fire station, the Arcata FPD's McKinleyville station, is located approximately 0.7 miles south of the Site, at 2149 Central Avenue.

Police protection services within the unincorporated areas of Humboldt County, including McKinleyville, are provided by the Humboldt County Sheriff's Office (Sheriff's Office). The Sheriff's Office includes the main station and three substations, one of which is located in McKinleyville and comprises the North Area Command. The McKinleyville station is located approximately 0.7 miles south of the Site, at 1608 Pickett Road.

The McKinleyville Union School District includes three schools: Dow's Prairie Elementary School, Morris Elementary School, and McKinleyville Middle School. McKinleyville's high school, McKinleyville High School, is part of the Northern Humboldt Union High School District. The proposed project which consists of wetland relocation and mitigation, stormwater management, and construction of parking and storage areas is not anticipated to result in an increase in enrollment in local schools.

The McKinleyville Community Services District (MCSD) maintains several facilities, parks, and trails within the community, including:

- Facilities:
    - Azalea Hall, McKinleyville Activity Center, McKinleyville Teen and Community Center, McKinleyville Library, and Law Enforcement Facility
- Parks:
    - Hiller Park, Hiller Sports Complex, Pierson Park, and Larissa Park
- Trails:
    - Hiller Park Loop Trails, Mid Town Trail, and School Road Trail (MCSD, 2009-2020).

It is not anticipated that implementation of the project will require new parks or alternations to existing parks. A less than significant impact would occur.

There are no elements of the proposed project that would significantly impact other public

facilities, such as regional hospitals or libraries, since a significant population increase is not anticipated. Additionally, there are no components of the project that would increase population to the extent that new or physically altered public facilities would be required. A less than significant impact would occur.

MITIGATION MEASURES
No mitigation required.

FINDINGS
The proposed project would have a **Less Than Significant Impact** on Public Services.

XVI. RECREATION. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

DISCUSSION

As discussed under Section XV (Public Services), the McKinleyville Community Services District (MCSD) maintains several facilities, parks, and trails within the community, including:

- Facilities:
    - Azalea Hall, McKinleyville Activity Center, McKinleyville Teen and Community Center, McKinleyville Library, and Law Enforcement Facility
- Parks:
    - Hiller Park, Hiller Sports Complex, Pierson Park, and Larissa Park
- Trails:
    - Hiller Park Loop Trails, Mid Town Trail, and School Road Trail.

The Site is located near several parks and recreational facilities, including but not limited to:

- Beau Pre Golf Course, located approximately 0.15 miles north of the Site;
- Pierson Park, located approximately 0.67 miles south of the Site;
- Azalea Hall, located approximately 0.67 miles south of the Site;
- McKinleyville Activity Center/McKinleyville Teen and Community Center, located approximately
- 0.77 miles south of the Site;
- Hiller Park, located approximately 1.07 miles southwest of the Site;
- Clam Beach County Park, located approximately 2.76 miles northwest of the Site;
- Mad River County Park, located approximately 1.40 miles southwest of the Site;
- Hammond Coastal Trail, located approximately 2.41 miles southwest of the Site;
- Azalea State Reserve, located approximately 2.59 miles southeast of the Site;
- Little River State Beach, located approximately 4.20 miles northwest of the Site;
- Moonstone County Beach Park, located approximate 5.09 miles northwest of the Site.

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

(a through b) Less Than Significant Impact. In addition to a General Plan Amendment and Zone Reclassification, as well as a Lot Line Adjustment to adjust the current configuration of the Site's current land use and zoning designations and parcel lines, the project also entails wetland and bioswale improvements and development of a retention basin.

The proposed project will not increase the use of community parks and recreational facilities within the area nor causes substantial physical deterioration of parks or facilities. The project does not include recreational facilities nor require construction or expansion of recreational facilities. A less than significant impact would occur.

MITIGATION MEASURES
No mitigation required.

FINDINGS
The proposed project would have a **Less Than Significant Impact** on Recreation.

XVII. TRANSPORTATION. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
d) Result in inadequate emergency access?	☐	☐	☒	☐

DISCUSSION

Roads within the County, including the unincorporated community of McKinleyville, are maintained by the Humboldt County Public Works Department. Chapter 4 (Public Services and Services) of the McKinleyville Community Plan discusses existing conditions and goals and policies pertaining to circulation and alternative roadway designs. As noted in the McKinleyville Community Plan, 63 road segments within McKinleyville were evaluated in 1993 and were found to be performing at Level of Service (LOS) A and were predicted to remain at LOS A through 2013 under planned build-out. Level of Service is used to rank traffic operation on various types of facilities based on traffic volumes and roadway capacity using a series of letter designations ranging from A to F. Generally, LOS A represents free flow conditions and LOS F represents forced flow or breakdown conditions. Per Policy C-P5 (Level of Service Criteria) of Chapter 7 (Circulation Element) of the Humboldt County General Plan, the County is required to maintain LOS C operation on all roadway segments, except for Highway 101, where LOS D is considered acceptable (2017).

Currently, McKinleyville has designated “Class II” bike lanes (signed and striped adjacent to a vehicular traveled way) only along Central Avenue between School Road and Railroad Drive, along School Road between Central Avenue and Bugenig Road (east-bound only), and along McKinleyville Avenue between Hiller and Murray Roads. Except for that portion of the Hammond Trail through Hiller Park, no “Class I” (minimum 12-foot-wide trails, physically separated from vehicular roadways) have been developed. Similarly, no formal “Class III” bike routes (signed, unstriped) have been designated (County, 2017).

Additionally, promoting bicycle and pedestrian access through the community is a major focus of the McKinleyville Community Plan. Policies have been developed to assure that facilities are

designed and developed to encourage efficient cycling and walking opportunities throughout the community.

The Site is located on the east side of Central Avenue, a main thoroughfare through the community of McKinleyville. Currently, the Site is fenced and is accessed via an existing gate along the property's western boundary, off Central Avenue. Under the project, Site access will be reconfigured. Specifically, a new 20-foot-wide public street ("Ace Avenue") is proposed along the southern portion of the Site, off Central Avenue, which will be developed in accordance with Humboldt County Department of Public Works requirements. The ingress and egress location for the existing retail store will be reconfigured to take access from Ace Avenue, rather than Central Avenue (Appendix N), and would be both paved and gated.

Additionally, APN: 510-081-002 contains an existing 20-foot-wide easement for road purposes from the northeastern corner of the property through the eastern portion of the property identified as APN: 510-081-009, located north of the Site. to Murray Road. An existing garage is located within the easement.

An encroachment permit from the County Public Works Department would be required for any improvements or work within the County right-of-way.

Under CEQA, lead agencies must determine whether a proposed project has the potential to cause significant environmental impacts. This determination must be based, to the extent possible, on factual data and scientific methods of analysis. The project's effect on transportation is one of the areas that must be analyzed. Jurisdictions have typically used vehicle Level of Service (LOS) as the primary measure of a project's transportation impacts. The County has separate LOS standards in the Circulation Element of the General Plan which may be used to determine operational impacts created by development projects. These operational analyses are not subject to CEQA compliance.

In September 2013, legislature passed, and Governor Jerry Brown signed into law SB 743, initiating a process intended to fundamentally change transportation impact analysis under CEQA. One major change resulting from the statute is the elimination of automobile delay or other similar measures of traffic congestion as a basis for determining significant impacts. According to the legislative intent contained in SB 743, the changes to current practice are intended to "more appropriately balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions."

In December 2018, the California Governor's Office of Planning and Research, now the Office of Land Use and Climate Innovation (LCI), published the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (referred to herein as the Technical Advisory), which provides guidelines on the implementation of SB 743. The Technical Advisory's guidelines state that VMT must be the metric used to determine significant transportation impacts. This requirement was applied statewide effective July 1, 2020. Prior to the adoption of this policy, the Humboldt

County Planning & Building Department (Department) was reviewing project transportation impacts for VMT on a case-by-case basis.

a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Less Than Significant Impact. Central Avenue serves as a main thoroughfare through the community and provides access to the central business district, and the other streets surrounding and adjacent to the Site are mainly used by the residential areas in the vicinity of the Site. The proposed improvements are not expected to significantly impact the capacity of the street system, level of service standards established by the County, or the overall effectiveness of the circulation system. Additionally, the proposed project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Under the project, construction workers would be required at the Site. It is expected that construction of the proposed project and associated improvements would result in a slight increase in traffic to and from the Site, as construction workers arrive and leave the Site at the beginning and end of the day, in addition to minor interruption of traffic on adjacent streets, when heavy equipment necessary for construction is brought to and removed from the Site. The workers would no longer be required at the Site once construction is complete. Once operational, a significant increase in traffic trips is not anticipated under the project improvements, since the existing retail store is currently in operation and aerial imagery indicates the retail store has an existing storage and staging area to the east of the store, where the improvements are proposed. A less than significant impact would occur.

b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Less Than Significant Impact. The proposed project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b), which states:

> "(1) Land Use Projects. Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be considered to have a less than significant transportation impact, and
>
> (2) Transportation Projects. Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, a lead agency may tier from that analysis as provided in Section 15152."

On October 21, 2025 Humboldt County adopted its local Vehicle Miles Traveled (VMT) Threshold Policy. VMT metrics are used to measure the number of vehicle miles traveled in a specific region over a specific period. The County has determined that use of the following metrics is in line with the Technical Advisory and are appropriate for evaluating transportation impacts of land use projects in Unincorporated Humboldt County.

The total VMT is metric is the total miles traveled by vehicles in a region or project area over a specific period. It should be noted that this metric is not used by the County to establish thresholds and is not used in project VMT analysis. The Average VMT per Resident (HBX) metric is the average VMT per capita for residents associated to a project. This proposed project does not include residential development. The average VMT per Employee (HBW) metric is the average VMT per capita for employees associated to a project or a specific region and capture commute trip only.

If the project site is in an area where VMT is equal or above 15% less than the countywide averages, then the proposed project is considered to have less than significant impact. Per the analysis is Appendix O, both HBW and HBX or less than 85% of the countywide average and therefore does not meet the threshold for significance.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less Than Significant Impact. The project is not anticipated to substantially increase hazards due to design features or incompatible uses. Proposed improvements including a parking lot will result in more efficient internal circulation of the site and are required to comply with all standards, including, but not limited to, encroachment, roadway width, and turning radii. As such, the project will not create a significant impact.

d) Result in inadequate emergency access?

Less Than Significant Impact. The proposed project would not result in inadequate emergency access on the existing road system. The project, including reconfigured access and new public road, and future anticipated residential development, including the secondary access, would be required to meet pertinent design criteria to provide adequate emergency access in accordance with all design standards and requirements.

MITIGATION MEASURES

No mitigation required.

FINDINGS

The proposed project would have a **Less Than Significant Impact** on Transportation and Traffic.

XVIII. TRIBAL CULTURAL RESOURCES. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code §21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code §5020.1(k)?	☐	☐	☒	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code §5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code §5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☒	☐

DISCUSSION

As previously discussed under Section V (Cultural Resources), above, a Cultural Resources Investigation for Rezoning and Lot Line Adjustment at APN 510-081-001 and 510-081-002, 2725 Central Avenue, McKinleyville, Humboldt County California (Cultural Report) was prepared by William Rich, M.A., RPA, and Melinda Salisbury, B.A., with contributions by Historian Lynette Mullen, William Rich and Associates (WRA), Bayside, California, in May 2021. A copy of the Cultural Study is not included with this Initial Study, due to the confidential nature of the report. Additionally, Parcel 3 (APN: 510-081-003), comprising an existing residence and detached garage, was not included in the assessment, but no development is proposed for Parcel 3.

As noted in the Cultural Report, ethnographic research indicates the project area lies within the traditional territory of the Patawat division of the Wiyot Tribe, who in the 1850s claimed the areas around Humboldt Bay, north to Little River. The closest known ethnographic sites to the Site are located approximately one mile to the west, along the coastline, and two miles to the south, along the banks of the lower Mad River. Descendants of the Wiyot who lived in the area are now members of the Blue Lake Rancheria, the Wiyot Tribe, the Bear River Band of the Rohnerville Rancheria, and other communities. During preparation of the Cultural Report, WRA contacted the Tribal Historic Preservation Officers (THPOs) of these three tribal entities and provided information about the proposed project and archaeological field investigation. Representatives from the Blue Lake Rancheria and the Wiyot Tribe responded and requested to be informed of the investigation findings, but where not aware of any known cultural resources on the property. As of the date of the Cultural Report, no additional correspondence or responses were received (WRA, 2021).

Per the Cultural Study, one historic structure, a barn), is located within the southern portion of a Site. The Cultural Report notes the barn does not appear eligible for listing in the California Register of Historical Resources, since it does not meet the four eligibility requirements and is in poor condition, and concludes it is not a historical resource under CEQA. No other pre-contact or historic-era artifacts, features, structures, buildings, or sites were identified on the subject parcels resulting from the Site investigation (WRA, 2021). Further archaeological study is not recommended. The project proposal includes excavation and site clearance activities. As ground disturbing activities have the potential to reveal artifacts, the Cultural Report provides protocol to follow in the event of inadvertent discovery of cultural resources, which is a standard condition of approval for the Special Permit associated with the project.

As detailed in the Cultural Report, if cultural resources are encountered during construction activities, all on-site work shall cease in the immediate area and within a 50-foot buffer of the discovery location. A qualified archaeologist shall be retained to evaluate and assess the significance of the discovery, and develop and implement an avoidance or mitigation plan, as appropriate. For discoveries known or likely to be associated with Native American heritage such as prehistoric sites and select historic period sites, the Tribal Historic Preservation Officers (THPO) of the local Tribes shall be contacted immediately to evaluate the discovery and, in consultation with the project proponent, the County, and consulting archaeologist, develop a treatment plan in any instance where significant impacts cannot be avoided. Prehistoric materials which could be encountered include obsidian and chert debitage or formal tools, grinding implements, (e.g., pestles, hand stones, bowl mortars, slabs), locally darkened midden, deposits of shell, faunal remains, and human burials. Historic archaeological discoveries may include nineteenth century building foundations, structural remains, or concentrations of artifacts made of glass, ceramics, metal or other materials found in buried pits, wells or privies.

On October 5, 2021, the County of Humboldt provided the local tribal representatives a copy of the Cultural Report for review and comment. Responses were received from the Blue Lake Rancheria and Wiyot Tribe on October 5 and 6, 2021, respectively. The Blue Lake Rancheria noted they were satisfied with the findings of the report, concurred with the recommendation

of inclusion of the inadvertent discovery protocol, and declined the invitation to consult with the County pursuant to AB 52 and SB 18. The Wiyot Tribe also expressed concurrence with inclusion of the inadvertent discovery protocol. As of the date of this Initial Study, no additional responses or comments have been received. An additional invitation for consultation under AB52 and SB 18 was sent to local tribes in July 2025. There were no responses requesting consultation.

a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code §21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code §5020.1(k)?

ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code §5024.1?

Less Than Significant Impact. As described above, one historic structure, a barn, is located within the southern portion of a Site. The Cultural Report concludes the barn does not appear eligible for listing in the California Register of Historical Resources, since it does not meet the four eligibility requirements and is in poor condition. The report also concludes it is not a historical resource under CEQA.

No other pre-contact or historic-era artifacts, features, structures, buildings, or sites were identified on the subject parcels resulting from the investigation. Further archaeological study is not recommended. Because ground disturbance is part of the proposed project, the standard condition of approval for inadvertent discovery protocol will be included with the Special Permit.

MITIGATION MEASURES

No mitigation required.

FINDINGS

The proposed project would have a **Less Than Significant Impact** on Tribal Cultural Resources.

XIX. UTILITIES AND SERVICE SYSTEMS. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☒	☐
c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, State, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

DISCUSSION

Existing development within the western portion of the Site includes the McKinleyville Ace Hardware retail store and an existing residence with detached garage. The Site is served by existing utilities such as water and wastewater from MCSD and power from Pacific Gas and Electric (PGE). There is existing curb, gutter, sidewalk, and storm drainage improvements along the Site's frontage along Central Avenue. Storm drainage in the vicinity of the Site follows a natural drainage pattern. Solid waste service at the Site is provided by Humboldt Sanitation, which serves the areas of McKinleyville, Trinidad, Westhaven, Big Lagoon, and Orick.

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications

facilities, the construction or relocation of which could cause significant environmental effects?

Less Than Significant Impact. As discussed above, the Site contains exiting development and is currently served by existing utilities. No new water or wastewater, electric, natural gas, or telecommunications facilities would have to be built. The wetland restoration, mitigation, and relocation and construction of a retention pond and bioswale will improve existing onsite drainage conditions. Since all impacted one and two-parameter wetlands will be mitigated at a 1:1 ration and all three-parameter wetlands will be mitigated at a 2:1 ratio and 50-foot vegetative buffers will be maintained, there will be less than significant impacts.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?

Less Than Significant Impact. As noted above, existing development is served by MCSD for water service. As provided in the McKinleyville Community Services District Municipal Service Review (MSR), adopted January 2009, the MCSD serves approximately 14,000 people within its service boundaries, providing water service to 6,300 connections and wastewater service to 5,700 connections. MCSD purchases potable water from the Humboldt Bay Municipal Water District (HBMWD), which treats water from the Mad River. MCSD's water is diverted from a HBMWD facility on Essex Hill under the Mad River to the North Bank Pump Station at North Bank and Azalea Roads. From there the water is pumped to MCSD's six storage tanks and gravity fed throughout the distribution system to customers and fire hydrants. The HBMWD has stated there is ample water supply to meet the future needs of their customers (LAFCo, 2009).

c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Less Than Significant Impact. As provided in the McKinleyville Community Services District Municipal Service Review (MSR), adopted January 2009, MCSD's wastewater system serves a total of 5,700 customers and consists of a collection system, a wastewater management facility, and a discharge system. The collection system consists of four sewer lift stations and 48 miles of sewer mains that collect wastewater from customers. The sewer mains converge at the Fischer Road Pump Station where raw sewage is pumped to the wastewater management facility, located at Hiller Park. The pump station has a capacity of 2,100 gallons per minute. The wastewater management facility includes two primary oxidation ponds, two secondary oxidation ponds, two treatment wetlands, a chlorine disinfection facility, and an effluent pumping station, and spans a total of 34 acres. The ponds have twelve 5-horsepower aerators to provide additional oxygen in the warmer months. The current flows range between 0.95 MGD (during dry weather) and 1.1 MGD (during wet weather). The system's treatment capacity is 1.61 MGD. The hydraulic capacity of the disinfection facilities is 3.3 MGD. The system discharges effluent into the Mad River during the wet months and applies treated wastewater for agricultural irrigation at the Fischer Irrigation Site and Hiller Park during the dry months.

Per the MSR, MCSD's wastewater system is currently operating at approximately 76 percent of its designed capacity and can provide service to approximately 1,500 additional connections. The proposed project would not require any new connections.

d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Less Than Significant Impact. Humboldt Sanitation serves the areas of McKinleyville, Trinidad, Westhaven, Big Lagoon, and Orick, and would continue to provide service to the Site for existing development. Waste collected by Humboldt Sanitation is transported to its McKinleyville Transfer Station, which is then transferred to the Dry Creek Landfill, located in Eagle Point in Jackson County, Oregon (HWMA, 2019), which has sufficient permitted capacity to accommodate the anticipated solid waste disposal needs associated with the potential future subsequent development. A significant amount of solid waste is not anticipated under the proposed project.

e) Comply with federal, State, and local management and reduction statutes and regulations related to solid waste?

Less Than Significant Impact. Any solid waste generated under the project would be disposed of in accordance with all federal, State, and local statutes and regulations related to solid waste. Additionally, solid waste disposal would follow the requirements of Humboldt Sanitation, which must comply with federal, State, and local statutes and regulations related to the collection of solid waste. The project would comply with all State and local waste diversion requirements. As such, the proposed would not negatively impact the provision of solid waste services or impair the attainment of solid waste reduction goals.

MITIGATION MEASURES
No mitigation required.

FINDINGS
The proposed project would a **Less Than Significant Impact** on Utilities and Service Systems.

XX. WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☒	☐
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage challenges?	☐	☐	☒	☐

DISCUSSION

As discussed under Section XV, Public Services, above, f the Site is within mapped Moderate Fire Hazard Severity Zone. The Site is located within the State Responsibility Area (SRA) for fire protection services but is served by both the California Department of Forestry and Fire Protection (CAL FIRE) and the Arcata Fire Protection District (Arcata FPD) (Web GIS). The nearest fire station, the Arcata FPD's McKinleyville station, is located approximately 0.7 miles south of the Site, at 2149 Central Avenue.

The proposed project involves a change in boundary lines and land use and zoning designations, as well wetland and bioswale improvements, construction of a retention basin within the southern and eastern portions of Proposed Parcel 2, and expanded commercial activities, storage, and parking for the existing retail store on Proposed Parcel 2.

a) Impair an adopted emergency response plan or emergency evacuation plan?
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage challenges?

(a through d) Less Than Significant Impact. Although the Site is located within the SRA, the proposed project is not located in or near lands classified as very high hazard severity zones. The Site would continue to be served by both CAL FIRE and the Arcata FPD, both of which have adequate personnel and equipment to serve the proposed project and the continued operations of the retail store. The County of Humboldt has published an Emergency Operations Plan (2015) that is unlikely to be impaired by the project. Any installation or maintenance of associated infrastructure would not exacerbate fire risk or result in temporary or ongoing impacts to the environment. The proposed structures are ancillary to the existing retail store and subject to California Building Codes including setbacks and design. The proposed project which is primarily a rezone, boundary adjustment and wetland mitigation would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, because of runoff, post-fire slope instability, or drainage challenges. A less than significant impact would occur.

MITIGATION MEASURES
No mitigation required.

FINDINGS
The proposed project would have a **Less Than Significant Impact** on Wildfire.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE.	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects).	☐	☒	☐	☐
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

DISCUSSION

The proposed project involves a General Plan Amendment, Zone Reclassification, and Lot Line Adjustment of APNs 510-081-002 and 510-081-001 located at 2707 and 2725 Central Avenue in McKinleyville, to adjust the boundaries of the current land use and zoning designations and lot lines for consistency with existing development and current use of the properties. Currently, APNs 510-081-002 and 510-081-001 comprise the existing McKinleyville Ace Hardware retail store within their western portions, with undeveloped land in the eastern portions of the properties. APN 510-081-003) comprises an existing residence with detached garage.

Additionally, the proposed project includes wetland and bioswale improvements and construction of a retention basin within the southern and eastern portions of proposed Parcel 2 and expanded commercial activities, storage, and parking for the existing retail store on proposed Parcel 2.

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less Than Significant with Mitigation Incorporated. The area in the vicinity around the proposed project site is both residential and commercial in nature, with commercial and residential uses to the north and storage units further to the north; low density residential uses to the east; a residential subdivision and open grassland to the south; and a mix of commercial uses, including a gas station, across Central Avenue with residential neighborhoods further to the west.

While the Site does not contain any streams, the western and central portions of the Site contain one, two, and three-parameter wetlands, totaling 1.54 acres (Appendices E and K). In accordance with the requirements of the McKinleyville Community Plan and consultation with state agencies. impacts to any onsite wetlands will be mitigated at a 1:1 ratio for one-parameter wetlands and a 2:1 ration for three-parameter wetlands. Under the project, a portion of the existing three-parameter wetland located north and east of the existing barn would be filled, with the remaining wetland area to be reconfigured. A separate stormwater retention basin is proposed southeast of the reconfigured wetland. In addition, an approximately 0.33-acre elongated bioswale along the majority of proposed Parcel 2's eastern boundary to contain runoff from proposed Parcel 2 (western parcel) and prevent it from flowing onto the adjacent proposed Parcel 1. A vegetated buffer is proposed around the entire bioswale and most of the proposed reconfigured wetland. The surrounding area would be graded to provide positive draining towards the proposed reconfigured wetland. A fifty foot buffer to retained and created wetlands will be maintained.

In order to minimize potential impacts, including runoff, to wetlands areas during construction, the project contractor(s) would be required to implement standard Best Management Practices (BMPs) during project construction, to ensure compliance with the Clean Water Act (33 U.S.C. Sec. 1251 et seq. (1972)) and the Porter-Cologne Water Quality Control Act and as amended (California Water Code Sec. 13000 et seq.). Such BMPs may include the use of straw bales, fiber rolls, and/or silt fencing structures to assure the minimization of erosion resulting from construction and to avoid runoff into sensitive habitat areas, limiting ground disturbance to the minimum necessary, and stabilizing disturbed soil areas as soon as feasible after construction is completed.

Additionally, as detailed under Section IV, Biological Resources, there is the potential for special status plants and wildlife species, particularly birds, to be located on-site. A Natural Resources Assessment (Biological Report) was prepared (Appendix F) and comprised the western portion of the Site. Per the Biological Report, two seasonally appropriate surveys for botanical species with a moderate or higher potential for occurrence at the Site were performed. During the field

surveys, the western portion of the Site was noted to be comprised of native and non-native forbs, grasses, and coniferous, with approximately 71 percent of the study area comprised of non-native plant species. Existing habitat quality within the study area was noted to be consistent with adjacent areas (Appendix F). As provided in the Biological Report, there is the potential for 65 special-status plant species to occur. However, 58 of the plant species are considered to have no or low potential to occur within the study area and seven species have a moderate or higher potential to occur. No special-status plant species were observed within the study area during the field surveys. In addition, the Biological Report states that all locations with a shrub or tree canopy layer, in addition to tall grasses, may provide nesting habitat for a diverse array of migratory bird species. Additionally, one sensitive vegetation community was observed within the palustrine emergent wetland, which included the Argentina egedii Herbaceous Alliance. Based on the findings of the Biological Report, several recommendations are included to ensure no significant impacts to biological resources will occur, including but not limited to minimizing ground disturbance to the minimal extent necessary, project related noise, and timing of vegetation clearing, which have been incorporated in Mitigation Measure BIO-1. In addition, existing trees at the Site will be retained to the greatest extent feasible.

Implementation of the proposed project must comply with the County's Streamside Management Areas and Wetlands Ordinance (SMAWO) (HCC 314-61), which requires a minimum setback of 50 feet for seasonal wetlands, measured at the edge of the delineated wetland. Mitigation Measure BIO-2 requires the Wetland Mitigation and Monitoring Plan (Appendix K) shall be updated to include a 2:1 mitigation ratio for any permanently impacted three-parameter wetlands. All wetlands shall have a respective 50-foot setback. The associated plans shall identify the area, depth, and location of the proposed wetland and shall include cross sections, flow lines, and limits of work area. The update shall also include establishing a wetland reference site to serve as baseline conditions for hydrology, plant community composition, and invasive species cover. Wetland success criteria should be defined relative to this baseline. To expedite revegetation and meet performance criteria, consider collecting plant material (seed, rhizomes, cuttings) onsite and amplifying at a nursery rather than relying on salvage. The stress of uprooting, storing, and replanting established plants may result in poor vigor and low survivorship. Locally appropriate native wetland species can also be obtained directly from a nursery as container stock. The update to Appendix K shall also include any measures described in BIO-3 below. Additionally, a stormwater management plan shall be development that includes measures to treat the stormwater before it is discharged into any wetland. The stormwater management plan shall comply with all applicable LID standards including routine maintenance and replanting to maintain functionality. The mitigation plan shall include a diversity index to ensure the created wetland supports similar or greater diversity to the reference site. The updated mitigation plan shall include measures that demonstrate successful creation of three-parameter wetlands such as conducting scheduled wetland delineations during the monitoring period.

Under mitigation measure BIO-2, during construction of the 0.33-acre bioswale along proposed Parcel 2's eastern boundary, the wetland areas shall be flagged for construction equipment to avoid these areas to the greatest extent feasible. Once construction is complete, the Applicant

shall implement the Wetland Mitigation Plan and replace and replant all area disturbed within 50 feet of mapped wetlands. A minimum of five years of monitoring shall be required for all plantings, within annual monitoring reports submitted to the County, to ensure a minimum success rate of 85 percent. Invasive species cover shall not exceed 15%. The monitoring plan shall include invasive species management to ensure stability of native plantings. Should replanting be determined unsuccessful, replanting and monitoring shall reoccur.

As previously discussed, under Section V, Cultural Resources, one historic barn was found to be located on the southern project parcel (APN 510-081-001) and dates to the mid-1940s. However, as noted in the Cultural Report prepared by William Rich and Associates in May 2021, the barn was found not to be a significant historic resource due to its condition and not being associated with important historical events, the lives of particularly influential individuals, nor constructed with unique style of elements of design. The Cultural Report also found that the barn lacks integrity of setting, materials, workmanship, feeling, and association; and is not eligible for listing in the California Register of Historical Resources. No other pre-contact or historic-era artifacts, features, structures, buildings, or sites were identified on-site, and no further archaeological investigation was recommended.

The proposed project includes ground disturbance. As a result, The Cultural Report provides protocol to follow in the event of inadvertent discovery of cultural resources, which is included as a standard condition of approval for the Special Permit. With mitigation incorporated, a less than significant impact would occur.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects).

Less Than Significant with Mitigation Incorporated. This mitigated negative declaration documents the project's design features and clear, specific mitigation measures that eliminate the project's potential, project-specific impacts on the environment or mitigates its potential impacts to a less-than-significant level. A "lead agency may determine in an initial study that a project's contribution to a significant cumulative impact would be rendered less than cumulatively considerable and thus is not significant." (CEQA Guidelines, § 15064(h)(2).)

When making this determination, the lead agency may conclude that the effects of a project under review would not be cumulatively considerable where "there is no evidence of any individual potentially significant effect." *(Sierra Club v. West Side Irrigation District* (2005) 128 Cal.App.4th 690, 701-702 (*Sierra Club*), citing *Leonoff v. Monterey County Board of Supervisors* (1990) 222 Cal.App.3d 1337, 1358 (*Leonoff*). Importantly, the "mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the Proposed Project's incremental effects are cumulatively considerable." (CEQA Guidelines § 15064(h)(4).)

A lead agency's analysis of cumulative impacts in a mitigated negative declaration is not the

same as the analysis required in an EIR. In the mitigated negative declaration context, the lead agency's obligation is to determine whether the incremental effects of the project under review are "considerable". (*San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1996) 42 Cal.App.4th 608, 624-635 (*San Joaquin Raptor*).) A lead agency's investigation of this question, further, does not require "some sort of grand statistical analysis" or other detailed inquiry of the type that could be appropriate in an EIR. (*San Joaquin Raptor*, p. 625.) A lead agency, as noted, can correctly conclude that the impacts of a project under review are not cumulatively considerable when there is no substantial evidence that any incremental impacts of the project are potentially significant. (*San Joaquin Raptor*, p. 624, citing *Leonoff*, at p. 1358.)

As discussed throughout this document, implementation of the Proposed Project has the potential to result in impacts to the environment that are individually limited, however, mitigation has been incorporated to reduce any potentially significant impacts that are individually limited to a less than significant level for Air Quality and Biological Resources. Regarding other resource categories, the Proposed Project would not have any impacts that are considered cumulatively considerable.

c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?

Less Than Significant with Mitigation Incorporated. Temporary air pollutant emissions may be associated with grading, excavation, and construction on the Site associated with the proposed on-site improvements. The NCUAQMD has established policies regarding the control of fugitive dust during these activities. When future development is proposed at the Site, the project would comply with NCUAQMD Rules and Regulations, specifically Rule 104 Section 4.0, regarding fugitive dust emissions. This includes covering open bodied trucks used for transporting materials likely to release airborne dust, using water or chemicals for dust control during construction, road grading, and land clearing activities, applying water or suitable chemicals on dirt roads, covering materials stockpiles and other surfaces which can give rise to airborne dusts, and promptly removing tracked material from paved streets. Mitigation Measure AQ-1 requires watering of exposed areas during construction, covering of loose materials, limiting vehicles speeds and idle times, and maintaining equipment.

MITIGATION MEASURES
AQ-1. BIO-1, BIO-2. BIO-3, and BIO-4.

FINDINGS
The proposed project would have a **Less Than Significant Impact with Mitigation Incorporated** on Mandatory Findings of Significance.

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McKINLEYVILLE ACE HARDWARE IMPROVEMENTS, COMMERCIAL REZONE,
AND WETLAND MITIGATION PROJECT

Mitigation Monitoring and Reporting Program

The Department found that the project could result in potentially significant adverse impacts unless mitigation measures are required. A list of mitigation that addresses and mitigates potentially significant adverse impacts to a level of non-significance follows.
Mitigation measures were incorporated into conditions of project approval for the project. The following is a list of these measures and a verification form to ensure measures shall be met.

Mitigation Measures

AQ-1. During construction and operation, the following dust control measures shall be implemented:

A. All exposed surfaces (e.g., parking areas, staging areas, soil piles, active graded areas, excavations, and unpaved access roads) shall be watered two times per day in areas of active construction.
B. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
C. All vehicle speeds on unpaved roads shall be limited to 15 mph, unless the unpaved road surface has been treated for dust suppression with water, rock, wood chip mulch, or other dust prevention measures.
D. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes. Clear signage shall be provided for construction workers at all access points.
E. All construction and operation equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications.

Implementation Time Frame	**Party Responsible for Implementation**	**Party Responsible for Verification**	**Form of Verification**	**Date of Verification**	**Verified/ Comments**
During construction activity and project operations (ongoing)	Applicant	Humboldt County Planning and Building Department in consultation with NCUAQMD	Inspection Report		

BIO-1: Any development on-site shall implement the recommendations contained in the *Natural Resources Assessment,* prepared by SHN in August 2019, including:

A. If impacts to special-status resources cannot be avoided while still accomplishing project objectives, these impacts shall be mitigated at a ratio to be determined by consultation with the appropriate regulatory agency including but not limited to the Planning and Building Department and the California Department of Fish and Wildlife.
B. Where project construction activities occur within 100 feet to special-status resources, these resources shall be demarcated by high-visibility construction fencing during the project construction period in a manner sufficient to avoid unintentional impacts.
C. Project-related noise levels shall be minimized so that sound levels are below 50 decibels at 100 feet from the source.
D. Limit ground disturbance and vegetation clearing to the minimal extent necessary to accomplish project goals.
E. Project-related vegetation clearing shall occur outside the bird nesting season, which is February 15 through August 15. If project-related brush clearing or structural work on buildings within the vicinity of nesting bird habitat must occur during the breeding season, nesting bird surveys shall be performed within seven days of project activities in those locations by a qualified biologist to ensure that active nests are not destroyed. If more than seven days has passed between the nesting bird survey and commencement of vegetation removal, the survey must be redone.
F. Use native and locally sourced plant material for landscaping and revegetation.
G. Ensure that future development or new fencing does not prevent wildlife movement by maintaining sufficient movement corridors outside the project area.

Implementation Time Frame	**Party Responsible for Implementation**	**Party Responsible for Verification**	**Form of Verification**	**Date of Verification**	**Verified/ Comments**
No more than one weeks prior to ground disturbing activities	Qualified Biologist	Humboldt County Planning and Building Department in consultation with CDFW	Completion reports; Survey report		

BIO-2: The Wetland Mitigation and Monitoring Plan (Appendix K) shall be updated to include a 2:1 mitigation ratio for any permanently impacted three-parameter wetlands. All wetlands shall have a respective 50-foot setback. The associated plans shall identify the area, depth, and location of the proposed wetland and shall include cross sections, flow lines, and limits of work area. The update shall also include establishing a wetland reference site to serve as baseline conditions for hydrology, plant community composition, and invasive species cover. Wetland

success criteria should be defined relative to this baseline. To expedite revegetation and meet performance criteria, consider collecting plant material (seed, rhizomes, cuttings) onsite and amplifying at a nursery rather than relying on salvage. The stress of uprooting, storing, and replanting established plants may result in poor vigor and low survivorship. Locally appropriate native wetland species can also be obtained directly from a nursery as container stock. The update to Appendix K shall also include any measures described in BIO-3 below. Additionally, a stormwater management plan shall be development that includes measures to treat the stormwater before it is discharged into any wetland. The stormwater management plan shall comply with all applicable LID standards including routine maintenance and replanting to maintain functionality. The mitigation plan shall include a diversity index to ensure the created wetland supports similar or greater diversity to the reference site. The updated mitigation plan shall it will demonstrate successfully creation of three-parameter wetlands such as conducting scheduled wetland delineations during the monitoring period.

Implementation Time Frame	Party Responsible for Implementation	Party Responsible for Verification	Form of Verification	Date of Verification	Verified/ Comments
Prior to project implementation	Applicant and qualified professional	Humboldt County Planning and Building Department in consultation with CDFW	Revised plan; Stormwater plan; Completion reports; Monitoring reports		

BIO-3: During construction of the 0.33-acre bioswale along proposed Parcel 2's eastern boundary, the on-site wetland areas shall be flagged for construction equipment to avoid these areas to the greatest extent feasible. Once construction is complete, the Applicant shall implement the Wetland Mitigation Plan and replace and replant all area disturbed within 50 feet of mapped wetlands. A minimum of five years of monitoring shall be required for all plantings, within annual monitoring reports submitted to the County, to ensure a minimum success rate of 85 percent. Invasive species cover shall not exceed 15%. The monitoring plan shall include invasive species management to ensure stability of native plantings. Should replanting be determined unsuccessful, replanting and monitoring shall reoccur, as described above.

Implementation Time Frame	Party Responsible for Implementation	Party Responsible for Verification	Form of Verification	Date of Verification	Verified/ Comments
Prior to project implementation	Applicant and qualified professional	Humboldt County Planning and	Revised plan; Stormwater		

		Building Department in consultation w/ CDFW	plan; Completion reports; Monitoring reports		

BIO-4: To minimize potential impacts, including runoff, to the on-site wetlands areas during the project improvements and potential future on-site development, the project contractor(s) would be required to implement standard Best Management Practices (BMPs) during project construction, to ensure compliance with the Clean Water Act (33 U.S.C. Sec. 1251 et seq. (1972)) and the Porter-Cologne Water Quality Control Act and as amended (California Water Code Sec. 1300 et seq.). Such BMPs may include the use of straw bales, fiber rolls, and/or silt fencing structures to assure the minimization of erosion resulting from construction and to avoid runoff into sensitive habitat areas, limiting ground disturbance to the minimum necessary, and stabilizing disturbed soil areas as soon as feasible after construction is completed.

Implementation Time Frame	**Party Responsible for Implementation**	**Party Responsible for Verification**	**Form of Verification**	**Date of Verification**	**Verified/ Comments**
Prior to project implementation	Applicant and qualified professional	Humboldt County Planning and Building Department in consultation with Water Board	Revised plan; Stormwater plan; Completion reports; Monitoring reports		

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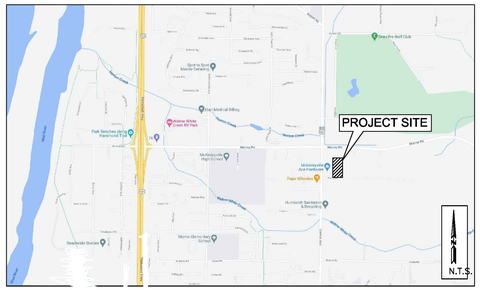
CONSTRUCTION DRAWINGS

FOR

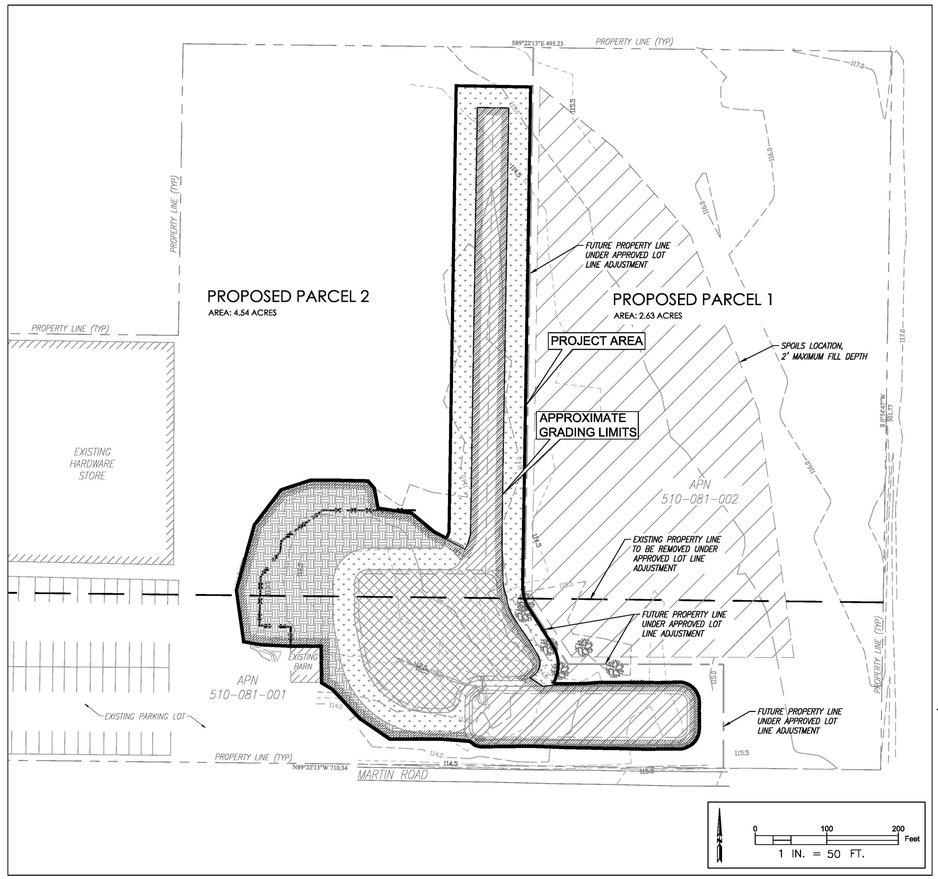
BLACK DOG PARTNERSHIP-
WETLAND MITIGATION
GRADING & DRAINAGE PLAN

APN's: 510-081-001 & 002

LOCATION MAP



SITE PLAN



SHEET INDEX

C0.00	COVER SHEET
C0.01	ABBREVIATIONS & LEGEND
C0.02	CONSTRUCTION NOTES
C1.00	EXISTING CONDITIONS/DEMOLITION PLAN
C2.00	GRADING AND DRAINAGE PLAN
C2.01	GRADING SECTIONS
C3.00	CONSTRUCTION DETAILS
C3.01	CONSTRUCTION DETAILS
C4.00	EROSION & SEDIMENT CONTROL PLAN
C4.01	EROSION & SEDIMENT CONTROL DETAILS

SURVEY NOTES

SURVEY: TOPOGRAPHIC SURVEY BY KELLY-O'HERN ASSOCIATES, DATED MAY 6, 2021.
DATUM: ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), PER NGS BENCHMARK PID - DG5899, VERTICAL CONTROL DISK SET IN CONCRETE HEADWALL OVER WIDOW WHITE CREEK, ELEVATION OF 112.80 FEET.
BOUNDARY INFORMATION: PROPERTY LINES/BOUNDARY INFORMATION PER TOPOGRAPHIC SURVEY BY KELLY-O'HERN ASSOCIATES, DATED MAY 6, 2021, ARE SHOWN BASED ON BOOK 71 OF SURVEYS, PAGES 52 & 53.

ENGINEERS STATEMENT

THE ENGINEER OF RECORD WILL MAKE INSPECTIONS FOR COMPLIANCE WITH THE APPROVED GRADING PLANS AND PROVIDE A REPORT/LETTER TO THE BUILDING INSPECTION DIVISION CONFIRMING THAT THE GRADING, EROSION AND SEDIMENT CONTROL WORK HAVE BEEN COMPLETED IN COMPLIANCE WITH THE APPROVED SOILS REPORT AND GRADING PLANS.

EARTHWORK NOTES

1. ALL QUANTITIES SHOWN ON THIS PLAN ARE APPROXIMATE. CALCULATED EXCESS AND SHORTAGE ARE FROM FINISHED GRADE TO EXISTING GROUND. THE ACTUAL AMOUNT OF EARTH MOVED WILL VARY, DEPENDANT ON COMPACTION, CONSOLIDATION, STRIPPING REQUIREMENTS, AND THE CONTRACTORS METHOD OF OPERATION.
2. DUE TO THE INEXACT NATURE OF EARTHWORK ESTIMATING, THERE IS NO GUARANTEEE OF THESE QUANTITIES. CONTRACTOR SHALL MAKE HIS OWN ESTIMATE FOR BID AND CONTRACT PURPOSES.
3. CONTRACTOR SHALL REFER TO REPORT TITLED 'WETLAND DELINEATION, BLACK DOG PARTNERSHIP', PREPARED BY SHN CONSULTING ENGINEERS & GEOLOGIST, INC., DATED MAY 2020, SHN JOB NO 017257 FOR SPECIFIC SOILS CHARACTERIZATIONS AND FINDINGS AS WELL AS GUIDELINES FOR PERFORMING SITE GRADINGS WITHIN WETLAND, WETLAND SWALE, AND UPLAND BUFFER.

ENGINEER'S ESTIMATE:

EARTHWORK:
CUT= 930 CY
FILL= 290 CY
NET= 640 CY (CUT)

DISTURBED AREAS:
DISTURBED AREA = 1.0 ACRES

PROJECT PURPOSE STATEMENT

THIS PROJECT CONSISTS OF GRADING AND DRAINAGE IMPROVEMENTS FOR A WETLAND & WETLAND SWALE W/ UPLAND BUFFER (BY OTHERS), AS WELL AS A DETENTION/RETENTION POND.

LACO
EUREKA • UKIAH • SANTA ROSA • CHICO
1-800-515-5054 www.lacoassociates.com

NO.	HISTORY / REVISION	BY	CHK.	DATE

BLACK DOG PARTNERSHIP
WETLAND MITIGATION GRADING & DRAINAGE PLAN
2725 CENTRAL AVENUE
McKINLEYVILLE, CA 95519

COVER SHEET

REGISTERED PROFESSIONAL ENGINEER CHAD C. MOSTER No. 59863 Exp. 12-31-2023 CIVIL STATE OF CALIFORNIA

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ABBREVIATIONS

A

AB	–	AGGREGATE BASE
ABDN	–	ABANDONED
AC	–	ASPHALT CONCRETE
ACP	–	ASBESTOS CEMENT PIPE
ACI	–	AMERICAN CONCRETE INSTITUTE
AG	–	AGGREGATE
APPROX	–	APPROXIMATELY
ASTM	–	AMERICAN SOCIETY FOR TESTING & MATERIALS
@	–	AT

B

BC	–	BEGIN CURVE
BCR	–	BEGIN CURB RETURN
BF	–	BLIND FLANGE
BFV	–	BUTTERFLY VALVE
BLDG	–	BUILDING
BM	–	BENCH MARK
BOT	–	BOTTOM
BRG	–	BEARING
BTWN	–	BETWEEN
BVC	–	BEGINNING OF VERTICAL CURVE
BW	–	BOTTOM OF WALL

C

CATV	–	CABLE TELEVISION
CB	–	CATCH BASIN
CEIL	–	CEILING
CFM	–	CUBIC FEET PER MINUTE
CI	–	CAST IRON
CIP	–	CAST IRON PIPE
C.I.P.	–	CAST–IN–PLACE
CJ	–	CONSTRUCTION JOINT
CL,℄	–	CENTERLINE
CLR	–	CLEAR
CMP	–	CORRUGATED METAL PIPE
CMU	–	CONCRETE MASONRY UNIT
CO	–	CLEANOUT
CONC	–	CONCRETE
CONT	–	CONTINUOUS
COORD	–	COORDINATE
CP	–	SURVEY CONTROL POINT
CPLG	–	COUPLING
CTR	–	CENTER
CU FT	–	CUBIC FEET
CV	–	CHECK VALVE
CW	–	COLD WATER
CY	–	CUBIC YARD

D

°	–	DEGREE (ANGLE)
d	–	PENNY (NAIL SIZE)
DBL	–	DOUBLE
DI	–	DRAINAGE INLET
DIA	–	DIAMETER
DIAG	–	DIAGONAL
DIM	–	DIMENSION
DIP	–	DUCTILE IRON PIPE
DRWY	–	DRIVEWAY
DWG	–	DRAWING

E

<E>	–	EXISTING
EA	–	EACH
EC	–	END CURVE
ECR	–	END CURB RETURN
EF	–	EACH FACE
EG	–	EXISTING GRADE
EL	–	ELBOW
ELEC	–	ELECTRIC OR ELECTRICAL
ELEV	–	ELEVATION
ENGR	–	ENGINEER
EP	–	EDGE OF PAVEMENT
EQ	–	EQUAL
EQUIP	–	EQUIPMENT
EVC	–	END OF VERTICAL CURVE
EW	–	EACH WAY
EXC	–	EXCAVATE
EXP JT	–	EXPANSION JOINT
EXT	–	EXTERIOR

F

FCA	–	FLANGE COUPLING ADAPTER
FC	–	FACE OF CURB
FF	–	FINISHED FLOOR
FG	–	FINISHED GRADE
FH	–	FIRE HYDRANT
FIN	–	FINISH
FL,℄	–	FLOW LINE
FLG	–	FLANGE
FLR	–	FLOOR
FS	–	FINISHED SURFACE
FT	–	FOOT
FT^2	–	SQUARE FEET
FT^3	–	CUBIC FEET
FTG	–	FOOTING

G

G	–	GAS
GALV	–	GALVANIZED
GIP	–	GALVANIZED IRON PIPE
GPM	–	GALLONS PER MINUTE
GRD	–	GRADE
GSP	–	GALVANIZED STEEL PIPE
GV	–	GATE VALVE

H

HB	–	HOSE BIBB
HDR	–	HEADER
HP	–	HORSEPOWER
HORIZ	–	HORIZONTAL
HT	–	HEIGHT
HW	–	HOT WATER

I

ID	–	INSIDE DIAMETER
IN	–	INCH
INT	–	INTERIOR
INV	–	INVERT

J

JT	–	JOINT
JP	–	JOINT POLE

K

KIP	–	THOUSAND POUNDS
KW	–	KILOWATT

L

∠	–	ANGLE (DEGREES)
LB	–	POUND
LF	–	LINEAR FEET
LG	–	LONG
LT	–	LEFT

M

MATL	–	MATERIAL
MAX	–	MAXIMUM
ME	–	MATCH EXISTING
MECH	–	MECHANICAL
MFR	–	MANUFACTURER
MH	–	MANHOLE
MIN	–	MINIMUM
MISC	–	MISCELLANEOUS
MJ	–	MECHANICAL JOINT
MTL	–	METAL

N

<N>	–	NEW
NC	–	NORMALLY CLOSED
NIC	–	NOT IN CONTRACT
NO.	–	NUMBER
NO	–	NORMALLY OPEN
NPT	–	NATIONAL PIPE THREAD
NTS	–	NOT TO SCALE
#	–	NUMBER

O

OC	–	ON CENTER
OD	–	OUTSIDE DIAMETER
OG	–	ORIGINAL GROUND
OHE	–	OVERHEAD ELECTRIC
OZ	–	OUNCE
OVHD	–	OVERHEAD

P

PB	–	PULL BOX
PCC	–	POINT OF COMPOUND CURVATURE
PCF	–	POUNDS PER CUBIC FOOT
PE	–	PLAIN END
PERF	–	PERFORATED
PEP	–	POLYETHYLENE PIPE
PL,℄	–	PROPERTY LINE
PLYWD	–	PLYWOOD
POC	–	POINT ON CURVE
PP	–	POWER POLE
PRC	–	POINT OF REVERSE CURVATURE
PREFAB	–	PREFABRICATED
PSF	–	POUNDS PER SQUARE FOOT
PSI	–	POUNDS PER SQUARE INCH
PSIG	–	POUNDS PER SQUARE INCH GAUGE
PV	–	PLUG VALVE
PVC	–	POLYVINYL CHLORIDE PLASTIC
PVI	–	POINT OF VERTICAL INTERSECTION
PVMT	–	PAVEMENT
PVT	–	PRIVATE

Q

QTY	–	QUANTITY

R

R	–	RADIUS
RC	–	RELATIVE COMPACTION
RCP	–	REINFORCED CONCRETE PIPE
RD	–	ROAD
RDCR	–	REDUCER
RDWD	–	REDWOOD
REQD	–	REQUIRED
RM	–	ROOM
RSP	–	ROCK SLOPE PROTECTION
RT	–	RIGHT
R/W	–	RIGHT–OF–WAY

S

SL	–	SLOPE
SCHED	–	SCHEDULE
SD	–	STORM DRAIN
SDMH	–	STORM DRAIN MAN HOLE
SECT	–	SECTION
SHT	–	SHEET
SIM	–	SIMILAR
SPEC	–	SPECIFICATIONS
SQ	–	SQUARE
SQ FT	–	SQUARE FOOT
SQ IN	–	SQUARE INCH
SS	–	SANITARY SEWER
SSMH	–	SEWER SYSTEM MAN HOLE
STA	–	STATION
STD	–	STANDARD
STL	–	STEEL
SW	–	SIDEWALK
SYMM	–	SYMMETRICAL

T

T	–	TELEPHONE
TAN	–	TANGENT
T&B	–	TOP AND BOTTOM
T&G	–	TONGUE AND GROOVE
TBM	–	TEMPORARY BENCH MARK
TC	–	TOP OF CURB
TELEM	–	TELEMETRY
TEMP	–	TEMPERATURE OR TEMPORARY
THD	–	THREAD
TOC	–	TOP OF CONCRETE
TOG	–	TOP OF GRATE
TOF	–	TOP OF FOOTING
TOW	–	TOP OF WALL
TP	–	TOP OF PAVEMENT OR TELEPHONE POLE
<TYP>	–	TYPICAL

U

UBC	–	UNIFORM BUILDING CODE
UOS	–	UNLESS OTHERWISE SPECIFIED
UG	–	UNDERGROUND
UTIL	–	UTILITY
UP	–	UTILITY POLE

V

V	–	VOLT
VC	–	VERTICAL CURVE
VCP	–	VITRIFIED CLAY PIPE
VERT	–	VERTICAL
VPI	–	VERTICAL POINT OF INTERSECTION

W

WM	–	WATER METER
WSP	–	WELDED STEEL PIPE
WV	–	WATER VALVE

X

XFMR	–	TRANSFORMER

Y

YD	–	YARD
YD^2	–	SQUARE YARD
YD^3	–	CUBIC YARD

NOTES:

1. CONTACT THE ENGINEER FOR SYMBOLS NOT LISTED.
2. THIS IS A STANDARD SHEET, THEREFORE SOME SYMBOLS OR ABBREVIATIONS MAY APPEAR ON THIS SHEET WHICH DO NOT APPEAR ON THE PLANS.
3. SITE AND UTILITY SYMBOLS SHOWN ON THIS SHEET ARE NOT INTENDED TO REPRESENT THE PHYSICAL SCALE OR SHAPE OF ANY ITEMS. WHERE LARGE–SCALE PLANS ARE PRESENTED, THE SYMBOLS SHOWN HEREON MAY BE REPLACED BY DETAILS MORE SUITED TO THE DRAWING SCALE.

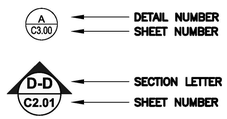
UTILITIES & TOPOGRAPHY LEGEND

PROPOSED	EXISTING	
NOT USED		BENCH MARK
47.55	NOT USED	FINISH GRADE ELEVATION
		FLOW LINE AND DIRECTION
		TOP OF CUT
		TOP OF FILL
		TOE OF CUT OR FILL
NOT USED		SPRUCE TREES
		ROADS
NOT USED		FENCE
		BOUNDARY LINE
		LOT LINE
	115.0	EXISTING MAJOR CONTOUR
	114.5	EXISTING MINOR CONTOUR
110		PROPOSED MAJOR CONTOUR
111		PROPOSED MINOR CONTOUR
//////	NOT USED	ITEM TO BE REMOVED
–SD–	–SD–	STORM DRAIN LINE NOTE: SIZE AND MATERIAL OF EXISTING PIPING MAY BE SHOWN WHEN KNOWN. SIZE AND MATERIAL OF NEW PIPING MAY BE SHOWN ON PLAN OR IN PROFILE.

CURVE DATA

R	(RADIUS)
L	(LENGTH)
△	(DELTA)
T	(TANGENT)

DETAIL AND SECTION DESIGNATION



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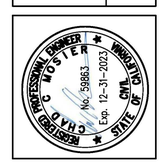
NO.	HISTORY / REVISION	BY	CHK.	DATE

BLACK DOG PARTNERSHIP
WETLAND MITIGATION GRADING & DRAINAGE PLAN
2725 CENTRAL AVENUE
McKINLEYVILLE, CA 95519

ABBREVIATIONS & LEGEND



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GENERAL NOTES:

1. ALL CONSTRUCTION SHALL CONFORM TO THESE PLANS AND THE FOLLOWING STANDARDS:
   - A. HUMBOLDT COUNTY IMPROVEMENT STANDARDS, ORDINANCES, CONSTRUCTION DETAILS, AND SPECIFICATIONS (LATEST REVISIONS)
   - B. CALIFORNIA BUILDING CODE (CBC) (LATEST REVISION)
   - C. CAL-OSHA (LATEST REVISION)
   - D. CALTRANS STANDARD SPECIFICATIONS (LATEST REVISION)
   - E. CALIFORNIA STORMWATER QUALITY ASSOCIATION (CASQA) BEST MANAGEMENT PRACTICES HANDBOOK – CONSTRUCTION (LATEST VERSION)
2. THE ENGINEER PREPARING THESE PLANS SHALL NOT BE RESPONSIBLE NOR LIABLE FOR ANY UNAUTHORIZED CHANGES TO, OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.
3. THE CONTRACTOR SHALL AGREE TO DEFEND, INDEMNIFY, AND HOLD THE DESIGN PROFESSIONALS HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE DESIGN PROFESSIONAL.
4. LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN HEREON ARE BASED ON INFORMATION VISIBLE IN THE FIELD AND ARE SHOWN FOR INFORMATION ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES PRIOR TO EXCAVATION AND CONSTRUCTION IN ANY AREA. CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT (USA) AT 1-800-227-2600 A MINIMUM OF 48 HOURS IN ADVANCE OF ANY EXCAVATION. CONTRACTOR SHALL IMMEDIATELY REPORT ANY DISCREPANCIES IN RECORD INFORMATION TO THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION OF ANY WORK.
5. THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF PROJECT CONSTRUCTION, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND IS NOT LIMITED TO NORMAL WORKING HOURS.
6. CONTRACTOR SHALL NOT PROCEED WITH CONSTRUCTION UNTIL THESE PLANS ARE SIGNED BY THE ENGINEER AND THE AUTHORIZED COUNTY REPRESENTATIVE.
7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH THE PERTINENT SECTIONS OF THE "CONSTRUCTION SAFETY ORDERS", MOST CURRENT REVISION, ISSUED BY THE STATE OF CALIFORNIA, AND ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT. THE DESIGN, ADEQUACY AND SAFETY OF ERECTION BRACING, SHORING, TEMPORARY SUPPORTS ETC., IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR, AND HAS NOT BEEN CONSIDERED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATE DESIGN AND CONSTRUCTION OF ALL FORMS AND SHORING REQUIRED.
8. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS.
9. CONTRACTOR SHALL PROTECT ALL EXISTING IMPROVEMENTS ON OR ADJACENT TO PROJECT SITE. CONTRACTOR SHALL REPAIR OR REPLACE ALL DAMAGE TO EXISTING IMPROVEMENTS TO THE SATISFACTION OF THE ENGINEER.
10. CONTRACTOR SHALL VERIFY CONDITIONS AND DIMENSIONS AT THE SITE BEFORE STARTING WORK AND IMMEDIATELY NOTIFY THE ENGINEER IF ANY CONDITIONS OR DIMENSIONS ARE UNUSUAL OR NOT AS SHOWN ON THESE PLANS.
11. DO NOT USE SCALED DIMENSIONS, USE WRITTEN DIMENSIONS. WHERE NO DIMENSIONS ARE SHOWN, CONSULT ENGINEER FOR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
12. DETAILS OF CONSTRUCTION NOT FULLY SHOWN SHALL BE OF THE SAME NATURE AS SHOWN FOR SIMILAR CONDITIONS.
13. UTILITIES REQUIRED FOR CONSTRUCTION WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. CONTRACTOR SHALL REMOVE ALL DELETERIOUS MATERIAL FROM SITE GENERATED DURING CONSTRUCTION INCLUDING BUT NOT LIMITED TO BROKEN CONCRETE, STUMPS, ROCKS, DEBRIS, ASPHALT RUBBLE, AND GARBAGE, AND LEGALLY DISPOSE OF THE ABOVE.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATE DESIGN AND CONSTRUCTION OF ALL FORMS AND SHORING.
16. ALL UNDERGROUND UTILITIES SHALL BE INSTALLED PRIOR TO CONSTRUCTION OR REPAIR OF STREET STRUCTURAL SECTION.
17. TRENCH SHORING SHALL BE IN ACCORDANCE WITH THE CAL-OSHA CONSTRUCTION SAFETY ORDERS, LATEST REVISION, WHERE REQUIRED.
18. THESE PLANS SHALL NOT BE CHANGED OR REUSED WITHOUT WRITTEN APPROVAL BY THE ENGINEER.

GRADING NOTES:

1. GENERAL:
   - A. EARTHWORK AND GRADING SHALL BE IN ACCORDANCE WITH COUNTY OF HUMBOLDT GRADING, EROSION, AND SEDIMENT CONTROL REGULATIONS.
   - B. DURING CONSTRUCTION AND UPON COMPLETION OF ALL GRADING, CONTRACTOR SHALL PROVIDE EROSION CONTROL MEASURES IN ACCORDANCE WITH THE COUNTY OF HUMBOLDT GRADING, EROSION, AND SEDIMENT CONTROL REGULATIONS.
   - C. ADJOINING PUBLIC STREETS AND PRIVATE DRIVES SHALL BE KEPT CLEAN OF PROJECT DIRT, MUD, MATERIALS AND DEBRIES, TO THE SATISFACTION OF THE ENGINEER.
   - D. GRADES BETWEEN THOSE INDICATED ARE INTENDED TO BE STRAIGHT INTERPOLATIONS UNLESS OTHERWISE NOTED.
   - E. PROPERTY LINES SHOWN HEREON ARE FOR INFORMATIONAL PURPOSES ONLY AND MAY NOT REFLECT THEIR EXACT LOCATION.
   - F. FILL MATERIALS USED TO SUPPORT FOUNDATIONS, SIDEWALKS, AND PAVEMENTS SHOULD BE FREE OF ORGANIC MATERIAL, DEBRIS AND/OR OTHER DELETERIOUS MATERIAL. MATERIAL SHALL MEET THE FOLLOWING SPECIFICATIONS.
     - a. PLASTICITY INDEX: LESS THAN 15 PERCENT
     - b. LIQUID LIMIT: LESS THAN 40 PERCENT
     - c. PERCENT PASSING NO. 200 SIEVE: 50 MAX, 10 MIN
   - G. UNDER FOUNDATIONS AND FLOOR SLABS, THE UPPER 12 TO 18 INCHES OF SOIL SHOULD BE REMOVED SO THAT THE FOUNDATION/FLOOR SLAB WILL BEAR ON UNDISTURBED NATIVE BEARING SOILS OR ON ENGINEERED FILL.
   - H. UNDER PAVED AREA, SCARIFY, MOISTURE CONDITION, AND RECOMPACT THE UPPER 6 INCHES OF SOIL AS DESCRIBED FURTHER HEREIN.
2. INSPECTIONS AND TESTING:
   - A. SOIL PREPARATION AND COMPACTION TESTING SHALL BE CARRIED OUT IN COMPLIANCE WITH CHAPTER 33, 18, AND APPENDIX 33, MOST RECENT EDITION OF THE CALIFORNIA BUILDING CODE AND WITH THESE PLANS.
   - B. A FAILING COMPACTION TEST INDICATES THAT THE REQUIRED COMPACTION STANDARDS HAVE NOT BEEN ACHIEVED. ANY FILL MATERIAL OR PORTION OF FILL MATERIAL THAT DOES NOT MEET THE SPECIFICATION REQUIREMENTS SHALL BE REMOVED AND RECOMPACTED UNTIL THE REQUIREMENTS ARE SATISFIED, AT NO ADDITIONAL COST TO THE OWNER.
   - C. EXCAVATIONS FOR COMPACTION TESTS SHALL BE BACKFILLED WITH MATERIAL SIMILAR TO THAT EXCAVATED AND BACKFILLED BY THE CONTRACTOR AND COMPACTED TO THE SPECIFIED DENSITY.
3. SITE MATERIALS
   - D. MATERIAL OBTAINED FROM THE PROJECT SITE MAY BE SUITABLE FOR USE AS FILL OR BACKFILL MATERIALS UNLESS OTHERWISE SHOWN ON THESE PLANS AND PROVIDING SAID MATERIAL MEETS THE CONDITIONS AS DESCRIBED IN THE REPORT TITLED "WETLAND DELINEATION, BLACK DOG PARTNERSHIP", PREPARED BY SHN CONSULTING ENGINEERS & GEOLOGIST, INC., DATED MAY 2020, SHN JOB NO 017257., AND ALL UPDATES TO ABOVE-REFERENCED DOCUMENT. UNSUITABLE FILL MATERIAL SHALL BE REMOVED FROM SITE AND DISPOSED OF AT AN APPROVED LOCATION. APPROVED NATIVE MATERIAL USED AS BACKFILL SHALL BE FREE FROM ORGANIC MATERIAL, RUBBISH, DEBRIS, AND OTHER OBJECTIONABLE MATERIALS; HOWEVER, ROCKS, BOULDERS, BROKEN CONCRETE, AND BITUMINOUS TYPE PAVEMENT OBTAINED FROM THE PROJECT EXCAVATIONS MAY BE UPON WRITTEN APPROVAL PERMITTED IN THE BACKFILL OF FILL WITH THE FOLLOWING LIMITATIONS:
     - a. THE MAXIMUM DIMENSION OF ANY PIECE USED SHALL BE 3 INCHES.
     - b. "NESTING" OF PIECES WILL NOT BE PERMITTED.
4. PROTECTION
   - A. PROVIDE FOR SURFACE DRAINAGE DURING THE PERIOD OF CONSTRUCTION IN A MANNER THAT AVOIDS CREATING A NUISANCE TO ADJACENT AREA. KEEP ALL EXCAVATION FREE OF WATER DURING THE ENTIRE PROGRESS OF THE WORK, REGARDLESS OF THE CAUSE, SOURCE OR NATURE OF THE WATER. THE CONTRACTOR SHALL PREVENT EROSION OF FRESHLY GRADED AREAS DURING CONSTRUCTION UNTIL SUCH TIME AS PERMANENT DRAINAGE AND EROSION CONTROL MEASURES HAVE BEEN CONSTRUCTED.
   - B. WATERING: THE CONTRACTOR SHALL PERIODICALLY WATER DISTURBED SURFACES TO PREVENT THE RELEASE OF AIRBORNE DUST. WHERE DAMAGE OCCURS TO ADJACENT AREA OR OFFSITE PROPERTY AS A RESULT OF DUST FROM THE WORK, THE CONTRACTOR SHALL PROMPTLY CORRECT AND CLEAN OR OTHERWISE REPAIR SUCH DAMAGE AT NO ADDITIONAL COST, TO THE SATISFACTION OF THE OWNER.
   - C. BENCHMARKS, MONUMENTS, SIGNS, AND OTHER REFERENCE POINTS SHALL BE MAINTAINED BY THE CONTRACTOR, AS DIRECTED BY OWNER, AT NO ADDITIONAL COST TO THE OWNER.
5. COMPACTION – GENERAL
   - A. RELATIVE COMPACTION (R.C.) AS USED HEREIN REFERS TO THE RATIO OF THE IN PLACE DENSITY OF THE SOIL TO THE MAXIMUM DRY DENSITY AS DESCRIBED IN THE ASTM D1557 COMPACTION TEST PROCEDURE.
   - B. IN PAVED AND SHOULDER AREAS AND AREAS TO RECEIVE STRUCTURAL LOADS, SUBGRADE WITHIN 30 INCHES OF FINAL GRADE SHALL BE COMPACTED TO 95% AND BACKFILLS AND FILLS MORE THAN 30 INCHES BELOW FINAL GRADE SHALL BE COMPACTED TO 90%.
   - C. IN NON-PAVED AND NON-STRUCTURAL LOAD BEARING AREAS, BACKFILLS AND FILLS SHALL BE COMPACTED TO 90%.
   - D. PLACE BACKFILL AND FILL SOIL MATERIALS IN LOOSE LIFTS OF NOT MORE THAN 8 INCHES FOR MATERIAL COMPACTED BY HEAVY COMPACTION EQUIPMENT, AND NOT MORE THAN 6 INCHES FOR MATERIAL COMPACTED BY HAND-OPERATED TAMPERS.
   - E. THE GROUND SURFACE IN AREAS TO RECEIVE FILL SHALL BE PREPARED IN ACCORDANCE WITH SOILS REPORT AND AS FOLLOWS:
     - a. ALL ORGANIC MATERIAL AND TOPSOIL SHALL BE REMOVED.
     - b. ON SLOPES GREATER THAN 1V:4H, HORIZONTAL BENCHES SHALL BE CUT INTO THE SOIL TO PROVIDE LEVEL BEARING SURFACE FOR THE FILL MATERIAL. THE MINIMUM WIDTH OF THE BENCHES SHALL BE FOUR FEET.
   - F. CUT AND FILL SLOPES SHALL NOT EXCEED 10 PERCENT UNLESS BENCHED.
6. TRENCH COMPACTION
   - A. RELATIVE COMPACTION (R.C.) AS USED HEREIN REFERS TO THE RATIO OF THE IN PLACE DENSITY OF THE SOIL TO THE MAXIMUM DRY DENSITY AS DESCRIBED IN THE ASTM D1557 COMPACTION TEST PROCEDURE.
   - B. SEE TRENCH DETAILS ON THESE PLANS FOR TRENCH COMPACTION STANDARDS.
   - C. TRENCHES WILL BE TESTED PER LIFT AT AN INTERVAL OF EVERY 50-75 LINEAR FEET WITH A MINIMUM OF TWO TESTS PER ANY LENGTH OF TRENCHING. THE CONTRACTOR SHALL PROVIDE EQUIPMENT AND AN OPERATOR, FREE OF CHARGE, TO THE ENGINEER TO GAIN ACCESS TO BACKFILLED ELEVATIONS FOR TESTING. A FAILING COMPACTION TEST INDICATES THAT THE REQUIRED COMPACTION STANDARDS HAVE NOT BEEN ACHIEVED.
   - D. FILL MATERIALS SHALL BE MECHANICALLY COMPACTED, JETTING WILL NOT BE ALLOWED.
   - E. CARE SHALL BE TAKEN NOT TO CRUSH THE PIPE OR OTHER COMPONENTS WITH COMPACTION EQUIPMENT.

UTILITY NOTES:

1. THE CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND CONSTRUCTION CONTRACTOR SHALL AGREE TO DEFEND, INDEMNIFY AND HOLD DISTRICT AND DISTRICT ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE DESIGN PROFESSIONAL OR DISTRICT.
2. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING UNDERGROUND SERVICE ALERT, IN ADVANCE, OF ALL APPLICABLE EXCAVATIONS IN ACCORDANCE WITH THE LAW. TOLL FREE NUMBER IS 1-800-227-2600.
3. THE CONTRACTOR SHALL PROVIDE ALL THE NECESSARY EQUIPMENT, LABOR AND MATERIAL REQUIRED FOR SHEETING, SHORING, AND BRACING FOR THE PROTECTION OF LIFE AND LIMB WHICH SHALL CONFORM TO THE INDUSTRIAL SAFETY ORDER. NOTHING IN THESE SPECIFICATIONS SHALL BE CONSTITUTED TO IMPOSE TORT LIABILITY ON THE DISTRICT.

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BLACK DOG PARTNERSHIP
WETLAND MITIGATION GRADING & DRAINAGE PLAN
2725 CENTRAL AVENUE
McKINLEYVILLE, CA 95519

CONSTRUCTION NOTES

PROFESSIONAL ENGINEER * CHRISTOPHER M. MASTER * No. 59883 Exp. 12-31-2023 * STATE OF CALIFORNIA * CIVIL

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DATE	November 30, 2021
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DRAWING No.	C0.02
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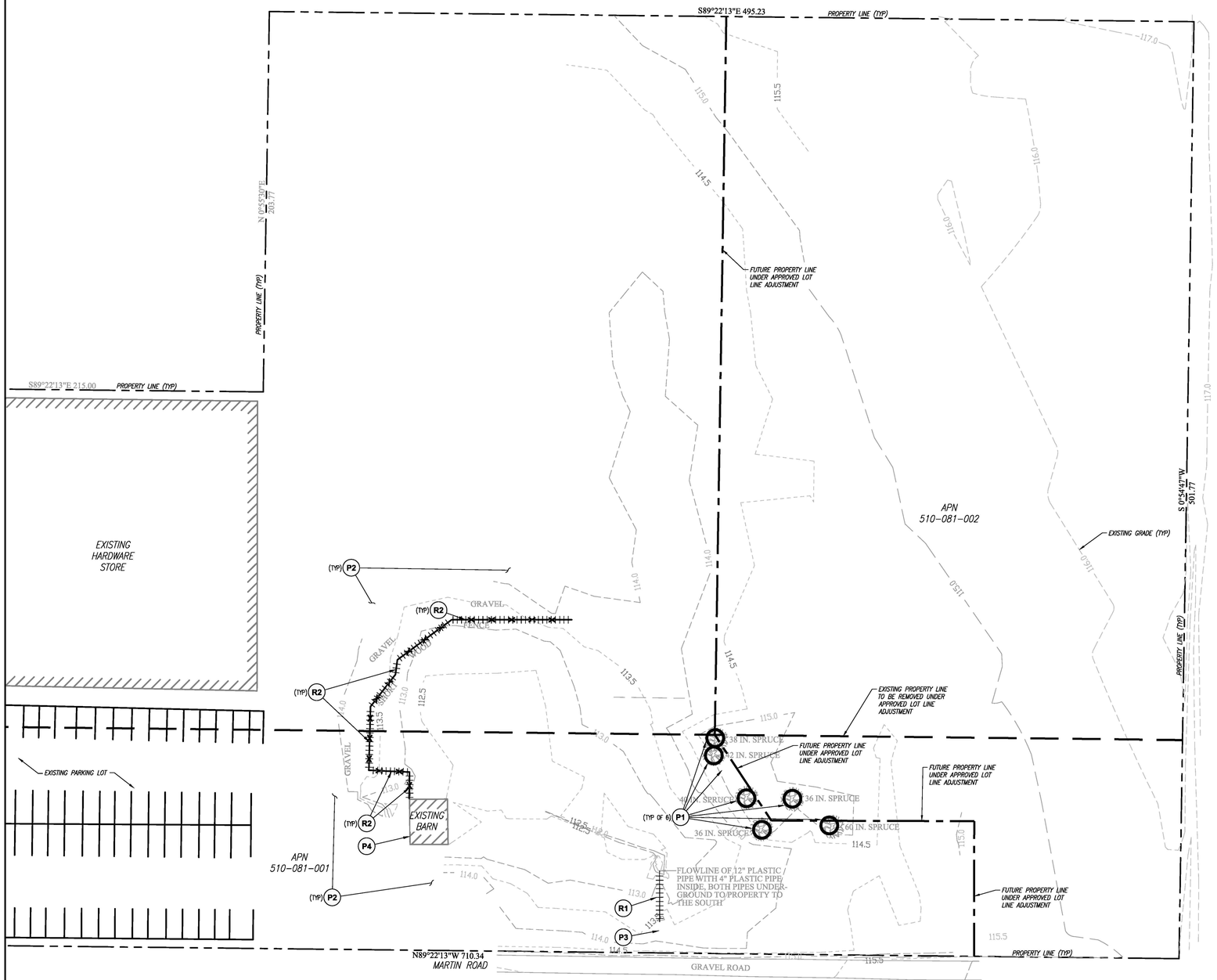
DEMOLITION NOTES

- (P1) PRESERVE EXISTING TREE
- (P2) PRESERVE EXISTING GRAVEL
- (P3) PRESERVE EXISTING 12" CULVERT. REMOVE EXISTING 4" PIPE FROM INSIDE EXISTING 12" CULVERT.
- (P4) PRESERVE EXISTING BUILDING
- (R1) REMOVE EXISTING CULVERT NECESSARY FOR PROPOSED IMPROVEMENTS. SEE SHEET C2.00 FOR PROPOSED CONNECTION DETAILS.
- (R2) REMOVE EXISTING WOOD FENCE, POSTS, AND FOOTINGS

LEGEND

- PRESERVE TREE AS INDICATED
- (P1) REFER TO DEMOLITION NOTES



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BLACK DOG PARTNERSHIP
WETLAND MITIGATION GRADING & DRAINAGE PLAN
2725 CENTRAL AVENUE
McKINLEYVILLE, CA 95519

EXISTING CONDITIONS/DEMOLITION PLAN

REGISTERED PROFESSIONAL ENGINEER CHAD C. WOSTER No. 59863 Exp. 12-31-2023 CIVIL STATE OF CALIFORNIA

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30 0 15 30 60
1 IN. = 30 FT.

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LEGEND

- DETENTION/RETENTION POND PER DETAIL C, SHEET C3.00
- WETLAND PER DETAIL A, SHEET C3.00
  PLANTINGS BY PROJECT BIOLOGIST, NOT A PART OF THIS PLAN.
- WETLAND SWALE PER DETAIL B, SHEET C3.00
  PLANTINGS BY PROJECT BIOLOGIST, NOT A PART OF THIS PLAN.
- 25' VEGETATED BUFFER, BY OTHERS, PER REPORT TITLED 'WETLAND DELINEATION, BLACK DOG PARTNERSHIP', PREPARED BY SHN CONSULTING ENGINEERS & GEOLOGIST, INC., DATED MAY 2020, SHN JOB NO 017257. PLANTINGS BY PROJECT BIOLOGIST, NOT A PART OF THIS PLAN.
- GRADED AREAS OUTSIDE OF WETLAND, WETLAND SWALE, DETENTION/RETENTION POND, AND 25' VEGETATED BUFFER. SCARIFY TOP 6", REMOVE ORGANIC MATERIAL & RECOMPACT TO 95% RELATIVE COMPACTION. PLACE FILL IN 6" LIFTS & COMPACT TO 95% RELATIVE COMPACTION. PLANTINGS BY PROJECT BIOLOGIST, NOT A PART OF THIS PLAN.
- SPOILS LOCATION. SCARIFY TOP 6", REMOVE ORGANIC MATERIAL & RECOMPACT TO 90% RELATIVE COMPACTION. PLACE FILL IN 6" LIFTS & COMPACT TO 90% RELATIVE COMPACTION. 2' MAXIMUM FILL DEPTH.

CONSTRUCTION NOTES

C1 CONSTRUCT WETLAND PER ELEVATIONS PER PLAN. PLANTINGS BY PROJECT BIOLOGIST, NOT A PART OF THIS PLAN. — A C3.00

C2 CONSTRUCT WETLAND SWALE PER ELEVATIONS PER PLAN. PLANTINGS BY PROJECT BIOLOGIST, NOT A PART OF THIS PLAN. — B C3.00

C3 CONSTRUCT DETENTION/RETENTION POND PER ELEVATIONS PER PLAN. — C C3.00

C4 VEGETATED BUFFER (BY OTHERS), SEE ELEVATIONS PER PLAN WITHIN GRADED AREAS. PLANTINGS BY PROJECT BIOLOGIST, NOT A PART OF THIS PLAN. — B C3.00

C5 CONFORM TO EXISTING GRADE

C6 INSTALL FLARED END SECTION PER — C C3.01

C7 INSTALL TYPE I 18"x18" STORM DRAIN INLET PER ELEVATIONS PER PLAN — A C3.01

C8 INSTALL TYPE II 18"x18" STORM DRAIN INLET W/ 18"DEPTH 20" V-NOTCH SIDE OPENING PER ELEVATIONS PER PLAN — B C3.01

PROPOSED PARCEL 2
AREA: 4.54 ACRES

PROPOSED PARCEL 1
AREA: 2.63 ACRES

S89°22'13"E 495.23 PROPERTY LINE (TYP)

N 0°55'30"E 205.77 PROPERTY LINE (TYP)

S89°22'13"E 215.00 PROPERTY LINE (TYP)

S 0°54'47"W 301.77 PROPERTY LINE (TYP)

N89°22'13"W 710.34 MARTIN ROAD

EXISTING HARDWARE STORE

EXISTING PARKING LOT

EXISTING BARN

APN 510-081-001

APN 510-081-002

EXISTING GRADE (TYP)

FINISHED GRADE (TYP)

LIMITS OF GRADING (TYP)

GRADE TO PROVIDE POSITIVE DRAINAGE TOWARDS PROPOSED WETLAND (TYP)

FUTURE PROPERTY LINE UNDER APPROVED LOT LINE ADJUSTMENT

EXISTING PROPERTY LINE TO BE REMOVED UNDER APPROVED LOT LINE ADJUSTMENT

DETENTION/RETENTION POND BOTTOM 110.98

INSTALL (P) 18"x18" DI TG 113.00 20' V-NOTCH SO 111.50(N) CONNECT TO (E) 12" SD INV (OUT) 111.25± (VERIFY)

(P)12" HDPE SD-10 LF S=0.0050(MIN)

0 30 15 0 30 60
1 IN. = 30 FT.

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BLACK DOG PARTNERSHIP
WETLAND MITIGATION GRADING & DRAINAGE PLAN
2725 CENTRAL AVENUE
McKINLEYVILLE, CA 95519

GRADING & DRAINAGE PLAN

REGISTERED PROFESSIONAL ENGINEER CHAD M. FOSTER No. 59863 Exp. 12-31-2022 CIVIL STATE OF CALIFORNIA

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DATE	November 30, 2021
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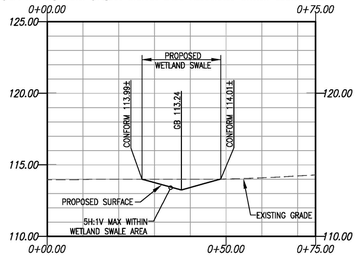
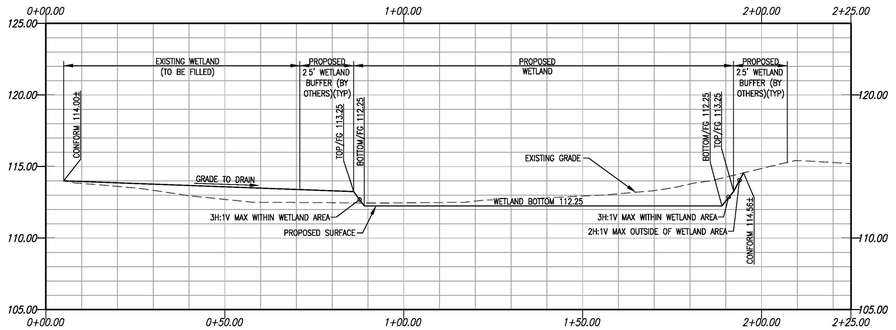
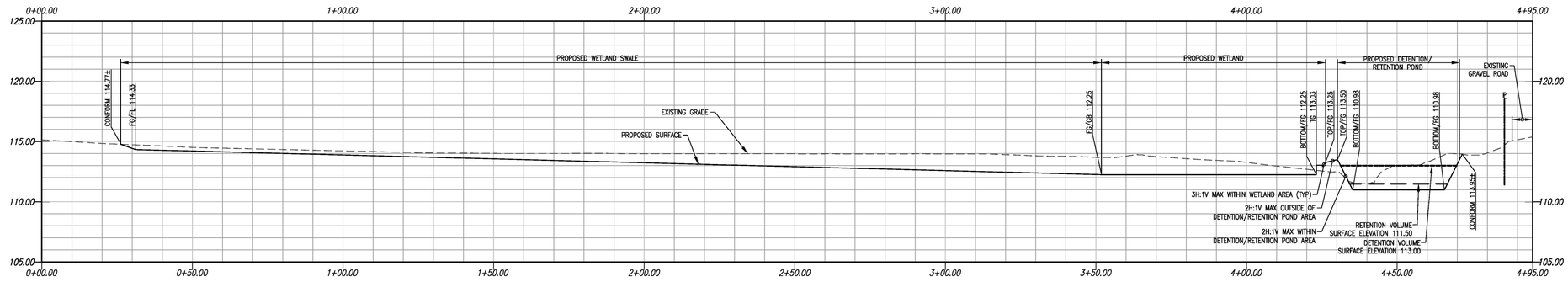


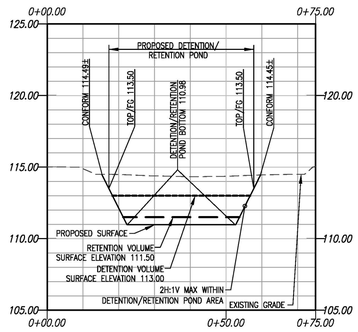
SECTION A–A
HORIZONTAL: 1" = 20'
VERTICAL: 1" = 5'



SECTION B–B
HORIZONTAL: 1" = 20'
VERTICAL: 1" = 5'



SECTION C–C
HORIZONTAL: 1" = 20'
VERTICAL: 1" = 5'



SECTION D–D
HORIZONTAL: 1" = 20'
VERTICAL: 1" = 5'

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BLACK DOG PARTNERSHIP
WETLAND MITIGATION GRADING & DRAINAGE PLAN
2725 CENTRAL AVENUE
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GRADING SECTIONS

REGISTERED PROFESSIONAL ENGINEER CHAD M. WOSTER No. 59863 Exp. 12-31-2023 CIVIL STATE OF CALIFORNIA

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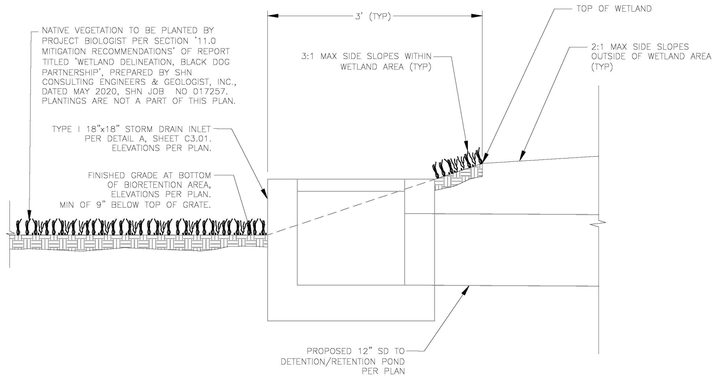
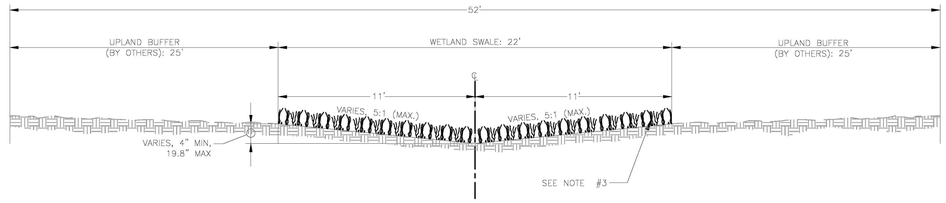


A WETLAND DETAIL
NOT TO SCALE



NOTE:
1. LONGITUDINAL SLOPE VARIES PER PLAN – 0.65% MIN.
2. GRADING LIMITS AT EXTENTS OF WETLAND SWALE.
3. PLANTINGS WITHIN UPLAND BUFFER & NATIVE VEGETATION WITHIN WETLAND SWALE TO BE PLANTED BY PROJECT BIOLOGIST PER REPORT TITLED 'WETLAND DELINEATION, BLACK DOG PARTNERSHIP', PREPARED BY SHN CONSULTING ENGINEERS & GEOLOGIST, INC., DATED MAY 2020, SHN JOB NO 017257. PLANTINGS ARE NOT A PART OF THIS PLAN.
4. UPLAND BUFFER & WETLAND SWALE SPECIFICATIONS PER "WETLAND DELINEATION, BLACK DOG PARTNERSHIP" REPORT LISTED ABOVE IN NOTE 3.
5. ELEVATIONS PER PLAN.

TYPICAL SECTION

B WETLAND SWALE DETAIL
NOT TO SCALE

C DETENTION/RETENTION POND DETAIL
NOT TO SCALE

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BLACK DOG PARTNERSHIP
WETLAND MITIGATION GRADING & DRAINAGE PLAN
2725 CENTRAL AVENUE
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CONSTRUCTION DETAILS

REGISTERED PROFESSIONAL ENGINEER C. MOSIER No. 39863 Exp. 12-31-2023 CIVIL STATE OF CALIFORNIA

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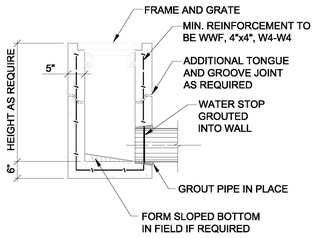
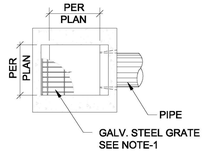
TYPICAL SECTION



PLAN

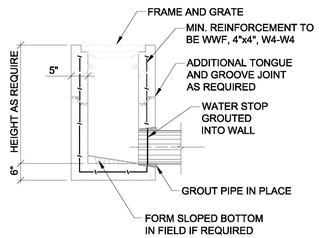


NOTES:

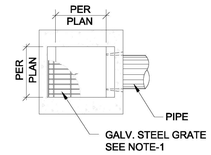
1. FRAME AND GRATES SHALL BE HEAVY DUTY FOR H20 TRAFFIC LOADING.
2. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 4000 PSI IN 28 DAYS.

A TYPE I STORM DRAIN INLET DETAIL
NOT TO SCALE

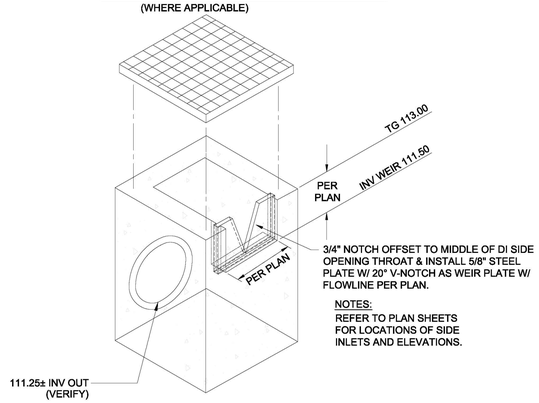
TYPICAL SECTION



PLAN



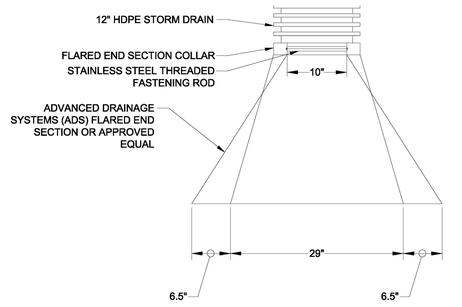
ISOMETRIC (WITH SIDE OPENING & WEIR PLATE)
(WHERE APPLICABLE)



NOTES:

1. FRAME AND GRATES SHALL BE HEAVY DUTY FOR H20 TRAFFIC LOADING.
2. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 4000 PSI IN 28 DAYS.

B TYPE II STORM DRAIN INLET DETAIL
NOT TO SCALE



C FLARED END SECTION DETAIL
NOT TO SCALE

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BLACK DOG PARTNERSHIP
WETLAND MITIGATION GRADING & DRAINAGE PLAN
2725 CENTRAL AVENUE
McKINLEYVILLE, CA 95519

CONSTRUCTION DETAILS

REGISTERED PROFESSIONAL ENGINEER C. MOSIER No. 39863 Exp. 12-31-2023 CIVIL STATE OF CALIFORNIA

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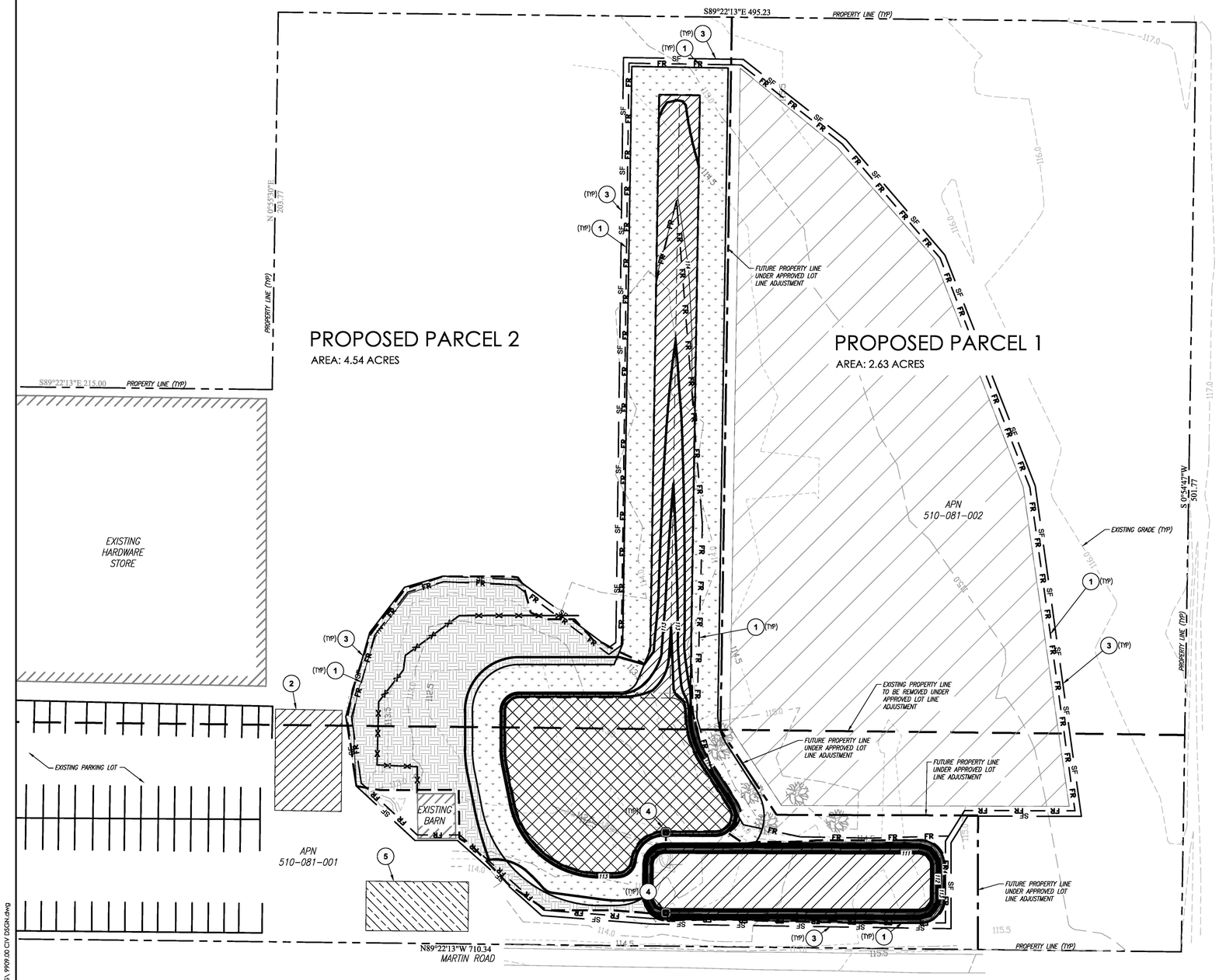

EROSION AND SEDIMENT CONTROL NOTES

1. SE-5 TYPICAL FIBER ROLE PER — 1 / 4.01
2. PROVIDE CONSTRUCTION ENTRANCE PER — 2 / 4.01
3. PROVIDE SE-1 SILT FENCE PER — 3 / 4.01
4. PROVIDE DROP INLET PROTECTION PER — 4 / 4.01
5. PROVIDE TEMPORARY STOCKPILE MANAGEMENT AREA PER WM-3 OF 2003 CASQA BMP HANDBOOK FOR CONSTRUCTION

LEGEND

- TEMPORARY STOCKPILE MANAGEMENT AREA PER WM-3 OF 2003 CASQA BMP HANDBOOK FOR CONSTRUCTION
- DROP INLET PROTECTION
- CONSTRUCTION ENTRANCE
- SPOILS LOCATION. STRAW WATTLES TO BE PLACED ALONG PATHS OF CONCENTRATED FLOW AND ALONG CONTOUR UTILIZING FIBER ROLL PER DETAIL 1, SHEET C4.01 WHERE SPOILS ARE PLACED.
- SF — SILT FENCE
- FR — FR — FIBER ROLL
- (2) — REFER TO EROSION AND SEDIMENT CONTROL NOTE

NOTES:
1. CHECK DAMS TO BE INSTALLED ALONG PATHS OF CONCENTRATED FLOW UTILIZING FIBER ROLL PER DETAIL 1, SHEET C4.01.

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NO.	HISTORY / REVISION	BY	CHK.	DATE

BLACK DOG PARTNERSHIP
WETLAND MITIGATION GRADING & DRAINAGE PLAN
2725 CENTRAL AVENUE
McKINLEYVILLE, CA 95519

EROSION & SEDIMENT CONTROL PLAN

REGISTERED PROFESSIONAL ENGINEER CHAD C. MOSIER No. 39863 Exp. 12-31-2023 CIVIL STATE OF CALIFORNIA

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DATE	November 30, 2021
JOB NUMBER	9909.00
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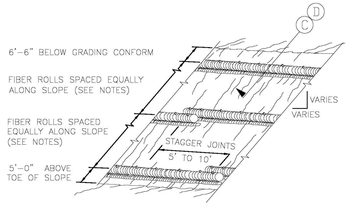
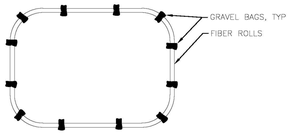
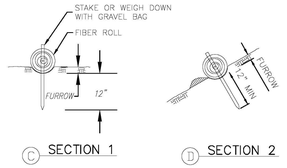


PERSPECTIVE

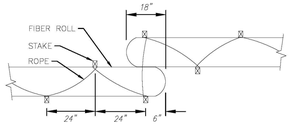
A FIBER ROLL (TYPE 1)



B TYPICAL FIBER ROLL AT PROTECTED AREA DETAIL

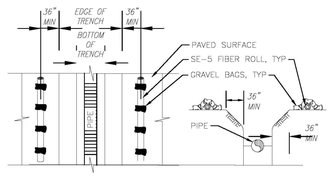


C SECTION 1 D SECTION 2



PLAN

E JUTE TYPE TWINE INSTALLATION



F TYPICAL FIBER ROLL AT TRENCH DETAIL

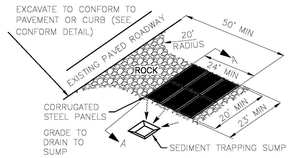
NOTES:

1. FIBER ROLL SPACING VARIES DEPENDING UPON SLOPE INCLINATION, BUT NOT TO EXCEED 10 FOOT AS MEASURED ALONG THE SLOPE INCLINATION.
2. INSTALLATIONS SHOWN IN THE PERSPECTIVES ARE FOR SLOPE INCLINATION OF 10:1 AND STEEPER.
3. IF TRENCHING WORK IS TO PROCEED IN A PIECE-MEAL FASHION, SECTION BY SECTION, BMP'S ARE ONLY REQUIRED AROUND THOSE SECTIONS OF OPEN TRENCHING.

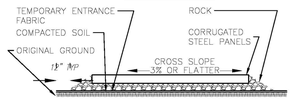
1 SE-5 TYPICAL FIBER ROLL INSTALLATION DETAIL

NOT TO SCALE

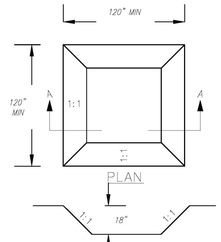
SE = SEDIMENT CONTROL PER CASQA (TYP)



PERSPECTIVE



SECTION A-A

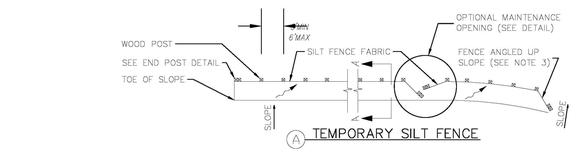


PLAN

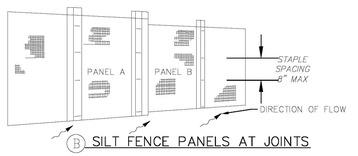
ELEVATION
SEDIMENT TRAPPING SUMP

2 CONSTRUCTION ENTRANCE

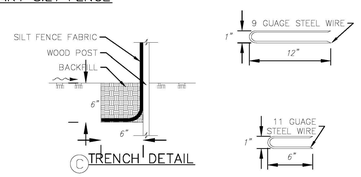
NOT TO SCALE



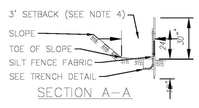
A TEMPORARY SILT FENCE



B SILT FENCE PANELS AT JOINTS



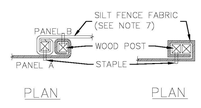
C TRENCH DETAIL



D TEMPORARY SILT FENCE



E STAPLE DETAIL (SEE NOTE 8)



F POST AT JOINTS

PLAN

C END POST DETAIL

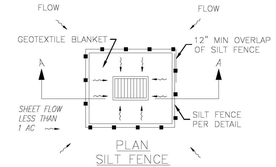
NOTES:

1. INSTALL TEMPORARY SILT FENCE BY FIRST DIGGING TRENCH, DRIVING POSTS, PLACING AND SECURING FABRIC. THEN BACKFILL AND TAMP.
2. REACH LENGTH NOT TO EXCEED 500 FEET.
3. THE DOWN STREAM END OF THE TEMPORARY SILT FENCE SHALL HAVE THE LAST 8' ANGLED UP SLOPE.
4. SETBACK DIMENSIONS MAY VARY TO FIT FIELD CONDITIONS.
5. POSTS TO OVERLAP AND FENCE FABRIC TO FOLD AROUND EACH POST ONE FULL TURN. SECURE FABRIC WITH 4 STAPLES FOR EACH POST.
6. POSTS SHALL BE DRIVEN TIGHTLY TOGETHER TO PREVENT POTENTIAL FLOW-THROUGH OF SEDIMENT AT THE JOINT. THE TOPS OF THE POSTS SHALL BE SECURED TO EACH OTHER WITH WIRE.
7. FOR EACH END POST, FENCE FABRIC SHALL BE FOLDED AROUND TWO POSTS ONE FULL TURN AND SECURED WITH 4 STAPLES.
8. MINIMUM OF 4 STAPLES SHALL BE INSTALLED PER POST. DIMENSIONS SHOWN ARE TYPICAL.
9. MAINTENANCE OPENINGS SHALL BE CONSTRUCTED IN A MANNER TO ENSURE THAT SEDIMENT IS RETAINED BY THE TEMPORARY SILT FENCE.
10. JOINT SECTIONS SHALL NOT BE PLACED AT SUMP LOCATIONS.

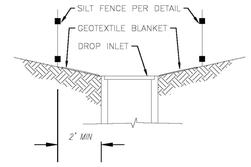
3 SE-1 SILT FENCE DETAIL

NOT TO SCALE

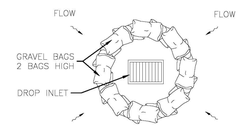
SE = SEDIMENT CONTROL PER CASQA (TYP)



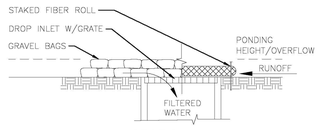
PLAN
SILT FENCE



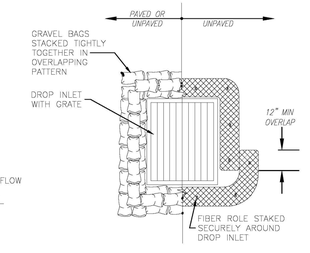
SECTION A-A



PLAN
GRAVEL BAG BARRIER



SECTION
FIBER ROLL/GRAVEL BAG FILTER



PLAN VIEW
FIBER ROLL/GRAVEL BAG FILTER

NOTES:

1. FOR USE IN ARGRADING HAS BEEN COMPLETED AND FINAL SOIL STABILIZATION AND SEEDING ARE PENDING.
2. NOT APPLICABLE WITH CONCENTRATED FLOWS.

NOTES:

3. IMPLEMENTATION, SPECIFICATIONS, AND MAINTENANCE PER CASQA BMP HANDBOOK STANDARD SE-10.
4. THE TOP OF THE STRUCTURE (PONDING HEIGHT) MUST BE WELL BELOW THE GROUND ELEVATION DOWNSLOPE TO PREVENT RUNOFF FROM BYPASSING THE INLET. A TEMPORARY DIKE MAY BE NECESSARY ON THE DOWNSLOPE SIDE OF THE STRUCTURE.

4 DROP INLET PROTECTION

NOT TO SCALE

SE = SEDIMENT CONTROL PER CASQA (TYP)

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EROSION & SEDIMENT CONTROL DETAILS

REGISTERED PROFESSIONAL ENGINEER C. MOSER No. 39863 Exp. 12-31-2023 CIVIL STATE OF CALIFORNIA

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JOB NUMBER	9909.00
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Restoration Report
McKinleyville Ace Hardware
3/03/2016

Introduction:

The parcels located at 2725 Central Avenue, McKinleyville, CA, designated APNs 510-081-001 & -002, were restored, per agency and consultant direction, during the last week of February 2016. This report provides documentation by a third party consultant, Streamline Planning Consultants, that the work agreed upon between the business owner (Owner) and the North Coast Regional Water Quality Control Board (Board) has been completed to the maximum extent feasible, bringing the business into compliance with all applicable stormwater, water quality and wetland regulations.

Background and Site Conditions:

Between the fall of 2014 and the spring of 2015, the Ace Hardware store at 2725 Central Avenue was constructed. During this time, roughly 1,000 ft^2 of gravel was pushed into the westernmost edge of the wetland found around the existing barn. Additionally, the post construction runoff requirements were not met per State or Regional Water Quality Control Board satisfaction. While two bioswales were installed on the western side of the property per Humboldt County Public Works direction, no Post Construction Runoff measures were installed to retain runoff for the eastern watershed. On January 28, 2016, Regional Board staff, California Fish & Wildlife staff and several interested parties met onsite with the owner to discuss and remediate these issues.

Restoration:

Streamline Planning Staff was chosen to perform the calculations and design for this phase of the project with their specialized experience in local wetland delineation and restoration projects, as well as stormwater and LID planning. Hooven & Company, Inc. was the general engineering contractor chosen to perform the work due to their vast experience performing wetland restoration projects around the county. Coordination with Board staff was pursued throughout this process. Physical work was performed during a relatively precipitation-free period during February.

Restoration included removal of fill material within the wetland near the barn (southeast of the Ace store), along with construction of a bioswale between the wetland and the newly developed area (store and parking). The California Water Resources

Control Board's SMARTS Construction General Permit (CGP) Post Construction Water Balance Calculator was used in conjunction with data from As-Built site plans, onsite measurements and design of the new bioswale to update the runoff calculations and bring the project into compliance with the CGP. During design of the bioswale, the swale was made larger than originally planned to accommodate roof runoff from the southeast downspout. A new drain line was installed, which allows roof runoff to bypass the gravel driveway by running underneath the driveway and directly into the swale where it can be treated before reaching the wetland. The swale now catches a majority of the runoff from the eastern portion of the development.

The swale was created as an approximate 1,000 ft^2 area to retain and infiltrate stormwater before reaching the wetland. A mini-excavator was used to minimize soil compaction during construction. Barenbrug's Horsemaster seed mix was used, since this mixture is composed of grass species found naturalized throughout McKinleyville. Both parcels on this site have been used for horse grazing for years, with the remaining undeveloped area still under this use. These pasture species germinate relatively quickly but provide the superior soil-building and stormwater treating capability of perennial grasses. Such grasses can handle both drought and wet conditions once established.

Additionally, per Regional Board instruction, an approximate one-foot-high berm, covering approximately 45 square feet, was created from the northern end of the bioswale, extending north along the outside of the western perimeter of the wetland. This berm was sown with grass seed and covered with straw mulch in similar fashion to the bioswale. A shallow swale was scraped along the western side of this berm to capture stormwater and direct it to the swale, which protects the wetland.

Photographs documenting the work follow this discussion.

Conclusions and Recommendations:

Immediately after construction of the bioswale, an approximate quarter inch rain event occurred. The bioswale remained intact, with both the berm and drain inlet systems functioning properly. The swale captured the runoff, where it was allowed to infiltrate and evaporate. Because of the slow velocities, the straw mulch remained in place, where it will protect the seed and aid in germination. As the seed germinates and matures, treatment function will continue to improve.

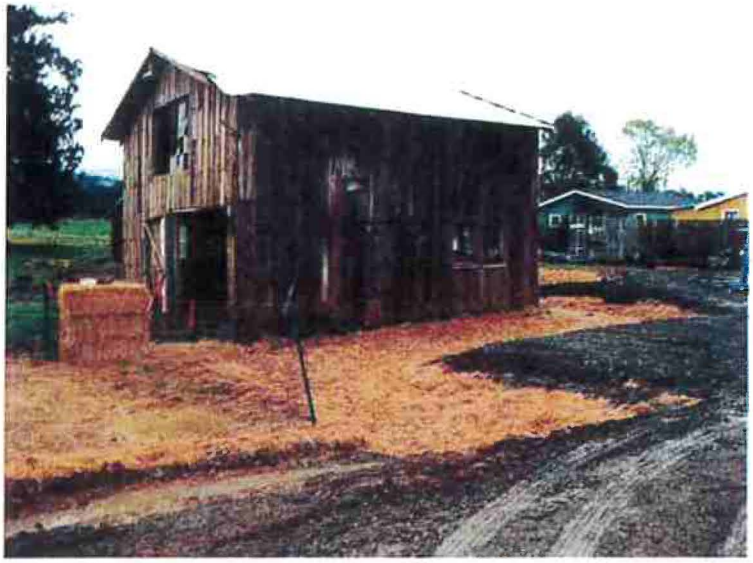
Photographs



Photo 1. Final Restoration: Restoration area looking south, southeast. Majority of foreground is wetland fill removal area with straw mulch removed, leaving only a light dusting straw stuck to the wet soil surface. Note straw-covered berm on right side running north to south, directing runoff to the swale. Bioswale can be seen on right of barn.



Photo 2. Inlet on northwest, upslope end of bioswale. Note straw remaining in place, as well as small swale running from north to south along protective berm, where it enters the bioswale just north of the inlet pipe from roof runoff.



Photos 3. Photo showing entire length of bioswale, as well as depressed, horizontal profile. Note S-curve shape of swale to increase flow length and tortuosity. Small berm and swale can be seen along bottom left corner of photo. Swale ends on far side of barn, between barn and greenhouse in background.

Streamline Planning Consultants

• PLANNING • PERMITTING • ENVIRONMENTAL CONSULTING

Wetland Delineation

2725 Central Avenue
McKinleyville, Humboldt County, CA
APNs: 510-081-001 & -002

September 24, 2014



Typical winter sky seen at dusk over Humboldt County.

Completed for:

Kevin Jenkins
2197 Central Avenue
McKinleyville, CA 95519

STREAMLINE PLANNING CONSULTANTS
www.streamlineplanning.net 1062 G St. Suite I, Arcata, CA 95521 Ph (707) 822-5785 Fax (707) 822-5786

Wetland Delineation Preparer's Certification

Project Name: 2725 Central Avenue Wetland Delineation

Project Phase: Pre-development

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete."

Preparer's Signature: Sam Polly Date: 9-24-14

Preparer's Name: Sam Polly Telephone Number: (707) 822-5785
Preparer's Title: Stormwater Specialist, CPESC #5926, QSD/P #00316
Preparer's Training: 38 Hour Army Corps of Engineers Wetland Delineation Training Program
Soil Science 363, Wetland Soils, Humboldt State University, Spring 2012
B.S. Soil Science, Cal Poly San Luis Obispo, 1996

Preparer's Organization: Streamline Planning Consultants

1. INTRODUCTION

The property found at 2725 Central Avenue was investigated to determine the boundary of the legal wetland near the barn in the central portion of APN 500-152-003, which is the southern of the two parcels on this property. This document contains a detailed wetland delineation report for development permitting purposes, to determine the extent of feasible development in the southwest portion of the property. The report includes a legally delineated wetland boundary for the obvious depressional wetland located north and east of the barn. The site-specific assessment for this report was performed by Streamline Planning Consultants on December 4 and 10, 2013. This delineation included thorough site evaluation using the Army Corps three parameters of hydrophytic vegetation, wetland hydrology and hydric soils. This site lies within County of Humboldt jurisdiction, but outside of the Coastal Zone. The County of Humboldt deems areas meeting all of the three Corps parameters as wetlands. Table 1, Section 4 (below), lists which of these parameters were met at each assessment location.

2. METHODS

On December 4, 2013, Streamline Staff traversed the site within, and adjacent to, the clear depressional wetland seeking potential wetland areas. This assessment was conducted by looking for the criteria of geomorphic depressions and hydrophytic vegetation. One wetland was found north and east of the barn in assessor parcel numbers 51008101 and 51008102 (Attachment 1). This wetland consists of an unevenly-shaped depressional area. A linear ditch feature that would be considered a wetland by government agencies extends northwest from the main wetland. This feature was not delineated since it lies in the northern parcel, away from the southwestern corner of the property being examined for development potential. Additionally, this ditch lies over 50 feet from the proposed boundary of development.

This delineation was performed on December 4 and December 10, 2013, in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual (Technical Report 87-1) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountain Valleys, and Coast Region. At each sample site, the vegetation was surveyed and analyzed using the rapid or dominance test, with the 2013 Regional Wetland Plant List (Lichvar 2013) used to determine wetland indicator status. Wetland hydrology and hydric soil indicators were then assessed. A 24 inch-deep hole was dug and soils were examined for matrix (base) color and redox (reduction/oxidation reaction) color using the Munsell Soil Color Charts (Munsell Color 2000). Redox characteristics, texture, horizon depth, saturation depth and water table depth were also examined. Field observations were recorded on the Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Western Mountain Valleys, and Coast Region data sheets (Attachment 2).

On June 26, 2014, a final site visit was made to examine any plants that might have been dormant during the rainy-season examinations, and to identify a grass species that was unidentifiable during winter. This examination was made to verify the original conclusions regarding hydrophytic vegetation. With the exception of a non-dominant *Carex* species, this final visit provided the identifiable features required to identify and quantify several dominant species. No new conclusions within the wetland

were derived from this information since the original visits revealed adequate numbers of hydrophytic species, although a more complete plant list was derived.

A total of four primary pits were dug and described across a site transect to characterize and differentiate what appeared to be upland and wetland areas (Attachment 1). Pit 1 was dug to ascertain the presence of hydric soils in the apparent wetland area. Pit 2 was dug in the obvious upland area to characterize the upland soils and for comparison to the wetland soils. Pits 3 and 4 were dug in areas where wetland vegetation appeared to be lacking but depressions indicated the potential for wetland conditions to be present. Pits 3 and 4 lie at elevations above Pit 1.

3. LIMITATIONS

There are problems associated with all three wetland parameters, which can give a false positive indication of wetland presence. Conversely, sometimes one or two of the parameters are not met when a site is an obvious wetland. These facts often leave an experienced professional with using best judgment to determine if a wetland is present.

As seen on the Davison Ranch north of Orick, purchased by Redwood National and State Parks, the hydrophytic vegetation parameter is often misleading in coastal Humboldt County. In some cases, obligate species (those requiring wetland conditions) are found dominating upland areas (Popenoe 1996). Plants listed as facultative (found in wetlands 34-66% of the time) are often more typical of upland areas on the coast. Two examples of this occurrence include *Festuca (Lolium) perenne* (Italian ryegrass) and *Holcus lanatus* (velvet grass). Moderate temperatures and regular heavy fog and stratus layers combine with relatively high annual rainfall to create an environment favorable for wetland indicator species to grow where wetland hydrology and hydric soils do not exist. The lack of these parameters is due to the absence of seven consecutive days of inundation, during five out of ten years, that is required to meet the Natural Resources Conservation Service definition of a wetland.

Another problem with plants is that it is difficult to determine the species, and sometimes even the genus, if plants have been grazed, mowed or they are examined outside of the blooming season. A number of grass and grass-like species look very similar and require seed heads for proper identification.

4. RESULTS AND DISCUSSION

Table 1 outlines the results of the three parameters for each of the four pits examined on this site. Pits 1 and 4 lie in the three parameter wetland. Pit 3 is right on the edge of the wetland. The soil in this pit is right at the transition between hydric and non-hydric conditions. Although a dry-season water table is lacking at this pit, it is highly likely that the hydric soil at this pit is due to subsurface hydrology existing for at least seven consecutive days during five out of ten years. All four pits met the hydrophytic vegetation parameter. Pits 3, 4 and 1 had at least one obligate species indicating these locations lie within the wetland. However, Pit 2 contains facultative species that dominate upland areas on the coast. As described above, hydrophytic vegetation is a very misleading parameter in coastal areas. Only when combined with the other two parameters is a clear picture of wetland presence formed.

Table 1. Summary of Parameters Met at Each Sample Point				
Sample Point	Hydrophytic Vegetation	Hydric Soil	Wetland Hydrology	Jurisdictional Wetland
#1	√	√	√	√
#2	√			
#3	√	√	Assumed	Assumed
#4	√	√	√	√

Pit 3 showed no wetland hydrology indicators during any of the site visits. Lying at the edge of the wetland depression with hydric soils and the obligate specie *Alopecurus geniculatus*, it was assumed that this pit has adequate saturation of sufficient duration to allow for these hydric soil and hydrophytic vegetation parameters to be met, so "Other" was checked under hydrology with the assumption of Saturation (A3) based on field experience and site observation. It was notable, however, that *Juncus xiphoides* and the *Carex spp*. phase out between Pits 3 and 4, and Pit 4 had a water table at 21.5 inches. Pit 3 did not have a water table within the upper 26.4 inches, showing that Pit 3 is on the edge of the wetland when compared with Pits 4 and 1 which had subsurface water and an additional dominance of the obligate *Juncus xiphoides*.

The barn was found standing in water on December 19, 2006. While this may be a periodic occurrence during extreme high water events, the barn sits on an elevated bench above the 3-parameter wetland. Concentrated animal traffic around the barn has led to depressed and compacted soils which likely lead to water remaining around the barn.

This wetland has clearly formed as a result of historical human disturbance. From hydrologic disturbance uphill (north), to the installation of an elevated road and drainage system below the wetland (south), this depression is not providing significant animal habitat. As observed during heavy rain events during February and March of 2014, water drains from the site much too quickly to support animals such as amphibians, insects or birds. The wetland is, however, providing a useful site to capture stormwater runoff from surrounding development and supports hydrophytic vegetation. The healthy topsoil and plant system can filter and treat pollutants while adding to the aesthetic value of the project. While a large buffer would not be useful for this site due to the lack of wildlife habitat, protecting the wetland for stormwater retention and treatment is important. The land owner wishes to maintain more than the county-required 25-foot setback to protect these properties, which leaves an approximate 42-foot buffer.

The Army Corps data sheets ask for NWI (National Wetlands Inventory) classification. While the area examined in this investigation did not have an NWI classification, it was discovered that a significant portion of APN 51008102 has been mapped as freshwater emergent wetland. These maps are often

created using aerial photography rather than site-specific field analysis. Processes such as livestock trampling or even vegetation growth can appear to be wetlands. No wetland was observed on the NWI-designated area except a linear drainage ditch running northwest to southeast. This NWI designated area will need to be delineated before any development can occur within that space to clear it from wetland designation.

Current County Zoning Regulations Section 314-61.1 calls for a 25-foot buffer between intermittent streams and development within an Urban Development and Expansion Area. Wetlands and similar areas considered environmentally sensitive habitat are included under this Streamside Management Area Ordinance. Since this wetland seldom contains surface water (is intermittent) and lies within and urban development area, it falls under the 25-foot buffer area requirement. The edge of the proposed development, comprised of a parking lot, will leave 41.25 feet of buffer area between the wetland boundary and the development boundary. Attachment 3 shows the wetland boundary and a fifty-foot buffer in relation to the existing barn and the proposed development.

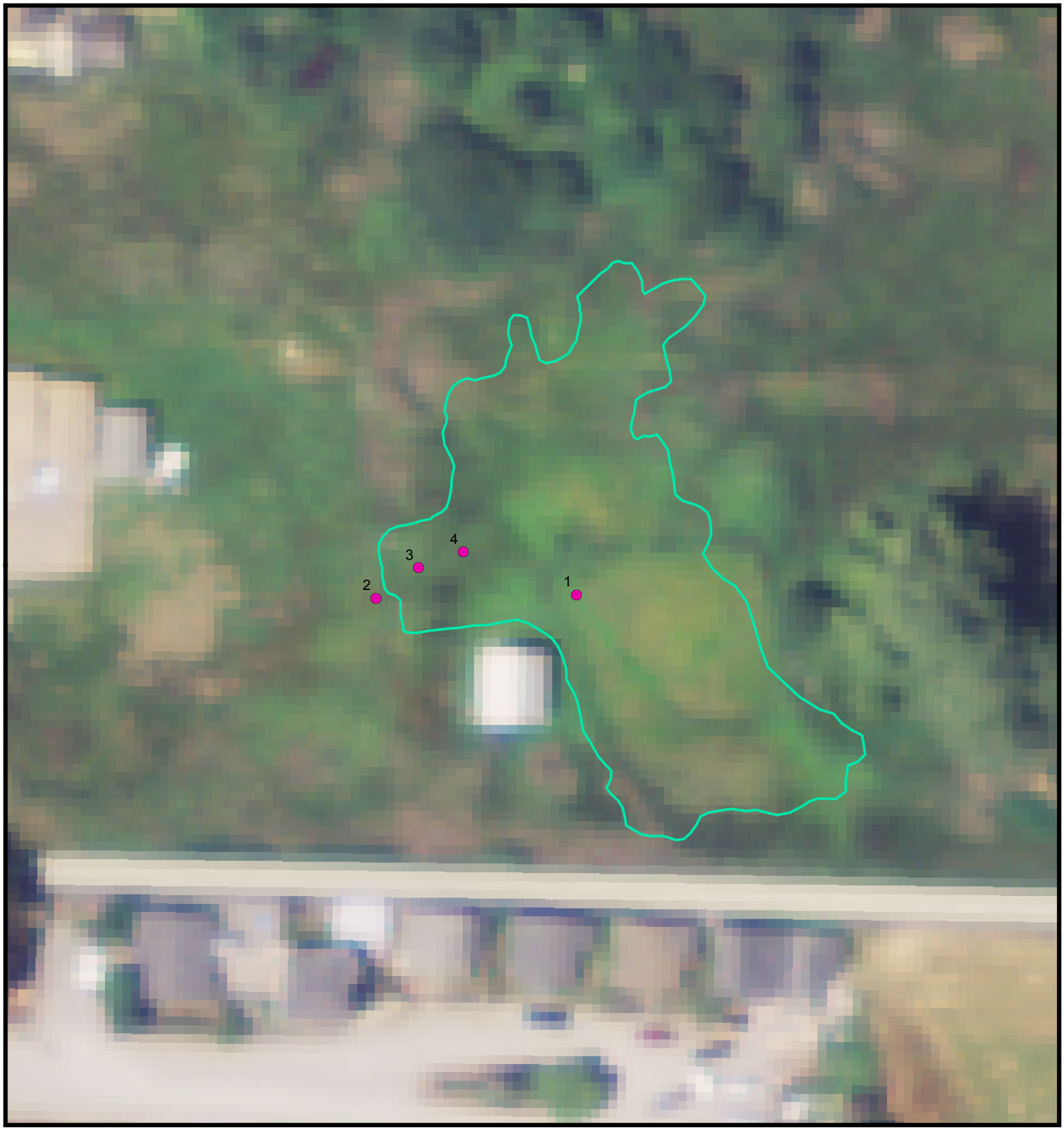
During the final June 26, 2014 site visit, additional hydrophytic vegetation was found to the east and northeast of the wetland mapped in this delineation. This additional area of hydrophytic vegetation was flagged but a problem occurred with the survey so the map was not updated. Since this area lies on the opposite side of the wetland from the proposed development, this omission has no bearing on the current project. The map will need to be updated if future development is planned north or east of the currently mapped wetland.

5. CONCLUSION

One jurisdictional wetland was found wrapping around the northern and eastern sides of the barn. This wetland is easily located in the field by the difference in vegetation and the depressional position. The boundary determination, however, required soil pit analysis. Pit inspections confirmed the presence of wetland parameters throughout this wetland. With 41.25 feet of buffer between the western wetland boundary and development, this wetland will be thoroughly protected from the impacts of development and exceed current county requirements for wetland protection. Furthermore, directing stormwater runoff from development into the wetland will increase the water charging of this wetland, accenting the established native wetland plants growing onsite, while treating runoff before it discharges from the parcel.

ATTACHMENTS

ATTACHMENT 1: Wetland Map
ATTACHMENT 2: Field Data Sheets
ATTACHMENT 3: Site Plan



Pit Locations

Wetland Boundary

N

Map for display purposes only.
Caldwell 12/10/2013
Datum: NAD83 CA FIPS 1

ATTACHMENT 1

Jenkins Project
Wetland Delineation
2725 Central Avenue
McKinleyville, CA 95519

1 " = 50 ft

0 25 50

www.streamlineplanning.net
Streamline Planning Consultants
1062 G St. Suite I
Arcata, CA 95521
Tel: (707) 822-5785
Fax: (707) 822-5786

ATTACHMENT 2. Data Sheets

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

updated 6-24-13

Project/Site: 36.5 NE of NE barn corner Martin Ranch, W. of; APN 51008101 City/County: McKinleyville Sampling Date: 12-4-13

Applicant/Owner: Ryan Carlson State: CA Sampling Point: 1

Investigator(s): Sam Polly Section, Township, Range: NW ¼, NW ¼ Sec 32, T7N, R1E HBM

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A Lat: 40.9546° Long: -124.0996° Datum: WGS 84

Soil Map Unit Name: _____ NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✓ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks: Drought ~ 50% rainfall for year & since Jul 1 0.21/1.09 = 0.20 for Dec | ~ 116' elevation
Grazed
Abnormal conditions caused by hydrologic changes (anthropogenic) w/ built-up roadway

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Carex	4		
2. Alopecurus geniculatus rabbitfoot grass	40	✓	OBL
3. Juncus xiphioides iris leaf rush	40	✓	OBL
4. Argentina anserina silverweed	40	✓	OBL
5. Ranunculus repens buttercup	2		FAC
6.			
7.			
8.			
9.			
10.			
11.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

ATTACHMENT 2. Data Sheets

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15.5	10YR 2/1	100					M. Loam	↑ Om
15.5-17	10YR 3/2	100					L. Sand	
17-24+	10YR 5/2	88	7.5YR 4/6	12	C	M	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✓ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✓ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ✓ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ✓ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): 21"

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): 15.5"

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: ~~C2 based on drought conditions~~; water table not present for A2 but makes C2; Saturation does'nt make A3; can be assumed based on veg Drawing labeled Parcel 2 shows surface water on Dec 19, 2006

ATTACHMENT 2. Data Sheets

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 47' NW of NW Barn Corner W. of Martin Ranch; APN 5100810 City/County: _____ Sampling Date: 6-26-14

Applicant/Owner: _____ State: _____ Sampling Point: 2

Investigator(s): _____ Section, Township, Range: _____

Landform (hillslope, terrace, etc.): marine terrace Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✓ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✓

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____ No ✓	
Wetland Hydrology Present?	Yes _____ No ✓	

Remarks: Drought ~50% normal rainfall; grazed
Anthropogenic hydrologic changes—road dammed S. end of pasture; artificial drainage structure bottle necks water

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Rumex crispus	2		FAC
2. Rubus ursinus	1		FACU
3. Ranunculus repens	35	✓	FAC
4. Holcus lanatus	35	✓	↓
5. Lolium perenne	2		↓
6. Lotus corniculatus	35	✓	↓
7.			
8.			
9.			
10.			
11.			
	110 = Total Cover		55/22
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: Lack of hydric soils + wetland hydrology + visual convex elevated position indicate upland; vegetation changes from OBL in depressional wetland to FAC species found in nearby sandy loam uplands at this pit + to the west

ATTACHMENT 2. Data Sheets

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-17	10YR 2/1	100					Loam	
17-20.5	2.5Y 4/3	80	7.5YR 5/8	18			Clay Loam	
~~20.5-26.5+~~			10YR 3/2	2				Krotovinas (gopher) @ 2.1'
20.5-26.5+	10YR 5/8	100					CL	30% clay, 30% sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Convex upland; highest point portion of area between barn & shed

ATTACHMENT 2. Data Sheets

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

updated 12-26-14

Project/Site: Martin Ranch, West of; APN 51008101 (42' NW of NW barn corner) City/County: _____ Sampling Date: 12-4-13

Applicant/Owner: Ryan Carson State: _____ Sampling Point: 3

Investigator(s): _____ Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✓ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ✓

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No X	

Remarks:
drought this pit is right on the boundary of the actual wetland
see sheets 1 & 2 for abnormal hydro circumstances

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Hordeum marinum	30	✓	FAC
2. Ranunculus repens	12		FAC
3. Rumex crispus	4		FAC
4. Alopecurus geniculatus - thick grass	30	✓	OBL
5. Lotus corniculatus forb	20	X	FAC
6. Argentina anserina	20		OBL
7.			
8.			
9.			
10.			
11.			
	96 80 116 = Total Cover		44/16.4 48/19.2 58/23.2
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		
% Bare Ground in Herb Stratum _____			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: X 2 (A)

Total Number of Dominant Species Across All Strata: X 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ✓ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:
upland plants similar to Pit 2, very different from Pit 1, assumed to all be facultative since vegetation @ upland pit #2 met Dominance test; found A. geniculatus in June 2014 which is OBL

ATTACHMENT 2. Data Sheets

SOIL

Sampling Point: 3

feet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-0.9' 0-11	10YR 2/1	100					mucky loam	
0.9-1.8' 11-21.5+	10YR 5/2	80	5YR 3/4	2	C	M	SCL	common - Prom
			10YR 4/6	14	C	M		Common - Prom
1.8-2.2'			10YR 2/2	4			SCL	OM, common - Distinct
21.5-26.4+			10YR 5/6				SCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ✓ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ✓ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Elevation above pits 4&1; Alopecurus geniculatus indicates adequate saturation as do the hydric soils so hydrology assumed @ Pit 3

ATTACHMENT 2. Data Sheets

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 43' N of NW barn corner Marin Ranch, W. of; APN 51008101 City/County: _____ Sampling Date: 12-4-13

Applicant/Owner: Rynearson State: _____ Sampling Point: 4

Investigator(s): _____ Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 1

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✓ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓ No _____	
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks: Drought

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Carex spp. mini seedge/rush	10		
2. Juncus xiphoides olive grass	30	✓	OBL
3. Hypochaeris radicata hairy cats	3		FACU
4. Lotus corniculatus forb	4		FAC
5. Ranunculus repens	10		FAC
6. Rumex crispus	3		FAC
7. Alopecurus geniculatus ~~foxt~~	30	✓	OBL
8. Argentina anserina	25	✓	OBL
9.			
10.			
11.			
	115 ~~90~~ = Total Cover ~~45/18~~ 57.5/23		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		
% Bare Ground in Herb Stratum _____			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: Veg assumed facultative or wetter; more similar to Pit #1 (wetland) very distinctive of Pit 1 w/ dominance of J. xiphoides & A. gen.

ATTACHMENT 2. Data Sheets

SOIL Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

feet
0-1.8
1.8-2.3'
2.3-2.6+

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-21.5	10YR 2/1	100				mucky	Mucky L	
21.5-27.5	10YR 4/1	93	2.5YR 2.5/4	7	C	M	SL	
27.5-31+	10YR 6/1	85	5YR 4/6	15	C	M	sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ✓ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ✓ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ✓ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): 21.5"

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Sat @ 1.8' & below
Water table @ 2.5'
Other = map showing high water line Dec 19, 2006 + drought conditions likely dropped water table

ATTACHMENT 3. Site Plan

PARCEL 2

2005–450565–2
APN: 510–081–002

STRIPE

CENTRAL AVENUE
COUNTY ROAD NO. A4L800

2606.58'

N00°55'30"E

181'

SINGLE STORY RESIDENCE

APN 510–081–003

N89°21'30"W

GARAGE

215'

PL

TR

142'x152'
21,584–SQ. FT.
RETAIL /WAREHOUSE

8' LANDSCAPE STRIP

18' LOADING ZONE

SSMH
RIM=115.21
INV=104.63

14

15

15

18

171'

113.67

50' SETBACK

25' REQUIRED SETBACK

WETLAND BOUNDARY

1

2

3

4

N89°21'30"W

710.55'

BARN

PARCEL 1

2005–450565–2
APN: 510–081–001

N89°21'30"W

710.55'

MARTIN ROAD

GRAVEL ROAD

SINGLE STORY RESIDENCE

SINGLE STORY RESIDENCE

SINGLE STORY RESIDENCE

SINGLE STORY RESIDENCE

SINGLE STORY RESIDENCE

APN 510–071–002

TURN LANE STRIPE

EASOR ROAD

TBM

16" CMP
℄=110.70

CMP 12"±
SIZE UNVERIFIABLE
℄=110.78

PRAIRIE COURT

SITE PLAN
1"=20'-0"

North

1. INTRODUCTION

The property found at 2725 Central Avenue was investigated during 2003/2004 to determine the boundary of the legal wetland near the barn in the central portion of APN 510-081-001, which is the southern of the two parcels on this property. The wetland found during this investigation extends from this barn area into the southern portion of APN 510-081-002. While the focus of the wetland delineation was to identify the boundary of the main wetland area in the barn's vicinity, it was also to show the westernmost boundary in relation to development. While some scattered pockets of wetland exist north of the main wetland found in APN 510-081-002, these pockets are more than 50 feet from the boundary of the proposed development so were not delineated since they were outside of the project area. The remaining question for agency scrutiny is the freshwater emergent wetland mapped on the U.S. Fish & Wildlife Service National Wetlands Inventory (NWI) map. This is the same wetland is shown on the Humboldt County Land Use GIS mapping.

2. LIMITATIONS TO NWI MAPPING

It must be understood that NWI mapping is typically performed using remote sensing. Aerial photographs are studied to identify areas that appear to be wetlands due to varying shades or vegetation. Unfortunately, these photographs are mere snapshots in time, which do not reflect the biologic, topographic or hydrologic nature of an area over time. Patches of vegetation differing in shade or color are easily mistaken for wetlands. Very rarely are these maps accurate. Even when they generally represent a wetland, the boundaries are much different when site specific analysis is performed. Additionally, mapping and GIS errors can be found on such maps. Site specific wetland and soil analysis are always preferred, and often critical to both protect sensitive wetland habitat, as well as to prevent unnecessarily preserving an area that could be good for development (personal communication, 4/13/2012, Jason Outlaw, Resource Soil Scientist, USDA NRCS, Klamath Falls, OR).

3. RESULTS AND CONCLUSION

Only one jurisdictional wetland was found in the vicinity of the proposed development. This wetland wraps around the northern and eastern sides of the barn. This wetland was easily located by the difference in vegetation and the depressional position upon site analysis. Pit inspections confirmed the presence of wetland parameters throughout this wetland. The area mapped on the NWI and County GIS map erroneously designates a large tract of upland as freshwater emergent wetland.

While pockets of wetland exist in the eastern portion of this wetland-mapped area, the entire section of this NWI wetland-mapped area west of a line drawn north from the barn lacks the hydrophytic vegetation, wetland hydrology and soils characteristic of the wetland area delineated during this site specific analysis (see attached NWI map). The western area of this mapping also lacks the depressional topography seen in the wetland, but has an elevated, convex shape. A site visit on September 9, 2014, revealed the wetland depressions around the barn to be green, while the surrounding uplands, including the western portion of the NWI wetland-mapped area, reveal dry season dormancy with characteristic gold-brown grass. This mapping needs to be changed, since site specific analysis reveals

upland soils in the area of the proposed building. The wetland does not exist in this northern portion of the development, but lies to the south and east.

ATTACHMENTS

ATTACHMENT 1: NWI Map

Wetland Adendum Preparer's Certification

Project Name: 2725 Central Avenue Wetland Delineation

Project Phase: Pre-development

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete."

Preparer's Signature: Sam Polly Date: 9-24-14

Preparer's Name: Sam Polly Telephone Number: (707) 822-5785
Preparer's Title: Stormwater Specialist, CPESC #5926, QSD/P #00316
Preparer's Training: 38 Hour Army Corps of Engineers Wetland Delineation Training Program
Soil Science 363, Wetland Soils, Humboldt State University, Spring 2012
B.S. Soil Science, Cal Poly San Luis Obispo, 1996

Preparer's Organization: Streamline Planning Consultants

1. INTRODUCTION

The property found at 2725 Central Avenue was visited by multiple agency and interest representatives on October 10, 2014 to examine the site for current wetland conditions and to discuss the wetland delineation performed by Streamline Planning Consultants. During this site visit, an area at the northeast corner of the proposed development was identified by the California Department of Fish and Wildlife as potential wetland (Site Map, Attachment 1). During the original wetland delineation, this area was behind a fence thought to belong to the neighboring parcel. Since that original delineation, which was finalized in June of 2014, the fence had been moved back and blackberry vines had been mown. This addendum represents the results of a subsequent visit to ascertain if the area in question meets the three wetland parameters required by the Army Corps of Engineers.

2. RESULTS AND DISCUSSION

The area examined on October 14 at the northeast corner of the proposed development was covered with overhead blackberry growth during the original wetland examinations of December 2013 and June 2014. This area had been mowed since June and both Himalayan and California blackberries have re-sprouted, providing approximately 84% cover (Data Sheet, Attachment 2). During the original wetland delineation, there was no indication that any wetland parameters or indicators would be found in this area. With the relatively linear topography, high elevation, and blackberry plants surrounded by pasture grasses contrasting against the silverweed, rushes and sedges in the depressional wetland area, field experience led the consultants to deem this area upland. During the October 2014 site visit, it was discovered that one of the Fish and Wildlife employees had done a wetland delineation on the site in the past when conditions appeared wetter. This led the Fish and Wildlife representatives to this northeastern development corner where they dug down to find redox features below 13 inches.

A lot of activity has occurred around this neighborhood which has likely led to less water accumulating on the site. While analysis found hydric soils with the Thick Dark Surface indicator, both hydrophytic vegetation and wetland hydrology were lacking. The only dominant species in this area was *Rubus ursinus*, with a status of FACU. The hydric soil conditions are apparently relict features from a wetter era in this soil's history. The soil surrounding the examined pit is similar and loses its hydric characteristics as one heads south, so there was no need to dig and examine additional pits.

3. CONCLUSION

The area brought into question during the site visit on October 10, 2014 was examined by Streamline Planning Consultants on October 14, 2014. This examination confirmed what the State Fish and Wildlife examiner surmised during the previous week's visit, that a relict hydric soil indicator is present but hydrophytic vegetation and wetland hydrology are both lacking in this area. This confirms the original wetland delineation conclusion that this northeastern corner of the proposed development is upland, as seen by the elevation, topography and vegetation.

ATTACHMENTS

ATTACHMENT 1: Original Delineation Map with Recent Pit Location
ATTACHMENT 2. Field Data Sheet

Wetland Adendum Preparer's Certification

Project Name: 2725 Central Avenue Wetland Delineation

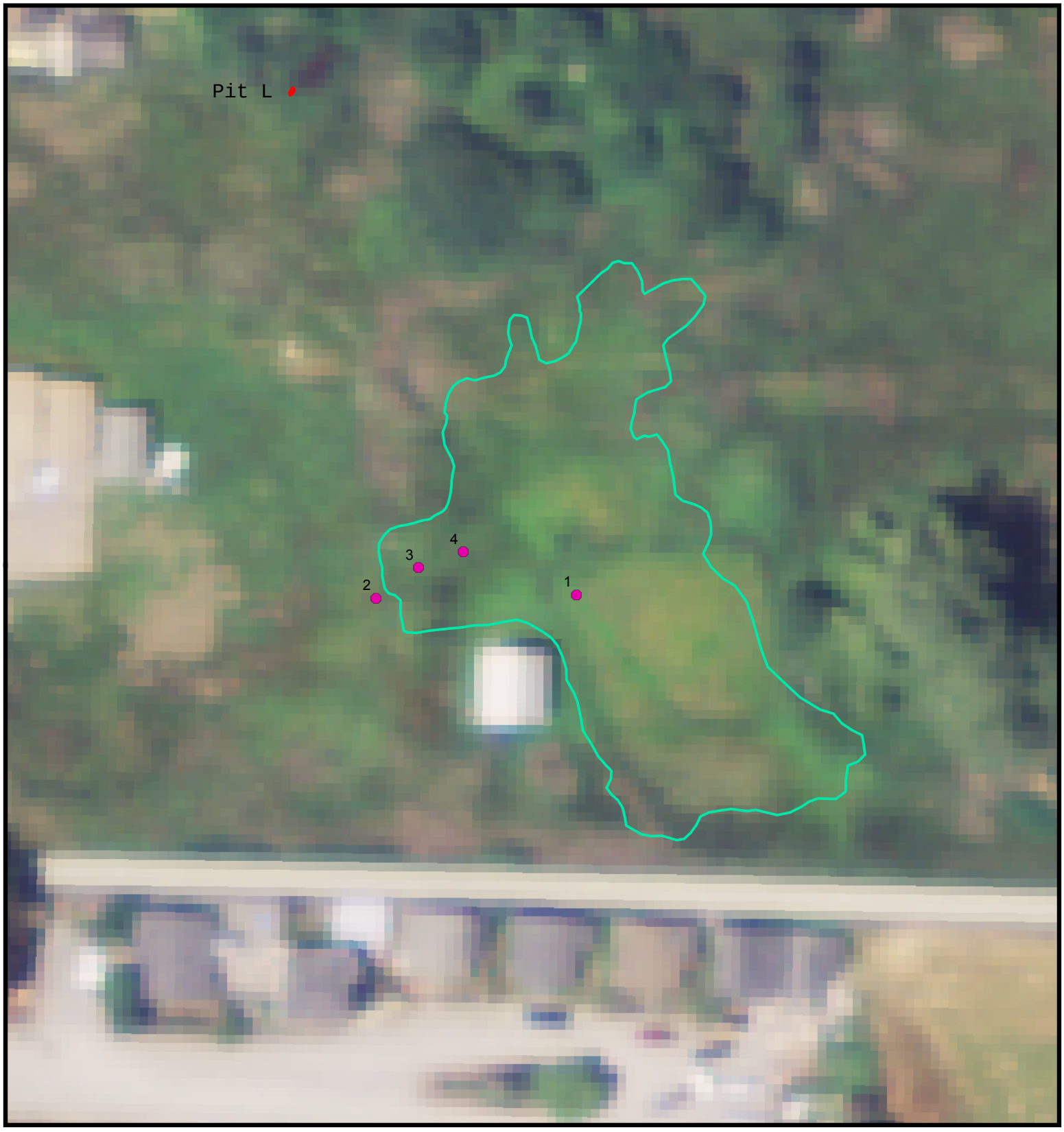
Project Phase: Pre-development

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete."

Preparer's Signature: Sam Polly Date: 10-14-14

Preparer's Name: Sam Polly Telephone Number: (707) 822-5785
Preparer's Title: Stormwater Specialist, CPESC #5926, QSD/P #00316
Preparer's Training: 38 Hour Army Corps of Engineers Wetland Delineation Training Program
Soil Science 363, Wetland Soils, Humboldt State University, Spring 2012
B.S. Soil Science, Cal Poly San Luis Obispo, 1996

Preparer's Organization: Streamline Planning Consultants



Pit Locations

Wetland Boundary

Pit L Location

N

ATTACHMENT 1 - WITH PIT L ADDED

Jenkins Project
Wetland Delineation
2725 Central Avenue
McKinleyville, CA 95519

1 " = 50 ft

0 25 50

Map for display purposes only.
Caldwell 12/10/2013
Datum: NAD83 CA FIPS 1

www.streamlineplanning.net
Streamline Planning Consultants
1062 G St. Suite I
Arcata, CA 95521
Tel: (707) 822-5785
Fax: (707) 822-5786

ATTACHMENT 2. FIELD DATA SHEET

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 2725 Central Ave City/County: McKinleyville Sampling Date: 10-14-14

Applicant/Owner: ~~S. Polly, J. Saler~~ M. Rynearson State: CA Sampling Point: Pit L

Investigator(s): S. Polly, J. Saler Section, Township, Range: NW¼, NW¼ Sec 32, T7N, R1E HBM

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): 3

Subregion (LRR): A Lat: 40.9546 Long: -124.0996 Datum: WGS 84

Soil Map Unit Name: _____ NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ~~✓~~

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: 13.5' South of NE Property corner, 13' NW of SE fencepost, 63' from SE corner of old wood building to the west on parcel to the North
Climate is drought for the year

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. Rubus armeniacus	4		FACU
2. Rubus ursinus	80	✓	FACU
3. Ranunculus repens	5		FAC
4. Sonchus oleraceus sow thistle	1		FACU
5. Geranium molle geranium	1		UPL
6. Medicago lupulina	2		FACU
7.			
8.			
9.			
10.			
11.			
	93 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	87	x 4 =	348
UPL species	1	x 5 =	5
Column Totals:	93 (A)		368 (B)

Prevalence Index = B/A = 3.96

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

SOIL

Sampling Point: Pit L

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 2/1	100	NA				SiL	
13-26	10YR 5/1	70	10YR 4/6	30	C	M	SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ✓ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: undisturbed soil surface with litter

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ✓ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland Delineation

Black Dog Partnership

Assessor's Parcel Numbers 510-081-001 and 510-081-002
McKinleyville, California



Prepared for:

Black Dog Partnership

May 2020
017257

Reference: 017257

Wetland Delineation

Black Dog Partnership

Assessor's Parcel Numbers 510-081-001 and 510-081-002

McKinleyville, California

Prepared for:
Black Dog Partnership

Prepared by:

1062 G St., Suite I
Arcata, CA 95521
707-822-5785

May 2020

QA/QC:SJP/JLS

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Table of Contents

Page

List of Illustrations ii

Abbreviations and Acronyms iii

1.0 Introduction 1
- 1.1 Purpose 1
- 1.2 Project Location 1

2.0 Project Description 1

3.0 Environmental Setting 1
- 3.1 Site Uses 1
- 3.2 Site Hydrology 1
- 3.3 National Wetlands Inventory 3
- 3.4 McKinleyville Community Plan Wetlands Inventory 3

4.0 Vegetation 3

5.0 Geologic and Soil Composition 4

6.0 Regulatory Setting 6
- 6.1 Federal Laws 6
  - 6.1.1 Section 401 and 404 of the Clean Water Act 6
  - 6.1.2 Rivers and Harbors Appropriation Act of 1899 6
- 6.2 State Laws 7
  - 6.2.1 Porter-Cologne Water Quality Control Act 7
- 6.3 County Regulations 7
  - 6.3.1 McKinleyville Community Plan 7

7.0 Methods 7
- 7.1 Vegetation Methods 8
- 7.2 Soils Methods 9
- 7.3 Hydrology Methods 9

8.0 Discussion and Results 9
- 8.1 Upland – No Wetland Parameters 11
- 8.2 Upland – One Wetland Parameter 11
- 8.3 One- to Two-Wetland Parameters 12
- 8.4 Three-Parameter Area 12

9.0 Conclusions 13

10.0 Limitations 15

11.0 Mitigation Recommendations 15

12.0 References Cited 16

Appendices
1. Site Photographs
2. Aerial Photographs
3. National Wetlands Inventory and Humboldt County Web GIS Map
4. Wetland Determination Data Forms

Table of Contents, Continued

List of Illustrations

Figures **Follows Page**

1. Project Location Map 1
2. Wetland Delineation Map 1

Tables **On Page**

1. Wetland Parameters at Each Test Pit 14
2. Wetland Delineation Results 15

Abbreviations and Acronyms

mmhos/cm	millimhos per centimeter
APN	Assessor's parcel number
CA	California Porter-Cologne Water Quality Control Act
CCR	California Code of Regulations
CDEC	California Data Exchange Center
CFR	Code of Federal Regulations
CWA	Clean Water Act
EPA	United States Environmental Protection Agency
ERDC/CRREL	United States Army Engineer Research and Development Center/Cold Regions Research and Engineering Laboratory
FAC	facultative wetland plant species
FACU	facultative-upland plant species
FACW	facultative-wet wetland plant species
GIS	geographic information system
GPS	global positioning system
HCGP	Humboldt County General Plan
Ksat	Capacity of the most limiting layer to transmit water
MCCP	McKinleyville Community Plan
NA	not applicable
NGTOC	National Geospatial Technical Operations Center
NL	not listed wetland plant species
NOAA	National Oceanic and Atmospheric Administration
NR	no reference
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OBL	obligate wetland plant species
PEM1C	Palustrine emergent persistent seasonally flooded wetland
PSS1C	Palustrine scrub/shrub persistent seasonally flooded wetland
Redox	redoximorphic
RL	residential low density
RWQCB	Regional Water Quality Control Board
SWRCB	State Water Resources Control Board
TP	test pit
UPL	upland plant species
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USFWS	United States Fish & Wildlife Service
USGS	United States Geological Survey
WDR	waste discharge requirements
WoS	waters of the State
WoUS	waters of the United States

1.0 Introduction

SHN prepared this wetland delineation for portions of the commercial parcels owned by Black Dog Partnership in McKinleyville, California (Figure 1). The study area encompasses the center of two parcels identified as Humboldt County Assessor's Parcel Numbers (APNs) 510-081-001 and 510-081-002 (site). An existing Ace Hardware store occupies the western portion of the two parcels and undeveloped pasture dominated by mixed herbaceous species comprises the remainder of the site (Figure 2; Appendix 1, Photos 1 and 2). Fieldwork was performed by SHN staff soil scientists and botanists between October 2018 and August 2019.

1.1 Purpose

SHN completed this site investigation and report to delineate potential wetlands and other waters of the United States (WoUS) and State (WoS)as defined by the United States Army Corps of Engineers (USACE) three-parameter methodology. The delineation of these features will assist site design and construction of future development within the study area and avoid impacts to potential jurisdictional wetlands or other wetlands as defined by the McKinleyville Community Plan (MCCP; Humboldt County, 2017).

1.2 Project Location

The project site is located at 2725 Central Avenue in the unincorporated community of McKinleyville, California (Figure 1; United States Geological Survey [USGS] Arcata North 7.5-minute Quadrangle [USGS, 2018]; Township 07 north, Range 01 east, NW quarter of the NW quarter, Section 32, Humboldt Baseline and Meridian). APNs510-081-001 and 510-081-002 encompass an approximate 2.95-acre study area. An unnamed drainage ditch spans a diagonal path from the northwestern corner of the study area toward the southeastern corner.

2.0 Project Description

The property owners propose to expand the current commercial hardware business into the residential-zoned property east of the existing building. The study area for this report lies directly east of the existing hardware store (Figure 2).

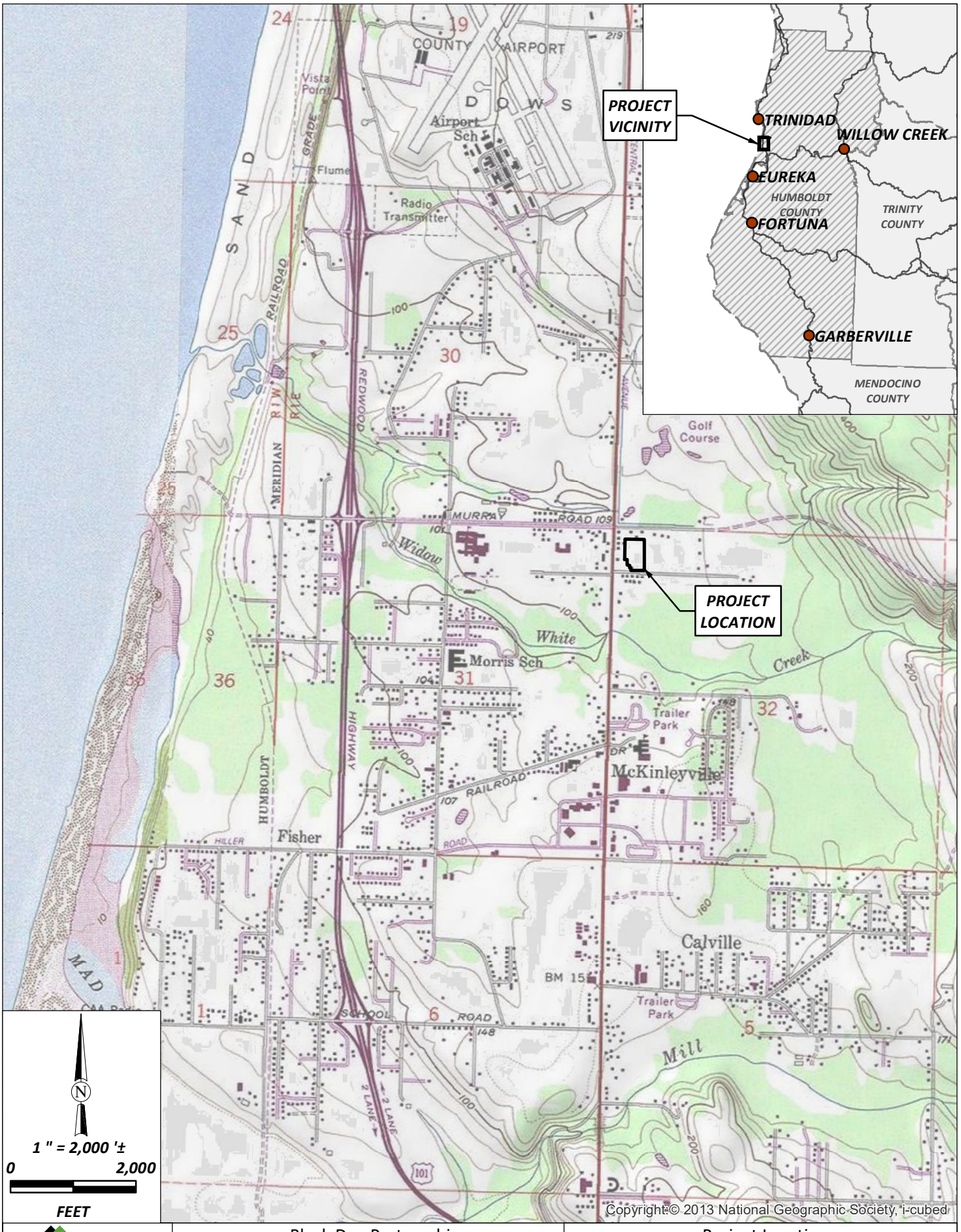
3.0 Environmental Setting

3.1 Site Uses

The site is zoned community commercial with a use code description of commercial retail and residential low density (RL) by the Humboldt County General Plan ([HCGP]; Humboldt County, 2002). Historically, the site was used for livestock grazing and motocross riding, with a residence until the construction of the Ace Hardware store in 2015. Currently, the study area is vacant, with periodic grazing in the pasture. A dilapidated wooden barn lies in the southwestern corner of the site.

3.2 Site Hydrology

Annual average rainfall amounts for the three years prior to fieldwork were approximately 84%, 132%, and 122% of normal precipitation in 2015, 2016, and 2017, respectively. The average of these three years' data is approximately 117% of normal rainfall. The historical 1981-2010, 30-year average rainfall from October 1 through April 30 is approximately 36.72 inches. The 2017-2018 season rainfall data of approximately 35.23 inches makes the rainy season prior to fieldwork, spanning from October 2017 to April 2018, approximately



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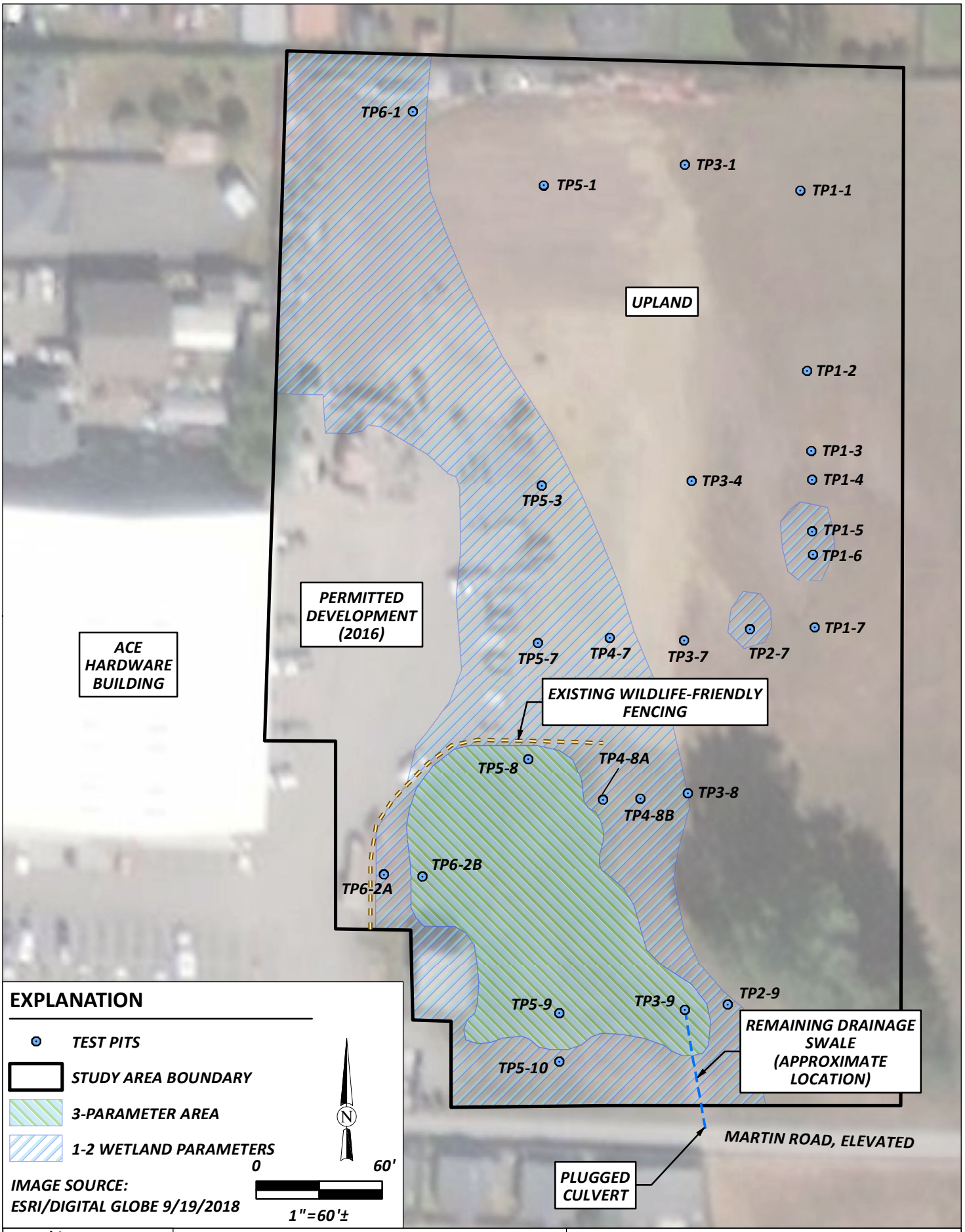
SHN	Black Dog Partnership Wetland Delineation McKinleyville, California	Project Location SHN 017257
August 2019	WD_Fig1_ProjectLocation	Figure 1



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SHN	Black Dog Partnership Wetland Delineation McKinleyville, California	Wetland Delineation Map APN 510-081-001 & 510-081-002 SHN 017257
	May 2020	WD_Fig2_WetlandDelineation	Figure 2

96% of normal rainfall. Rainfall for the rainy season prior to the August 22, 2019, site visit was approximately 106%, with precipitation at approximately 132% of normal for the January 1 through August 22 period. This data shows that climatological conditions were approximately normal for the three seasons prior to 2018 fieldwork, providing normal precipitation volumes and normal growing conditions for vegetation within the study area. The spring of 2019 experienced above normal rainfall, providing sufficient conditions for observation of potential wetland characteristics. Although summer precipitation amounts are recorded as below normal in the online National Oceanic and Atmospheric Administration (NOAA) tables for the months preceding the delineation work, the normal or above normal precipitation amounts for the year, especially the late spring rains in 2019, make it unlikely that wetland conditions were obscured due to below normal rainfall in the months preceding the fieldwork.

Hydrological conditions on this site are complex. Anthropogenic changes within, and adjacent to, the project area have impacted hydrological conditions across the site. This includes adjacent development, roadway drainage issues, motocross trails, and agricultural use (such as plowing and livestock, roadway development, and the construction of adjacent commercial property), as detailed below. A drainage swale exists within the southern end of a three-parameter area east of the barn, leading to a plugged culvert under Martin Road. The McKinleyville drainage study indicates that changing management surrounding the study area has altered hydrology in the vicinity considerably over time (Winzler and Kelley, 1982).

Since at least 1965, Martin Road has been periodically elevated with imported gravel. Martin Road's elevation slowed runoff from the site, which caused ponding. Eventually a culvert was installed to convey runoff through the roadway rather than causing water to pond until it could flow over the roadway. This culvert was eventually folded and crushed, preventing stormwater runoff from leaving the site, resulting in onsite water storage, longer retention times, and larger ponding areas.

Motorcross trails were installed and used over time, with soil excavated from what is now the depressional area adjacent to the east side of the barn, to construct ramps for jumping around the site (M. Rynearson, personal communication, September 24, 2014). The trails created differential soil compaction and depressions across the site, which likely developed zones of varied infiltration into the soil. The December 2005 aerial image shows an example of these trails with jumping ramps and depressions across the site (Appendix 2A). These anthropogenic features would create favorable conditions for extended ponding throughout the site.

Between April 1989 and November 2003, the eight residential parcels adjacent to the northern project boundary were developed, followed by a mini-storage facility constructed north of Murray Road between December 2005 and June 2009. This development increased the amount of impermeable area uphill of the site, increasing stormwater runoff entering the study area.

The May 1989 aerial photograph shows a linear anthropogenic drainage swale directing water from the adjacent northern residential development, south through the commercial parcels, to the culvert under Martin Road (Appendix 2B). This swale coincides with Transect 3 within the study area. Aerial photographs from 2011 and 2012 indicate a linear, anthropogenic drainage ditch feature was installed west of this swale to facilitate drainage from additional development within the parcels to the north (Appendix 2C-D). The swale along what is now Transect 3 was abandoned during this period and no longer appears on aerial imagery.

Pasture management equipment such as mowing and tilling implements have periodically created depressions around the site. These depressions occur when the tractor turns and implement edges, or built

up sod and debris extending from the implement edges, gouge the soil surface. The resulting compacted depressions typically facilitate extended ponding conditions as compared to surrounding soils. Livestock wallows create similar conditions.

3.3 National Wetlands Inventory

The United States Fish & Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapper shows most of the study area as wetland (Appendix 3A). A palustrine emergent persistent seasonally flooded (PEM1C) wetland is shown intertwined with a palustrine scrub/shrub persistent seasonally flooded (PSS1C) wetland covering nearly the entire site. This general categorization by the NWI is not intended for planning purposes because of the absence of ground-truthing. The USFWS NWI Mapper "Data Limitations, Exclusions and Precaution" disclaimer states:

> *The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high-altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis* (USFWS, 2019).

SHN completed site-specific soils, hydrology, and vegetation mapping investigations to confirm or repudiate original general NWI boundaries.

3.4 McKinleyville Community Plan Wetlands Inventory

The Humboldt County Web Geographic Information System (GIS) map shows no McKinleyville Community Plan-designated wetlands within the study area (Appendix 3B; Humboldt County, 2015).

4.0 Vegetation

The wetland indicator status of plant species for this investigation was based on the *Western Mountains, Valleys, and Coast 2016 Regional Wetland Plant List* (USACE, 2016). Synonyms were checked for species not appearing on the USACE wetland plant list. Plant species were classified as:

- Obligate (OBL)–almost always occurs in wetlands
- Facultative-wet (FACW)–usually occurs in wetlands, but may occur in non-wetlands
- Facultative (FAC)–occurs in wetlands and non-wetlands
- Facultative-upland (FACU)–usually occurs in non-wetlands, but may occur in wetlands
- Upland (UPL)–almost never occurs in wetlands
- Not listed (NL)–scored as an upland plant and calculated as such on wetland determination data forms

The site consists of native loam topsoil over sandy clay loam subsoil, which is representative of soils on the coastal plain on which the community of McKinleyville is built (Appendix 1, Photo 3). A mix of native and non-native herbaceous species dominated by sweet vernal grass (*Anthoxanthum odoratum* [FACU]), creeping bentgrass (*Agrostis stolonifera* [FAC]), tall fescue (*Festuca arundinacea* [FAC]), Italian ryegrass (*Festuca perennis* [FAC]), hawkbit (*Leontodon saxatilis* [FACU]), velvet grass (*Holcus lanatus* [FAC]), toad rush

(*Juncus bufonius* [FACW]), creeping buttercup (*Ranunculus repens* (FAC]), and crimson clover (*Trifolium incarnatum* [NL]) cover the site. The area east of the barn is dominated by birdsfoot trefoil (*Lotus corniculatus* [FAC]), creeping bentgrass, silverweed (*Potentilla anserina* ssp. *pacifica* [OBL]), and velvet grass.

The site has been disturbed and soils compacted by historical grazing, motorcross riding, and periodic pasture management. Onsite observation of changes in plant growth by SHN staff since 2013, and review of historical aerial photography, reveal dynamic changes in plant growth as management has fluctuated on this site (Appendix 2). Mowing and grazing have reduced the encroachment of invasive Spanish heather (*Erica lusitanica* [NL]) and Himalayan blackberry (*Rubus armeniacus* [FAC]).

5.0 Geologic and Soil Composition

The project site lies on an elevated marine terrace, in the central portion of McKinleyville, California. Widow White Creek flows east to west approximately 1,000 feet south of the study area (Figure 1).

The underlying soils in the study area have the U.S. Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS) soil Map Unit 225-Arcata and Candymountain soils, 0 to 2 percent slopes, as described below. Both soil series are rated as non-hydric. Frequency classification of flooding and ponding for both soil series is none. Soil textures are well drained, sandy loams. The actual soil description at each exploratory soil test pit (TP) is included in the wetland determination data forms found in Appendix 4, with photos in Appendix 1.

225—Arcata and Candymountain Soils, 0 to 2 percent slopes

Map Unit Composition

Arcata and similar soils: 50 percent
Candymountain and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the map unit.

Description of Arcata

Setting

Landform: Marine terraces
Parent material: Marine deposits derived from mixed

Typical profile

A - 0 to 23 inches: fine sandy loam
AB - 23 to 37 inches: very fine sandy loam
Bw - 37 to 51 inches: fine sandy loam
C - 51 to 67 inches: fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 inches per hour [in/hr])
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 millimhos per centimeter [mmhos/cm])
Available water storage in profile: Moderate (about 8.9 inches)

Interpretive Groups
Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 2s
Hydrological Soil Group: B
Hydric soil rating: No
(USDA-NRCS, 2019b)

Description of Candymountain
Setting
Landform: Marine terraces
Parent material: Marine deposits derived from mixed

Typical profile
A1 - 0 to 11 inches: fine sandy loam
A2 - 11 to 19 inches: fine sandy loam
Bt1 - 19 to 38 inches: fine sandy loam
Bt2 - 38 to 48 inches: fine sandy loam
BCt - 48 to 55 inches: sandy loam
C - 55 to 63 inches: loamy fine sand

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 8.9 inches)

Interpretive Groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrological Soil Group: B
Hydric soil rating: No
(USDA-NRCS, 2019b)

6.0 Regulatory Setting

6.1 Federal Laws

6.1.1 Section 401 and 404 of the Clean Water Act

Under Section 404 of the Clean Water Act (CWA; 33 U.S. Code [USC] 1344), as amended, the USACE and the Environmental Protection Agency (EPA) retain primary responsibility for regulating discharge of dredged or fill material into "navigable waters of the United States." Discharges of dredged or fill material into jurisdictional WoUS that result in permanent or temporary losses of WoUS are regulated by the USACE. A permit from the USACE must be obtained before placing fill or grading in wetlands or other WoUS, unless the activity is exempt from CWA Section 404 regulation (for example, certain farming and forestry activities).

The definition of WoUS, as defined by 33 Code of Federal Regulations (CFR) Section 328.3, includes:

1. waters used for commerce
2. interstate wetlands
3. all other waters (including lakes, rivers, streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, and natural ponds)
4. impoundments of water
5. tributaries to aforementioned waters
6. territorial seas
7. wetlands adjacent to waters

Under 33 CFR 328.3, WoUS do not include prior converted cropland or waste treatment systems (USCFR, 1986).

In 2008, the EPA and USACE released a guidance memorandum regarding WoUS clarifying the Supreme Court's decision in the cases of the Rapanos v. U.S. and Carabell v. U.S. As a result of these Supreme Court cases, the agencies will apply a significant nexus standard to the following categories of waterbodies to determine if it meets the definition of a WoUS:

- Non-navigable tributaries that are not relatively permanent
- Wetland adjacent to non-navigable tributaries that are not relatively permanent
- Wetland adjacent to but that does not directly abut a relatively permanent tributary

Section 401 of the CWA (33 USC 1341) requires that applicants for a federal license or permit obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards. The certification is obtained from the state in which the discharge originates or would originate, or if appropriate, from the interstate water pollution control agency having jurisdiction over the affected waters at the point where the discharge originates or would originate. The responsibility for the protection of water quality in California rests with the State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCBs).

6.1.2 Rivers and Harbors Appropriation Act of 1899

The River and Harbors Appropriation Act of 1899 addresses activities that involve the construction of dams, bridges, dikes, and other structures across any navigable water. Placing obstructions to navigation outside

established federal lines and excavating from or depositing material in such waters require permits from the USACE. Section 10 of the Rivers and Harbors Appropriation Act (33 USC 403; USCFR, 2006) prohibits the unauthorized obstruction or alteration of any navigable WoUS.

6.2 State Laws

6.2.1 Porter-Cologne Water Quality Control Act

The State maintains independent regulatory authority over the placement of waste, including fill, into WoS under the Porter-Cologne Water Quality Control Act. WoS are defined by the Porter-Cologne Water Quality Control Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The SWRCB protects all waters in its regulatory scope, but has special responsibility for isolated wetlands and headwaters. WoS are regulated by the RWQCBs under the State Water Quality Certification Program, which regulates discharges of dredged and fill material under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act.

Projects that require a USACE permit, or fall under other federal jurisdiction, and have the potential to impact WoS are required to comply with the terms of the Water Quality Certification Program. If a proposed project does not require a federal license or permit, but does involve activities that may result in a discharge to WoS, then the local RWQCB has the option to regulate such activities under its state authority in the form of waste discharge requirements (WDRs) or certification of WDRs. Water Quality Order No. 2004-0004-DWQ specifies general WDRs for dredge or fill discharges to waters deemed by the USACE to be outside of federal jurisdiction under Section 404 of the CWA.

6.3 County Regulations

6.3.1 McKinleyville Community Plan

The MCCP requires that land with one or more wetland parameters present be classified as wetland. This one-wetland parameter policy conflicts with the HCGP, which maintains the standard USACE three-parameter classification for wetlands. Section 3422.7 of the MCCP states:

> *Wetland Areas shall be defined according to the criteria utilized by the CA Dept. of Fish and Game (also included in the County's Open Space Implementation Standards). In summary, the definition requires that a given area satisfy at least one of the following three criteria:*
> *• the presence of at least periodic predominance of hydrophytic vegetation; or,*
> *• predominately hydric soils; or,*
> *• periodic inundation for seven (7) consecutive days*

However, in the case of anthropogenic features (such as, drainage ditches, bioswales, or bioretention basins), wetland classification does not apply. Section 3422.12 clarifies, "For purposes of these requirements, wetlands and wetland buffer standards shall not apply to watercourses consisting entirely of a drainage ditch, or other man-made drainage device, construction or system."

7.0 Methods

TP investigations were conducted on October 25, November 1 and 8, 2018, and August 22, 2019. A total of 26 TPs were excavated across the site to characterize the study area. TP soils, vegetation, and hydrology

characteristics were recorded on USACE Wetland Determination Data Forms (Appendix4). The site lies within the MCCP area, where only one wetland parameter is used to define an MCCP wetland in the absence of anthropogenic drainage features.

Wetland delineation methods described in *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987) and *The Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)* (USACE, 2010) were used to identify potential wetlands and other waters. The routine method for wetland delineation described in the Environmental Laboratory 1987 manual was used to identify potential wetlands within the study area. The USACE method relies on a three-parameter approach, in which criteria for hydrophytic vegetation, hydric soils, and wetland hydrology must each be met (present at the point of field investigation) to conclude that an area qualifies as a wetland. Additionally, the MCCP requires only one of the three wetland parameters to be met to qualify as a wetland. SHN's mapping reflects both USACE and MCCP requirements by showing areas meeting any parameters.

Hydrophytic vegetation refers to plant species known to be adapted to wetland sites. To classify the hydrophytic plants onsite, the most recent *Western Mountains, Valleys, and Coast 2016 Regional Wetland Plant List* was used (USACE, 2016). Hydric soils are those formed under saturated conditions, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil profile (USDA, 2019a). Wetland hydrology is demonstrated through direct evidence (primary indicators) or indirect evidence (secondary indicators) of flooding, ponding, or saturation for a significant portion of the growing season (USACE, 2010).

Prior to conducting the field investigation, SHN staff reviewed the USGS topographic quadrangle map (Figure 1); Google Earth (Google Earth, 2016); USDA-NRCS Web Soil Survey website (USDA, 2019b); and NWI map (USFWS, 2019; Appendix 3). Prior to the TP investigation, a preliminary site investigation was performed to view existing hydrology. During the subsequent TP subsurface investigation, sample points were characterized at each pit for the botanical, hydrological, and soil parameters.

Wetland TP locations were selected to:

- achieve appropriate coverage and characterization of potential wetland and upland habitats
- document potential changes in the vegetative community (such as a shift in the dominant species)
- determine the approximate boundary line between potential wetlands and uplands by evaluating the extent of key wetland criteria (hydrology, hydric soils, and hydrophytic vegetation)

Field mapping was completed with a Trimble sub meter GPS, in addition to a 300-foot tape measure with distance referenced from the surrounding fence lines and other hard points visible on aerial imagery.

7.1 Vegetation Methods

Prior to the field investigation, a review of plant species reported to be within the study area was performed by querying the "Consortium of California Herbaria" (Consortium of California Herbaria, 2019) database records and "Calflora" (Calflora, 2019) observations. Site investigations were performed during above normal rainfall seasons within "below normal" rainfall periods for the October and November 2018, and August 2019 site visits by reviewing rainfall data (see Section 3.2 Site Hydrology). Absolute percent cover of each plant species was visually estimated within the sample point and within each vegetation stratum. The tree stratum was inspected at a 30-foot radius centered on the sample point, and the herb and

sapling/shrub strata at a 5-foot radius. Botanical nomenclature follows *The Jepson Manual, Vascular Plants of California* (Baldwin et al., 2012) in addition to the online Jepson Interchange (University of California, Berkeley, 2019) for verification of species whose taxonomy may have changed since its publication. For plant species wetland classification, see Section 4.0 Vegetation.

The 50/20 method[1] was applied to each stratum to determine the dominant plant species and to satisfy the hydrophytic vegetation criteria. If hydric soils and wetland hydrology were present, the prevalence index[2] was applied. The occurrence and type of plant cover determine whether areas are identified as satisfying the vegetation criteria of a wetland or other waters. Those sites with little or no hydrophytic plant cover, or other sites not capable of supporting hydrophytic plant communities in normal circumstances, are identified as other waters, provided they have an ordinary high water mark.

7.2 Soils Methods

Soils were field verified for the presence or absence of hydric conditions. All TPs were dug to a minimum depth of 24 inches, and the thickness of each soil horizon was measured. The Munsell Soil Color Chart (Munsell Color, 2010) was referenced to determine the colors of the moist soil matrix and redoximorphic (redox) features (if present). Soils were closely inspected for hydric soil indicators, as defined by the NRCS "Field Indicators of Hydric Soils in the United States" (Version 8.2; USDA-NRCS, 2017). Unrecorded reference TPs were periodically excavated between recorded TPs to verify that the recorded TPs were representative of surrounding conditions.

7.3 Hydrology Methods

The presence (or lack) of wetland hydrology indicators was determined by direct observations of surface and groundwater made during TP excavations, in addition to indirect hydrologic indicators (such as water marks, drift deposits, sediment deposits, drainage patterns, geomorphic position, water-stained leaves, and similar features). Indicators of extended period saturation include oxidized rhizospheres surrounding living roots or the presence of reduced iron or sulfur in the soil profile. TPs were excavated to a depth of 24 inches to determine the presence or absence of a dry season water table at each location. At least one primary indicator or two secondary indicators must be observed to qualify for the hydrology parameter.

8.0 Discussion and Results

Three-parameter Area

One three-parameter area was found within the study area (Appendix 1, Photo 4) covering approximately 0.30 acres. While previous assessments, compiled by various entities, described a wetland adjacent to the barn, such documents provided polygons that varied in shape. This wetland delineation employed site-specific subsurface and plant cover investigations to assess the current conditions and define the three-parameter area boundary. The three-parameter area lies within a geomorphic depression east of the old barn where it catches and retains stormwater. The area is dominated by native and non-native herbaceous species, primarily silverweed and creeping bentgrass. Wetland soils, including histosols, indicate that this

[1] The 50/20 rule: for each stratum of the plant community, dominant species are the most abundant species that (when ranked in descending order of abundance and cumulatively totaled) immediately exceed 50% of total dominance measure for the stratum, plus any additional species that individually comprise 20% or more of the total dominance measure for the stratum (USACE, 2010).

[2] The prevalence index is a weighted-average wetland indicator status of all plant species in the sampling plot or other sampling unit, where each indicator status category is given a numeric code (OBL = 1, FACW = 2, FAC = 3, FACU = 4, and UPL = 5) and weighting is by abundance (absolute percent cover).

wetland feature has existed at this location for a substantial period. This area has no nexus to adjacent waterways as a result of the geomorphic position, and surrounding, raised development. Since the depression is not hydrologically connected to WoUS, it should not be considered a jurisdictional wetland feature. It is still subject to county and state wetland protection regulations, as outlined in the county general plan and the Porter-Cologne Water Quality Control Act as administered by the California State Water Resources Control Board.

MCCP One- and Two-Parameter Areas

The area adjacent to the existing Ace Hardware store heading to the north of the parcel has one to two parameters present (see Figure 2). Site hydrology has been significantly altered both within the project area and in the vicinity, so that hydrologic circumstances are not normal. Permitted construction of the existing Ace Hardware store and associated parking and access roads have likely changed hydrology and stormwater movement within the area. Local wetland regulations have changed since the construction of the store with the adoption of the HCGP in October 2017, and the re-adoption of the MCCP, which has regulatory authority over the study area. Areas with one and two wetland parameters are now protected as wetlands by the MCCP. As such, this area with one and two parameters present is shown on Figure 2.

Past disturbance of the area, including agricultural use, residential development, motorcross track development, and adjacent commercial development calls into question the integrity of the wetland parameters observed within this area, since they reflect human disturbance and use rather than wetland habitat in need of protection. Since site hydrology has been significantly altered both within the project area, and in the vicinity, so that hydrologic circumstances are not normal (See Section 3.2 Site Hydrology), including the anthropogenic drainage swale and the road culvert blockage, the study area should not be considered a wetland under MCCP guidance.

Upland Areas

The eastern half of the study area, which slopes gently upward toward the east, classifies as upland with no wetland parameters observed. An exception to this trend was a small polygon surrounding TPs 1-5 and 1-6, and another small polygon surrounding TP2-7 (see Figure 2). These two polygons are unique because they contained hydric soils without wetland hydrology or hydrophytic vegetation dominance. These conditions indicate relict hydric soils typical of livestock wallows and farm equipment-induced depressions (Appendix 2). As such, they should not be considered wetlands.

The discussion sections below describe the data and physical features from TPs representing the three-parameter wetland, one- and two-parameter MCCP wetland areas, and uplands observed onsite, followed by data sections that summarize information from the corresponding Wetland Determination Data Forms for each TP described. See Figure 2 for TP locations and Appendix 1 for photos of the study area, and Appendix 4 for the Wetland Determination Data Forms.

National Wetlands Inventory

As quoted in the USFWS NWI “Data Limitations, Exclusions and Precautions”, NWI mapping is intended only for reconnaissance level information prior to on-the-ground inspection. High altitude imagery cannot analyze subsurface soil or hydrological conditions, nor differentiate between hydrophytic or upland plant species. Furthermore, the NWI mapping has changed three times since the current owner began the project, while site conditions have remained largely the same. During the field work for this report, only an approximate 0.3-acre area containing three wetland parameters was found southeast of the existing store,

in contrast to the approximate 4.63 acres shown on the NWI map. The current NWI mapped wetland extends over a large portion of the eastern half of the parcels, including the existing stand of trees, where the elevation rises too high to develop wetland conditions.

8.1 Upland – No Wetland Parameters

8.1.1 No Wetland Parameters

Representative Site: TP1-1

Similar TPs in Group: TP1-2, TP1-3, TP1-4, TP1-7, TP3-1, TP3-4, TP3-7, and TP5-1

Discussion

TP3-1 was excavated in the northeastern portion of the property, representing the higher elevations of the project area. No wetland parameter was observed; therefore, it is not considered a wetland site (Appendix 1, Photo 5, exploratory TP along eastern study area boundary shown as example).

Data

TP3-1 vegetation contained herbaceous and sapling/shrub stratums. The dominant species were 50 percent hawkbit [FAC], 33 percent crimson clover [NL], 32 percent creeping bentgrass [FAC], 2 percent Himalayan blackberry [FAC], and 1 percent Spanish heather [NL]. This plant combination did not meet the dominance test for hydrophytic vegetation.

No hydrology or hydric soil indicators were observed. The remaining TPs lacked any wetland parameters, representing upland characteristics associated with the higher elevations across the project area. These TPs included 1-2, 1-3, 1-4, 1-7, 3-1, 3-4, 3-7, and 5-1.

8.2 Upland – One Wetland Parameter

8.2.1 One Wetland Parameter, Isolated

Representative Site: TP1-5

Similar TPs in Group: TP1-6 and TP2-7

Discussion

TP1-5 was excavated in the east-central portion of the study area, representing the locations exhibiting one wetland parameter isolated in the eastern portion of the study area (Figure 2; Appendix 1, Photos 6 and 7, TP1-5 shown as example). Only the hydric soil parameter was observed; therefore, it is not considered a USACE wetland site. The lack of wetland hydrology and hydrophytic vegetation indicates that the hydric soils are relict features from a former hydrologic regime, as discussed in Section 3.2 Site Hydrology.

Data

TP1-5 vegetation contained only an herbaceous stratum. The dominant species were 40-percent toad rush [FACW] and 35-percent crimson clover [NL]. This plant combination did not meet the dominance test for hydrophytic vegetation. Only hydric soil indicator F6, Redox Dark Surface was observed at this location (Appendix 1, Photo 7).

No hydrology indicator was observed at these TPs and these locations represent areas exhibiting one wetland parameter within surrounding uplands. These two areas reflect relict wetlands that are no longer functioning as wetlands as evidenced by the lack of hydrophytic vegetation dominance and wetland hydrology. These TPs contained the hydric soil indicator F6. Wetland hydrology and hydrophytic vegetation were not observed.

8.3 One- to Two-Wetland Parameters

8.3.1 One to Two Parameters

Representative Site: TP6-1

Similar TPs in Group: TP2-9, TP3-8, TP4-7, TP4-8A, TP4-8B, TP5-3, TP5-7, TP5-10 and TP6-2A

Discussion

TP6-1 was excavated in the northern corner of the study area, representing the locations exhibiting one or two wetland parameters (Figure 2; Appendix 1, Photo 6, TP1-5 shown as example). Only the hydrophytic vegetation parameter was observed; therefore, it is not considered a USACE wetland site. The lack of wetland hydrology and hydric soils indicates that standing water does not regularly occur within this area. Hydrophytic vegetation dominance reflects elevation and slope of the site rather than wetland conditions. The TPs in this group are lower in elevation than the upland TPs to the east, and are higher in elevation than TPs exhibiting three wetland parameters discussed in Section 8.4, Three-Parameter Area. Surrounding development, past use, and agriculture have further manipulated conditions at this site.

Data

TP6-1 vegetation contained the sapling/shrub and herbaceous stratums. The dominant species were 31 percent creeping buttercup [FAC], and 25 percent velvet grass [FAC]. Plant dominance met the criteria for hydrophytic vegetation. However, most of the species present are FAC or FACU species, which are found in both wetland and upland conditions. No hydric soils or wetland hydrology parameters were observed at this TP and it is likely that conditions found in this area more likely reflect upland conditions (Appendix 1, Photo 5).

Remaining TPs in this group ranged from one to two parameters. Areas dominated by FAC or drier species lacking hydric soil indicators and wetland hydrology are likely upland locations, including TPs 4-8B, 5-10, and 6-1. TPs with wetter (FAC and FACW) hydrophytic vegetation dominance and/or two parameters were primarily situated immediately adjacent to the three-parameter area. These areas were represented by TPs 2-9, 3-8, 4-8a, and 6-2a. The remaining TPs in this one- and two-parameter area included 4-7, 5-3, and 5-7, which were all one-parameter areas with hydrophytic vegetation dominance within proximity to a gravel parking lot and associated disturbance. It is likely that vegetation in this area reflects manipulated conditions rather than wetland conditions, especially those with toad rush dominance. TP5-3 is the exception, exhibiting a diverse assemblage of hydrophytes, likely reflecting a change in hydrologic conditions at this location or a remnant population of vegetation from conditions prior to disturbance in 2016. See Appendix 4 Wetland Determination Forms for additional information, and Figure 2 for TP locations.

8.4 Three-Parameter Area

8.4.1 Redox Dark Surface

Representative Site: TP5-9

Similar TPs in Group: TP3-9, TP5-8, and TP6-2B

Discussion

TP5-9 was excavated approximately 55 feet east-southeast of the southeastern corner of the barn. This location was selected because it lies within the split rail fence-protected depression east of the barn, which was designated for protection by North Coast Regional Water Quality Control Board (RWQCB) Staff during the spring of 2016 (Appendix 1, Photo 4). This TP had low-value, low-chroma soils with prominent redox

concentrations indicating saturation within the upper 12 inches of profile (Appendix 1, Photo 7). Three wetland parameters were observed at this location, which is located just below a grade break and vegetation change; therefore, it is considered a wetland (Appendix 1, Photo 8).

Data
TP5-9 vegetation contained only an herbaceous stratum. The dominant species for the herb stratum were 40 percent silverweed [OBL], and 40 percent birdsfoot trefoil [FAC], which met the hydrophytic vegetation parameter.

The hydric soil indicator Redox Dark Surface (F6) was observed at this location. Wetland hydrology included the two secondary indicators D2, Geomorphic Position, and D5, FAC-Neutral Test.

Three wetland parameters were observed. TPs 3-9, 5-8, and 6-2B were the other three-parameter TPs positioned in very similar conditions, sharing dominance by similar vegetation, along with hydric soil indicator F6, within the lower elevations of the project area.

9.0 Conclusions

This region experienced normal rainfall seasons during the three years prior to fieldwork in 2018, with above-average precipitation during the spring of 2019 (Section 3.2 Site Hydrology). One three-parameter area was described adjacent to the existing dilapidated barn. The entire eastern portion of the study area is upland with no wetland parameters present, except in two locations containing relict hydric soil indicators (see Figure 2). One- and two-wetland parameters exist within the area immediately east of the existing hardware store. Test pits immediately adjacent to the three-parameter area exhibited two wetland parameters (hydric soils and hydrophytic vegetation), likely reflecting transitory wet conditions during high flow events. Other test pits associated with the former swale had only one wetland parameter present (hydrophytic vegetation), likely reflecting an elevational gradient above the wetland area, but below the upland areas unable to support hydrophytic vegetation. Recent development has obscured conditions in this area and likely increased stormwater runoff from the store and parking lot to the study area. This is especially true at TPs 4-7 and 5-7, which were dominated only by toad rush, a disturbance dependent species. Figure 2 shows the TP locations, one- and two-parameter areas, three-parameter area near the barn, and study area boundary.

Table 1. Wetland Parameters Observed at Test Pit Locations
McKinleyville Ace Hardware, McKinleyville, California

TP Number	Parameters Met	Parameter Type	Jurisdiction
1-1	0	None	NA[1]
1-2	0	None	NA
1-3	0	None	NA
1-4	0	None	NA
1-5	1	Hydric soils	MCCP[2]
1-6	1	Hydric soils	MCCP
1-7	0	None	NA
2-7	1	Hydric soils	MCCP
2-9	1	Hydric soils	MCCP
3-1	0	None	NA
3-4	0	None	NA
3-7	0	None	NA
3-8	2	Hydrophytic vegetation and hydric soils	MCCP
3-9	3	Hydrophytic vegetation, hydric soils, and hydrology	CA[3], HC[4]
4-7	1	Hydrophytic vegetation	MCCP
4-8	2	Hydrophytic vegetation and hydric soils	MCCP
4-8B	1	Hydrophytic vegetation	MCCP
5-1	0	None	NA
5-3	1	Hydrophytic vegetation	MCCP
5-7	1	Hydrophytic vegetation	MCCP
5-8	3	Hydrophytic vegetation, hydric soils, and hydrology	CA, HC
5-9	3	Hydrophytic vegetation, hydric soils, and hydrology	CA, HC
5-10	1	Hydrophytic vegetation	MCCP
6-1	1	Hydrophytic vegetation	MCCP
6-2a	1	Hydrophytic vegetation	MCCP
6-2b	3	Hydrophytic vegetation, hydric soils, and hydrology	CA, HC

1. NA: not applicable
2. MCCP: McKinleyville Community Plan
3. CA: California Porter-Cologne Water Quality Control Act
4. HC: Humboldt County General Plan

Table 2. Wetland Delineation Results
McKinleyville Ace Hardware, McKinleyville, California

	Description	Test Pits	Cowardin Type	Centerpoint Latitude/Longitude	Approximate Area (acres)
3-Parameter Area	3-Parameter Area	3-9, 5-8, 5-9, 6-2b	PEM1C[1]	40.954483°/-124.099573°	0.30
1-2 Parameter Area	1 or 2 Parameters Present	1-5, 1-6, 2-7, 2-9, 3-8, 4-7, 4-8, 4-8B, 5-3, 5-7, 5-10, 6-1, 6-2A	NA	40.955061°/-124.099703°	0.88
Upland	Zero Parameters Present	1-1, 1-2, 1-3, 1-4, 1-7, 3-1, 3-4, 3-7, 5-1	NA	40.955130°/-124.099236°	1.55

1. PEM1C: Palustrine Emergent Persistent Seasonally Flooded

10.0 Limitations

The conclusions in this report represent a "snapshot in time" and some species may not have been present at the time of the fieldwork. This report documents the investigation by using the best professional judgment of SHN's botanist and soil scientist.

11.0 Mitigation Recommendations

A wildlife-friendly fence was installed during construction of the store to prevent incursion into the three-parameter area. The city-center lot, west of the McKinleyville Shopping Center, is currently in the planning stages of development and has been approved to use a 1:1 wetland mitigation ratio, after which this Black Dog Partnership project is being modeled. Since the three-parameter area near the barn lacks a nexus to adjacent waterways, this approach is appropriate. Impacts to the three-parameter area should therefore be mitigated at a 1:1 replacement ratio. For example, if the entire 0.30 acres of three-parameter area were to be impacted, then 0.30 acres of in-kind wetlands would need to be created with associated 50-foot setbacks.

Calculation of winter water table levels, soil structure, and vegetation types should be employed during mitigation planning. The existing three-parameter area is dominated by a mix of native and non-native

herbaceous vegetation, including silverweed, western inflated sedge, and common rush. Mitigation incorporating native vegetation with a minimum of five years of monitoring to ensure proper establishment of native wetland vegetation, and wetland hydrology, is recommended at the site.

One- and two-parameter areas do not support wetland habitat in this location, and more closely resemble managed pasture, or other manipulated locations. It is not recommended that these areas require mitigation or wetland setbacks as there is little native vegetation and absence of wetland hydrology. The anthropogenic nature of this area also makes it possible that this area is excluded from wetland protection in the MCCP which states in Section 3422.12 that, "wetlands and wetland buffer standards shall not apply to watercourses consisting entirely of a drainage ditch, or other man-made drainage device, construction or system."

Mitigation of the three-parameter area will ensure that wet habitat continues to exist onsite and within the vicinity.

12.0 References Cited

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Site Photographs

1



Photo 1: Looking north across study area.



Photo 2: Looking west across study area toward store. Note barn in upper left of photo.



Photo 3: Looking north from TP1-3. Note dark loamy soil and upland pasture grasses and forbs.



Photo 4: Depression east of barn exhibiting three parameters.
Note split rail fence installed at Regional Water Board request in spring of 2016.



Photo 5: Exploratory TP excavated east of TP1-2 to confirm eastern edge of study area is similar to TP1-1 and other upland TPs. Note dark soils lacking redox, with sub soils too bright to meet hydric soil indicators.



Photo 6: Surface conditions surrounding TP1-5. Dominated by crimson clover and toad rush, with a significant amount of sweet vernal grass over loamy, well-drained soils, precluding hydrophytic vegetation or wetland hydrology.



Photo 7: TP1-5 soil profile. Although redoximorphic features are difficult to spot in the photo, close observation reveals fine 2.5YR 3/6 redox concentrations along pore linings in the central area between the pink tape and the right photo edge, meeting hydric soil indicator F6, Redox Dark Surface. This TP lacked wetland hydrology or hydrophytic vegetation (note hawkbit [FACU] in upper right corner).



Photo 8: Southern stretch of site drainage ditch, looking south toward TP5-9 just beyond the tall stands of slough sedge, and TP5-10, 17 feet further south. Note change of vegetation to the south. Depressional area exhibiting three-parameters contains darker vegetation, which becomes lighter and higher in elevation heading south. Soil at TP5-9 was similar to Photo 7.

Aerial Photographs 2


McKinleyville Ace Site
December 2005 Aerial Image
Legend
Murray Rd
Warner Ave
BUS
101
Martin Rd
N
300 ft
Google Earth


McKinleyville Ace Site
April 1989 Aerial Image
Legend
Murray Rd
Warner Ave
BUS
101
Martin Rd
Google Earth
Image U.S. Geological Survey
N
300 ft


McKinleyville Ace Site
June 2011 Aerial Image
Legend
Murray Rd
Warner Ave
Martin Rd
Reasor Rd
Prairie Ct
101
BUS
Google Earth
Image © 2019 DigitalGlobe
N
300 ft

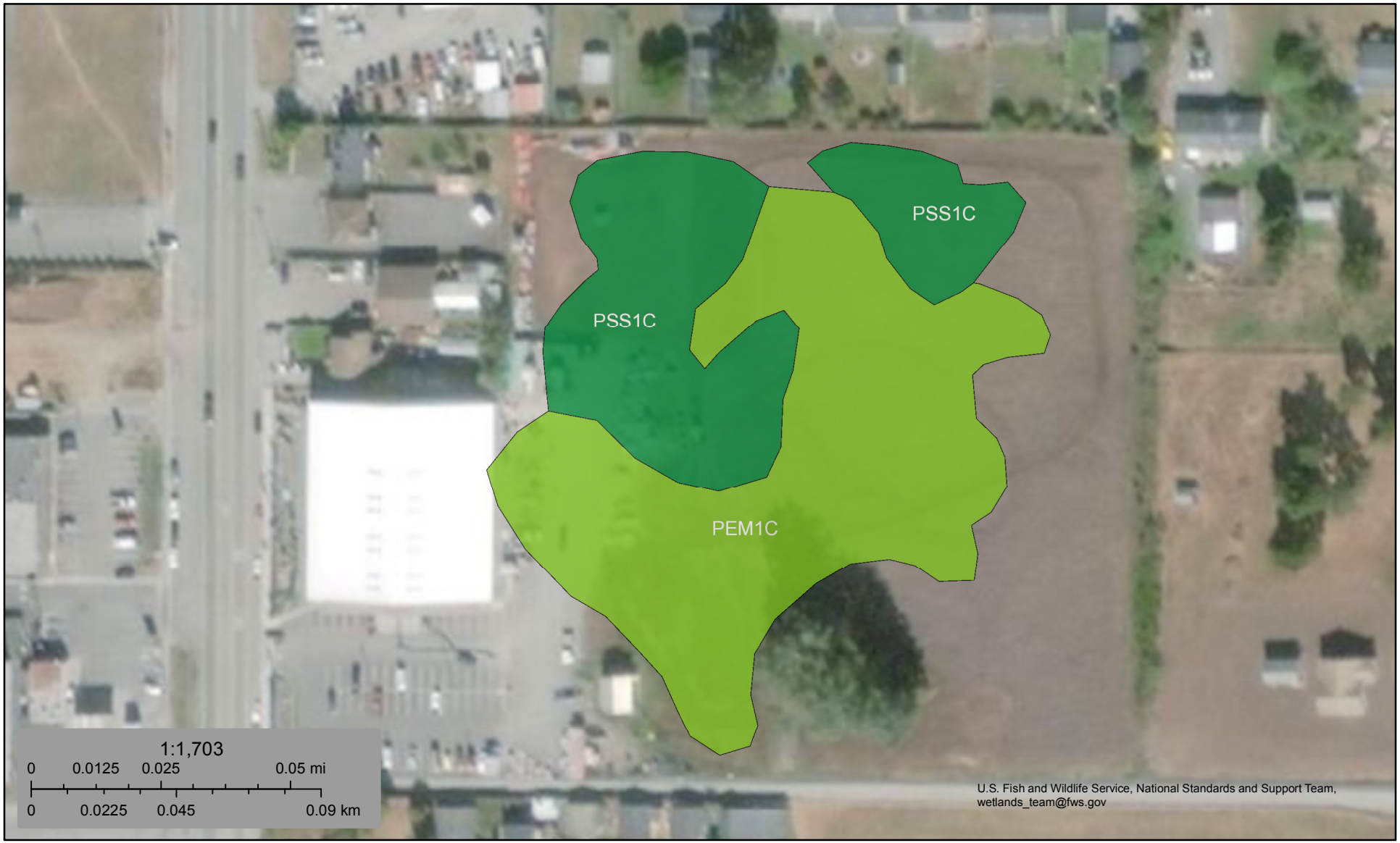

McKinleyville Ace Site
May 2012 Aerial Image
Legend
Murray Rd
Warner Ave
Martin Rd
Reasor Rd
Prairie Ct
BUS
101
Google Earth
Image © 2019 DigitalGlobe
N
300 ft

National Wetlands Inventory and Humboldt County Web GIS Map

3

U.S. Fish and Wildlife Service
National Wetlands Inventory

McKinleyville Ace NWI



November 1, 2018

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.



ArcGIS County Web Map

Humboldt County Planning and Building Department

0 87.5 175 350 Feet

0 0.015 0.03 0.06 Miles

RF= 1:2,257 1 in = 188 ft

N W E S

Printed: July 26, 2019 Web AppBuilder 2.0 for ArcGIS

Highways and Roads

- Principal Arterials
- Minor Arterials
- Major Collectors
- Minor Collectors
- Local Roads
- Private or Unclassified
- Major River or Stream

Blue Line Streams

- Perennial 1-3
- Perennial >4
- Intermittent
- Subsurface
- City Boundary
- Counties
- Parcels (no APN labels)
- Streamside Management Areas

Map Disclaimer:
While every effort has been made to assure the accuracy of this information, it should be understood that it does not have the force & effect of law, rule, or regulation. Should any difference or error occur, the law will take precedence.

Source: NRCS, Humboldt County GIS, Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Wetland Delineation Data Forms

4

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Mckinleyville Ace City/County: Mckinleyville/Humboldt Sampling Date: 10/25/18
Applicant/Owner: Kevin Jenkins State: CA Sampling Point: TP1-1
Investigator(s): Sam Polly, Joseph Saler Section, Township, Range: Sec. 32, T7N R1E, HBM
Landform (hillslope, terrace, etc.): Uplifted Marine Terrace Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR): A, MLRA 4B Lat: 40.955569 Long: -124.009198 Datum: WGS 1984
Soil Map Unit Name: 225 - Arcata and Candymountain soils, 0-2% NWI classification: PEM 1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____ or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks: 565' S. of N. Fence
Due N. of Western Spruce trees ~40' S. of Northern fence/gate
Hydrology disturbed w/ surrounding development

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Erica lusitanica	1	✓	NL
2. Rubus ursinus	2	✓	FACU
3.			
4.			
5.			
	3 = Total Cover		1.5/0.6
Herb Stratum (Plot size: 5 ft)			
1. Agrostis stolonifera	32	✓	FAC
2. Leontodon saxatilis	50	✓	FACU
3. Lotus corniculatus	1		FAC
4. Leucanthemum vulgare	3		FACU
5. Holcus lanatus	11		FAC
6. Trifolium incarnatum	33	✓	NL
7.			
8.			
9.			
10.			
11.			
	130% = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		
% Bare Ground in Herb Stratum 0			

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

SOIL

Sampling Point: TP 1-7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15	10YR 2/2	100					Loam	
15-24+	10YR 4/4	68	10YR 4/6	32	C	M	L	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Culvert @ bottom of drainage blocked off and roadway built up to dam water & prevent offsite drainage

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: McKinleyVille Ace City/County: Humboldt Sampling Date: 10/25/18

Applicant/Owner: Kevin Jenkins State: CA Sampling Point: TP 1-2

Investigator(s): Joseph Sater, Sam Polly Section, Township, Range: Sec. 32, T7N, R1E, HBM

Landform (hillslope, terrace, etc.): Uplifted Marine Terrace Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): A, MLRA, 4B Lat: 40.955424 Long: -124.098983 Datum:

Soil Map Unit Name: NWI classification: PEM 1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: Note: Pit excavated in slight depression. Hydrology see note on TP 1-1
143' 3" S. of N. fence

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Rumex crispus	2		FAC
2. Sysyrinchium californicum	4		FACW
3. Leontodon saxatilis	13		FACU
4. Ranunculus repens	2		FAC
5. Agrostis stolonifera	15		FAC
6. Juncus bufonius	5		FACW
7. Plantago lanceolata	1		FACU
8. Trifolium subterraneum	1		NL
9. Rumex acetosella	1		FACU
10. Mentha pulegium	5		Obl
11. Festuca arundinacea	28	✓	FAC
12 Holcus lanatus	2		FAC
13 Hypochaeris radicata	1		FACU
14. Lotus corniculatus	2		FAC
15. Stachys ajugoides	1		Obl
% Bare Ground in Herb Stratum 18%			
Remarks: 16. Trifolium incarnatum	29	✓	NL
	111		55.5 / 22.2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	2	x 1 =	2
FACW species	2	x 2 =	4
FAC species	7	x 3 =	21
FACU species	3	x 4 =	12
UPL species	1	x 5 =	5
Column Totals:	15 (A)		44 (B)

Prevalence Index = B/A = 2.93

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

SOIL

Sampling Point: TP T1-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/2	99	7.5YR 2.5/3	1	C	PL	loam	
10-24+	10YR 5/2	55	7.5YR 5/8	45	C	M	SCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks: Exploratory pit excavated 50' East w/ very similar conditions minus surface redox, & w/ SL srfc texture

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: McKinleyville Ace City/County: Humboldt Sampling Date: 10/25/18

Applicant/Owner: Kevin Jenkins State: CA Sampling Point: 1-3

Investigator(s): J. Saler, S. Polly Section, Township, Range: Sec 32, T7N, R1E, HBM

Landform (hillslope, terrace, etc.): Uplifted Marine Terrace Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR): A, MLRA, 4B Lat: 40.955307° Long: -124.098978° Datum:

Soil Map Unit Name: NWI classification: PEMIC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No X	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes ____ No X	

Remarks: 181' S. of N. Fence see hydrology note on TP1-1

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5')			
1. Lotus corniculatus	7		FAC
2. Leontodon saxatilis	22	✓	FACU
3. Anthoxanthum odoratum	22	✓	FACU
4. Agrostis stolonifera	18		FAC
5. Holcus lanatus	17		FAC
6. Ranunculus repens	12		FAC
7. Plantago lanceolata	2		FACU
8. Trifolium incarnatum	24	✓	NL
9.			
10.			
11.			
	124 = Total Cover		6/24.8
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	4	x 3 =	12
FACU species	3	x 4 =	12
UPL species		x 5 =	
Column Totals:	7 (A)		24 (B)

Prevalence Index = B/A = 3.4

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

SOIL

Sampling Point: 1-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 2/2	97	2.5YR 2.5/2	3	C	PL	L	
12-24+	10YR 5/2	54	10YR 5/8	46	C	M	SCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks: Exploratory pit dug 50' east w/ very similar conditions but lacking redox, and texture transitions to SL @ surface

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: McKinleyville Ace City/County: McKinleyville/Hum Sampling Date: 10/25/18
Applicant/Owner: Kevin Jenkins State: CA Sampling Point: 1-4
Investigator(s): Sam Polly, Joseph Saler Section, Township, Range: Sec. 32, T7N, R1E, HBM
Landform (hillslope, terrace, etc.): Uplifted Marine Terrace Local relief (concave, convex, none): None Slope (%): 0-1
Subregion (LRR): A, MLRA 4B Lat: 40.955093 Long: -124.099036 Datum:
Soil Map Unit Name: NWI classification: PEM 1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: 194' 3" S. of N. Fork
Due E. of white Canoe Box
see hydrology note on TP1-1

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5 ft.)			
1. Holcus lanatus	57	✓	FAC
2. Leontodon saxatilis	26	✓	FACU
3. Carex obnupta	6		Obl
4. Lotus corniculatus	1		FAC
5. Agrostis stolonifera	7		FAC
6. Trifolium incarnatum	22		NL
7. Trifolium subterraneum	2		NL
8.			
9.			
10.			
11.			
	124 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		60.5/242

% Bare Ground in Herb Stratum 1%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

SOIL

Sampling Point: 1-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 2/2	98	2.5YR 3/6	2	C	PL	L	
13-24	10YR 5/2	51	10YR 5/8	49	C	M	SCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: McKinleyville ACE City/County: Humboldt Sampling Date: 10/25/18

Applicant/Owner: Kevin Jenkins State: CA Sampling Point: 1-5

Investigator(s): Joseph Saler, Sam Polly Section, Township, Range: Sec. 32, T7N, R1E, HBM

Landform (hillslope, terrace, etc.): Uplifted Marine Terrace Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR): A, MLRA 4B Lat: 40.954993° Long: -124.099020 Datum:

Soil Map Unit Name: NWI classification: PEM 1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: 194' 3" + 25.5' Hydrology disturbed by surrounding development

Soil appears to contain relict hydric indicator from historic hydrologic influences

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5 ft.)			
1. Juncus bufonius	40	✓	FACW
2. Leontodon saxatilis	4		FACU
3. Festuca arundinacea	5		FAC
4. Holcus lanatus	5		FAC
5. Lotus corniculatus	1		FAC
6. Trifolium incarnatum	35	✓	NL
7. Anthoxanthum odoratum	15		FACU
8. Briza minor	5		FAC
9.			
10.			
11.			
	110 = Total Cover		55/22
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 30 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species ____	x 1 =	____
FACW species ____	x 2 =	____
FAC species ____	x 3 =	____
FACU species ____	x 4 =	____
UPL species ____	x 5 =	____
Column Totals: ____ (A)		____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

SOIL

Sampling Point: 1-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR 2/1	97	2.5YR 3/6	3	C	PL	L	
11-24+	10YR 5/2	55	10YR 5/8	45	C	M	SCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Mckinleyville Ace City/County: Humboldt Sampling Date: 10/25/18

Applicant/Owner: Kevin Jenkins State: CA Sampling Point: TP 1-6

Investigator(s): Sam Polly, Joseph Sales Section, Township, Range: Sec. 32, T7N, R1E, HBM

Landform (hillslope, terrace, etc.): Uplifted Marine Terrace Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR): A, MLRA, 4B Lat: 40.954925° Long: -124.099036° Datum:

Soil Map Unit Name: NWI classification: PEM 1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: 194'3" + 36.4' see soil & hydrology note on TP 1-5

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Leontodon saxatilis	10		FACU
2. Lotus corniculatus	1		FAC
3. Festuca arundinacea	3		FAC
4. Anthoxanthum odoratum	26	✓	FACU
5. Trifolium incarnatum	17	✓	UL
6.			
7.			
8.			
9.			
10.			
11.			
	57 = Total Cover		28.5 / 11.4
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 60%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species ____	x 1 =	____
FACW species ____	x 2 =	____
FAC species ____	x 3 =	____
FACU species ____	x 4 =	____
UPL species ____	x 5 =	____
Column Totals: ____ (A)		____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: Vegetation disturbed. Bare ground majority of area.

SOIL

Sampling Point: 1-6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR 2/1	97	2.5YR 3/6	3	C	PL	L	
11-24+	10YR 5/2	55	10YR 5/8	45	C	M	SCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Mckinleyville Ace City/County: Humboldt Sampling Date: 10/25/18

Applicant/Owner: Kevin Jenkins State: CA Sampling Point: 1-7

Investigator(s): Sam Polly, Joseph Saler Section, Township, Range: Sec. 32 T7N, R1E, HBM

Landform (hillslope, terrace, etc.): Uplifted Marine Terrace Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR): A, MLRA 4B Lat: 40.954870° Long: -124.099047° Datum:

Soil Map Unit Name: NWI classification: PEM 1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____ No X	
Wetland Hydrology Present?	Yes _____ No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Trifolium incarnatum	31	✓	NL
2. Lotus corniculatus	4		FAC
3. Anthoxanthum odoratum	18		FACU
4. Holcus lanatus	38	✓	FAC
5. Leontodon saxatilis	16		FACU
6. Agrostis stolonifera	13		FAC
7. Hypochaeris radicata	5		FACU
8. Trifolium subterraneum	1		NL
9. Ranunculus repens	1		FAC
10. Leucanthemum vulgare	T		FACU
11. Raphanus sativus	1		NL
Rumex acetosella	3		FACU
	= ~~Total Cover~~		
Woody Vine Stratum (Plot size: _____)	131	= Total Cover 65.5	26.2
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 0%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

SOIL

Sampling Point: 1-7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-17	10YR 2/2	100					L	
17-24+	2.5Y 4/3	93	10YR 4/6	7	C	M	SCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Mckinleyville Ace City/County: Humboldt Sampling Date: 10/25/18

Applicant/Owner: Kevin Jenkins State: CA Sampling Point: TP 2-7

Investigator(s): Joseph Sater, Sam Polly Section, Township, Range: Sec. 32, T7N, R1E, HBM

Landform (hillslope, terrace, etc.): Uplifted Marine Terrace Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR): A, MLRA, 4B Lat: 40.954876° Long: -124.099204° Datum:

Soil Map Unit Name: NWI classification: PSS1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	
Hydric Soil Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Wetland Hydrology Present?	Yes ____	No X	

Remarks: see soil & hydrology note on TP1-5

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Leontodon saxatilis	12	✓	FACU
2. Juncus balticus	10		FACW
3. Anthoxanthum odoratum	3		FACU
4. Trifolium incarnatum	18	✓	NL
5. Juncus ensifolius	T		FACW
6. Lotus corniculatus	T		FAC
7. Holcus lanatus	10		FAC
8.			
9.			
10.			
11.			
	53 = Total Cover		26.5 / 10.6
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 65%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

Recently plowed, localized disturbance to herbaceous cover.

SOIL

Sampling Point: TP 2-7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/1	98	2.5YR 3/6	2	C	PL	L	
8-14	10YR 3/2	92	10YR 5/6	2	C	M	SL	
14-24+	10YR 5/2	54	10YR 5/4	15	D	M	SiL	
			10YR 5/8	31	C	M		
			10YR 2/2	6	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): _____

Water Table Present? Yes ____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): _____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Mckinleyville Ace City/County: Humboldt Sampling Date: 11/8/18

Applicant/Owner: Kevin Jenkins State: CA Sampling Point: 2-9

Investigator(s): Sam Polly, Joseph Sailer Section, Township, Range: Sec. 32, T7N, R1E, HBM

Landform (hillslope, terrace, etc.): Uplifted Marine Terrace Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR): A, MLRA, 4B Lat: 40.954610° Long: -124.099488° Datum:

Soil Map Unit Name: NWI classification: PEM1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes No X

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area within a Wetland?** Yes No
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes	No X	

Remarks: see Soil & hydrology note on TP1-5

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Agrostis stolonifera	10		FAC
2. Leontodon saxatilis	30	✓	FACU
3. Lotus corniculatus	8		FAC
4. Festuca arundinacea	5		FAC
5. Ranunculus repens	2		FAC
6. Holcus lanatus	10		FAC
7. Festuca perennis	25	✓	FAC
8. Rumex crispus			
9.			
10.			
11.			
	90% = Total Cover		45/18
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 10%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is ≤3.0[1]
- 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- 5 - Wetland Non-Vascular Plants[1]
- Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No X

Remarks:

SOIL

Sampling Point: 2-9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 2/1		7.5YR 2.5/3		C	PL	L	
13-24+	10YR 4/1	53	10YR 6/8	42	C	M	SCL	Significant 10YR 2/1 Charcoal
			10YR 3/2	5	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: McKinleyville Ace City/County: Humboldt Sampling Date: 10/25/18

Applicant/Owner: Kevin Jenkins State: CA Sampling Point: TP 3-1

Investigator(s): Joseph Sailer, Sam Polly Section, Township, Range:

Landform (hillslope, terrace, etc.): Uplifted Marine Terrace Local relief (concave, convex, none): None slight concave Slope (%): 0-1

Subregion (LRR): A, MLRA, 4B Lat: 40.955565° Long: -124.099193° Datum:

Soil Map Unit Name: NWI classification: PSS1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: see hydrology note on TP 1-1

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Leontodon saxatilis	40	✓	FACU
2. Trifolium incarnatum	31	✓	NL
3. Hypochaeris radicata	1		FACU
4. Lotus corniculatus	5		FAC
5. Anthoxanthum odoratum	5		FACU
6. Juncus bufonius	27	✓	FACW
7. Holcus lanatus	22		FAC
8.			
9.			
10.			
11.			
	131% = Total Cover		65.5 / 26.2
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

SOIL

Sampling Point: 3-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 2/2	98	10R 2.5/2	2	C	PL	L	
9-24+	10 YR 5/2	59	10YR 5/6	41	C	M	SCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Mckinleyville Ace City/County: Humboldt Sampling Date: 10/25/18

Applicant/Owner: Kevin Jenkins State: CA Sampling Point: 3-4

Investigator(s): Joseph Sales Section, Township, Range: Sec. 32, T7N, R1E, HBM

Landform (hillslope, terrace, etc.): Uplifted Marine Terrace Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR): A, MLRA 4B Lat: 40.955271 Long: -124.099182 Datum:

Soil Map Unit Name: NWI classification: PSS1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: see hydrology note on TP1-1

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Leontodon saxatilis	10	✓	FACU
2. Holcus lanatus	1		FAC
3. Juncus bufonis	1		FACW
4. Anthoxanthum odoratum	2		FACU
5. Lotus corniculatus	1		FAC
6. Trifolium incarnatum	11	✓	NL
7.			
8.			
9.			
10.			
11.			
	26 = Total Cover		17/5.2
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 85%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species ____	x 1 =	____
FACW species ____	x 2 =	____
FAC species ____	x 3 =	____
FACU species ____	x 4 =	____
UPL species ____	x 5 =	____
Column Totals: ____ (A)		____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

SOIL

Sampling Point: TP 3-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 2/2	98	2.5YR 3/6	2	C	PL	L	
9-24+	10YR 5/2	55	10YR 5/6	45	C	M	SCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: mckinleyville Ace City/County: Humboldt Sampling Date: 10/25/18

Applicant/Owner: Kevin Jenkins State: CA Sampling Point: 3-7

Investigator(s): Joseph Saler, Sam Polly Section, Township, Range: Sec. 32, T7N, R1E, HBM

Landform (hillslope, terrace, etc.): Uplifted Marine Terrace Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR): A, MLRA, 4B Lat: 40.954927° Long: -124.099302 Datum:

Soil Map Unit Name: NWI classification: PEM 1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation X, Soil _____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	
Hydric Soil Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Wetland Hydrology Present?	Yes _____	No X	

Remarks: see hydrology note on TP1-1

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Juncus balticus	18	✓	FACW
2. Leontodon saxatilis	2		FACU
3. Polygonum aviculare	1		FAC
4. Holcus lanatus	4		FAC
5. Anthoxanthum odoratum	1		FACU
6. Lotus corniculatus	1		FAC
7. Trifolium incarnatum	15	✓	NL
8.			
9.			
10.			
11.			
	25% = Total Cover		20%
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 75%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

__ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ 5 - Wetland Non-Vascular Plants[1]

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: Recent ground disturbance, little veg cover.

SOIL

Sampling Point: TP3-7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/2	100					L	
10-24+	10YR 5/2	59	10YR 5/6	41	C	M	SCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: McKinleyville Ace City/County: Humboldt Sampling Date: 11/1/18

Applicant/Owner: Kevin Jenkins State: CA Sampling Point: 3-8

Investigator(s): J.S., S.P. Section, Township, Range: Sec. 32, T7N, R1E, HBM

Landform (hillslope, terrace, etc.): Uplifted Marine Terrace Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A, MLRA, 4B Lat: 40.954864° Long: -124.099312° Datum:

Soil Map Unit Name: NWI classification: PEM 1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: See hydrology note on TP 1-1

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. Erodium moschatum	4		NI
2. Agrostis stolonifera	60	✓	FAC
3. Potentilla anserina ssp. pacifica	15		OBL
4. Leontodon saxitilis	10		FACU
5. Juncus ensifolius	1		FACW
6. Lotus corniculatus	3		FAC
7. Ranunculus repens	2		FAC
8.			
9.			
10.			
11.			
	95 = Total Cover		47.5/19
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 5%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species ____	x 1 =	____
FACW species ____	x 2 =	____
FAC species ____	x 3 =	____
FACU species ____	x 4 =	____
UPL species ____	x 5 =	____
Column Totals: ____ (A)		____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: 3-8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/2	98	2.5YR 3/6	2	C	PL	L	
5-11	10YR 3/2	94	10YR 4/6	5	C	M	L	Numerous crotovina
			2.5YR 3/5	1	C	PL		
11-24+	10YR 5/1	57	10YR 5/8	43	C	M	SCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Mckinleyville Ace City/County: Humboldt Sampling Date: 11/8/18

Applicant/Owner: Kevin Jarvis State: CA Sampling Point: 3-9

Investigator(s): Joseph Sater, Sam Polly Section, Township, Range: Sec. 32, T7N, R1E, HBM

Landform (hillslope, terrace, etc.): Uplifted Marine Terrace Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR): A, MLRA, 4B Lat: 40.954706 Long: -124.099475 Datum:

Soil Map Unit Name: NWI classification: PEM1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks: see hydrology note on TP1-5

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Leontodon saxatilis	5		FACU
2. Agrostis stolonifera	15		FAC
3. Ranunculus repens	20	✓	FAC
4. Trifolium repens	3		FAC
5. Lotus corniculatus	7		FAC
6. Festuca arundinacea	28	✓	FAC
7. Potentilla anserina ssp. pacifica	2		Obl
8.			
9.			
10.			
11.			
	85 = Total Cover		42.5/17
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 15

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: 3/9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 2/1	92	2.5YR 2.5/4	8	C	PL		
12-24	10YR 5/1	51	7.5YR 5/8	49	C	M	CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Mckinleyville Ace City/County: Humboldt Sampling Date: 10/25/18

Applicant/Owner: Kevin Jenkins State: CA Sampling Point: 4-7

Investigator(s): Joseph Sader, Sara Polly Section, Township, Range: Sec. 32 T7N, R1E, HBM

Landform (hillslope, terrace, etc.): Uplifted Marine Terrace Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR): A, MLRA, 4B Lat: 40.954816 Long: -124.099677° Datum:

Soil Map Unit Name: NWI classification: PEM1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: See hydrology note on TP1-1

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. Juncus bufonius	10	X	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 90%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species ____	x 1 =	____
FACW species ____	x 2 =	____
FAC species ____	x 3 =	____
FACU species ____	x 4 =	____
UPL species ____	x 5 =	____
Column Totals: ____ (A)		____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ 5 - Wetland Non-Vascular Plants[1]

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: Recent disturbance has eliminated veg layer.

SOIL

Sampling Point: 4-7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 2/2	100					Loam	
12-24+	10YR 5/2	59	10YR 5/6	41	C	M	SCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Mckinleyville Ace City/County: Humboldt Sampling Date: 11/1/18

Applicant/Owner: Kevin Jenkins State: CA Sampling Point: TP 4-8a

Investigator(s): Joseph Sater, Sam Polly Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): Concave Slope (%): 2%

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes _____ No X	

Remarks: See hydrology note on TP1-1

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Agrostis stolonifera	49	X	FAC
2. Holcus lanatus	30	X	FAC
3. Ranunculus repens	2		FAC
4. Lotus corniculatus	4		FAC
5. Dactylis glomerata	10		FACU
6. ~~Lotus corniculatus~~			
7. Potentilla anserina ssp. pacifica	5		OBL
8. Rumex crispus	T		FAC
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: 4-8a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-21	10YR 2/1	100					Muck	
21-30+	10YR 6/1	39	7.5YR 5/8	36	C	M	CL	
			7.5YR 7/1	20	D	M		
			10YR 2/1	5	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- X Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Mckinleyville Ace City/County: Humboldt Sampling Date: 11/1/18
Applicant/Owner: Kevin Jenkins State: CA Sampling Point: TP4-8B
Investigator(s): Sam Polly, Joseph Saler Section, Township, Range: Sec. 32, T7N, R1E, HBM
Landform (hillslope, terrace, etc.): Uplifted marine terrace Local relief (concave, convex, none): None Slope (%): 1-2
Subregion (LRR): A, MLRA, 4B Lat: 40.954567° Long: -124.099560° Datum:
Soil Map Unit Name: NWI classification: PEM1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: see hydrology note on TP1-1

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Legatodon sarmentosus	2		FACU
2. Holcus lanatus	64	✓	FAC
3. Ranunculus repens	7		FAC
4. Trifolium fragiferum	T		FACW
5. Lotus corniculatus	6		FAC
6. Rumex acetosella	1		FACU
7.			
8. Hypochaeris radicata	2		FACU
9. Potentilla anserina ssp. pacifica	1		OBL
10. Agrostis stolonifera	10		FAC
11. Festuca arundinacea	4		FAC
	97 = Total Cover		48.5 / 19.4
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 3%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: TP 4-8B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 2/1	100					SL	
13-30+	10YR 6/1	55	10YR 5/8	45	C	M	SCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: McKinleyville Ace City/County: Humboldt Sampling Date: 11/1/18

Applicant/Owner: Kevin Jenkins State: CA Sampling Point: TP 5-1

Investigator(s): J.S., SP. Section, Township, Range: Sec. 32, T7N, R1E, HBM

Landform (hillslope, terrace, etc.): Uplifted Marine terrace Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR): A, MLRA 4B Lat: 40.954706 Long: -124.099791° Datum:

Soil Map Unit Name: NWI classification: PSS1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: see hydrology note on TP1-1

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Geranium dissectum	1		NL
2. Raphanus sativa	9	✓	NL
3. Spergularia rubra	4	✓	FAC
4. Trifolium subterraneum	1		NL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	15 = Total Cover		75 3
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 85

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species ____	x 1 =	____
FACW species ____	x 2 =	____
FAC species ____	x 3 =	____
FACU species ____	x 4 =	____
UPL species ____	x 5 =	____
Column Totals: ____ (A)		____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: Recent disturbance has produced large bare ground coverage

SOIL

Sampling Point: TP 5-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/2	100					GrLoam	fill
4-10	10YR4/4	100					VGrL	fill
10-17	10YR2/2	100					SL	
17-21	10YR2/2	100					L	
21-24+	10YR3/2	58	10YR4/6	42	C	M	SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Recent fill placement.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Mckinleyville, Ace City/County: Humboldt Sampling Date: 11/1/2018

Applicant/Owner: Kevin Jenkins State: CA Sampling Point: TP 5-3

Investigator(s): Joseph Saler, Sam Polly Section, Township, Range: Sec. 32, T7N, R1E, HBM

Landform (hillslope, terrace, etc.): Uplifted Marine Terrace Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR): A, MLRA, 4B Lat: 40.955235° Long: -124.094761 Datum:

Soil Map Unit Name: NWI classification: PSS1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: see hydrology note on TP1-1

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Spirea douglasii	1	✓	FACW
2.			
3.			
4.			
5.			
	1 = Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Agrostis stolonifera	15	✓	FAC
2. Holcus lanatus	7		FAC
3. Hypochaeris radicata	3		FACU
4. Leontodon saxatilis	2		FACU
5. Mentha pulegium	1		OBL
6. Bromus hordeaceus	1		FACU
7. Carex exsiccata	4		OBL
8. Lotus corniculatus	3		FAC
9. Panicum capillare	2		FAC
10 Sisyrinchium californicum	1		FACW
11. Deschampsia cespitosa ssp. holciformis	20	✓	FACW
	59 = Total Cover		29.5 / 11.8
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 41%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species ____	x 1 =	____
FACW species ____	x 2 =	____
FAC species ____	x 3 =	____
FACU species ____	x 4 =	____
UPL species ____	x 5 =	____
Column Totals: ____ (A)		____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: Recently disturbed

SOIL

Sampling Point: TP5-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/1	100					Loam	
10-14	10YR 3/2	94	10YR 4/6	6	C	M	Loam	
14-24	10YR 4/1	54	7.5YR 5/8	46	C	M	SCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: McKinleyville Ace City/County: Humboldt Sampling Date: 10/25/18

Applicant/Owner: Kevin Jenkins State: CA Sampling Point: TP 5-7

Investigator(s): Sam Polly, Joseph Sater Section, Township, Range: Sec. 32, T7N, R1E, HBM

Landform (hillslope, terrace, etc.): Uplifted Marine Terrace Local relief (concave, convex, none): None, Slope (%): 0-1

Subregion (LRR): A, MLRA, 4B Lat: 40.954698° Long: -124.094582° Datum:

Soil Map Unit Name: NWI classification: PEMIC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation X, Soil , or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes No X

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes No X	
Wetland Hydrology Present?	Yes No X	

Remarks: See hydrology note on TP1-1

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size:)			
1. Juncus bufonius	12	X	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 90%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: (A)

Total Number of Dominant Species Across All Strata: (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is ≤3.0[1]
- 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- 5 - Wetland Non-Vascular Plants[1]
- Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks: Recent disturbance has eliminated vegetation

SOIL

Sampling Point: TP5-7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 2/1	100					L	
13-24+	10YR 3/1	92	10YR 4/6	3	C	M	L	
			10YR 2/1	5				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: McKinleyville Ace City/County: McKinleyville Sampling Date: 8/22/19

Applicant/Owner: K. Jenkins State: CA Sampling Point: TP5-8

Investigator(s): S. Polly, J. Saler Section, Township, Range: Sec 32, T7N R1E HBM

Landform (hillslope, terrace, etc.): Marine Terrace Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): A, MLRA 4B Lat: 40.954635 Long: -124.099609 Datum: WGS 1984

Soil Map Unit Name: 225 NWI classification: PEMIC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Potentilla anserina ssp. pacifica	10		OBL
2. Lotus corniculatus	8		FAC
3. Agrostis stolonifera	62	X	FAC
4. Rheum rhaponticum	1		FAC
5. Ranunculus repens	1		FAC
6. Rumex crispus	1		FAC
7. Holcus lanatus	28	X	FAC
8.			
9.			
10.			
11.			
	III = Total Cover		55.5 / 22.2
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: TP 5-8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/1	95	2.5YR 2.5/4	5	C	PL	SL	
6-10	2.5Y 3/3	90	5YR 3/3	10	C	M	SL	compacted
10-24+	10YR 2/1	100					Muck	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): N/A

Water Table Present? Yes ____ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): N/A

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: McKinleyville Ace City/County: McKinleyville, Humb Sampling Date: 8/22/19

Applicant/Owner: K. Jenkins State: CA Sampling Point: TP5-9

Investigator(s): J. Saler, S. Polly Section, Township, Range: Sec 32, T7N, R1E

Landform (hillslope, terrace, etc.): Marine Terrace Local relief (concave, convex, none): _____ Slope (%): 1

Subregion (LRR): A, MLRA 4B Lat: 40.954454 Long: -124.099602 Datum: WGS 1984

Soil Map Unit Name: 225 NWI classification: PEM 1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks: 16.5' N of TP5-10
55' ESE of SE Burn Corner; 65' SE of NE burn corner

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5ft)			
1. Potentilla anserina ssp. pacifica	40	X	OBL
2. Holcus lanatus	10		FAC
3. Lotus corniculatus	40	X	FAC
4. Agrostis stolonifera	20		FAC
5. Juncus phaeocephalus	5		FACW
6. Symphyotrichum chilense	10		FAC
7. ~~Festuca~~ Festuca perennis	1		FAC
8. Anthoxanthum odoratum	2		FACU
9.			
10.			
11.			
	128 = Total Cover		64/15.6
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum Ø

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: TP5-9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR 2/1	95	5YR 3/4	5	C	M	L	
11-	2.5Y 5/2	55	7.5YR 4/1	5	C	PL	SCL	
			7.5YR 4/6	40	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: McKinleyville Ace City/County: McKinleyville/Hum Sampling Date: 08/22/19
Applicant/Owner: K. Jenkins State: CA Sampling Point: TPS-10
Investigator(s): J. Saler, S. Polly Section, Township, Range: Sec 32, T7N R1E HBM
Landform (hillslope, terrace, etc.): Marine Terrace Local relief (concave, convex, none): none Slope (%): 2
Subregion (LRR): A, MLRA 4B Lat: 40.954403 Long: -124.099602 Datum: WGS 1984
Soil Map Unit Name: 225 NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	Is the Sampled Area within a Wetland? Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks: 28' N of fence & 16.5' S of TPS-9
60' SE of SE barn corner; 75' SE of NE barn corner

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: _____)			
1. Festuca arundinacea	30	X	FAC
2. Agrostis stolonifera	55	X	FAC
3. Holcus lanatus	15		FAC
4. Potentilla anserina	2		OBL
5. Lotus corniculatus	1		FAC
6. Symphoricarpos chilense	1		FAC
7. Hypochaeris radicata	1		FACU
8.			
9.			
10.			
11.			
	106 = Total Cover		53/21.2
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		
% Bare Ground in Herb Stratum 0			

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ 5 - Wetland Non-Vascular Plants[1]
__ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: TP 5-10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/1	100					L	
8-24	2.5Y 5/2	55	7.5YR 4/6	45			SCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: McKinleyville Ace City/County: Humboldt Sampling Date: 11/1/18

Applicant/Owner: Kevin Jenkins State: CA Sampling Point: TP 6-1

Investigator(s): _____ Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks: see hydrology note on TP1-1

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Rubus armeniacus	7	X	FACU
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Juncus effusus	12		
2. Holcus lanatus	25	X	FAC
3. Lotus corniculatus	8		
4. Mentha pulegium	5		
5. Ranunculus repens	31	X	FAC
6. Parentucellia viscosa	1		
7. Potentilla anserina	4		
8. Agrostis stolonifera	5		
9. Rumex crispus	1		
10. Anthoxanthum odoratum	3		
11.			
	95 = Total Cover		47.5/19
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 5%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: TP6-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 2/2	100					Loam	
12-24+	10YR 3/2	58	10YR 4/6	42	C	M	SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: McKinleyville Ace City/County: McKinleyville, Humboldt Sampling Date: 8/22/19
Applicant/Owner: K. Jenkins State: CA Sampling Point: TP 6-2q
Investigator(s): J. Sales, S. Polly Section, Township, Range: Sec 32, T7N, R1E HBm
Landform (hillslope, terrace, etc.): Marine Terrace Local relief (concave, convex, none): none Slope (%): 3
Subregion (LRR): A, MLRA 4B Lat: 40.954602 Long: -124.099840 Datum: WGS1984
Soil Map Unit Name: 225 NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:
32' NW from NE barn corner; 36' from NE lumber rack corner
26' N of NW corner barn

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: _____)			
1. Mentha pulegium	20	X	OBL
2. Festuca perennis	50	X	FAC
3. ~~Erechtites californica~~ Leontodon saxatilis	10		FACU
4. Hypochaeris radicata	2		FACU
5. Medicago polymorpha	1		FACU
6. Polygonum aviculare	1		FAC
7. Festuca gramminacea	10		FAC
8. Helminthotheca echioides	1		FAC
9. Rumex conglomeratus	1		FACW
10. Lotus corniculatus	1		FAC
11. Potentilla anserina ssp. pacifica	1		OBL
	98	= Total Cover	49/19.6
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 15

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: TP 6-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR3/1	100					SL	
7-15	2.5Y3/1	100					GrLS	
15-26	10YR4/1	100					GrLS	
26-28+	10YR2/1	100					ML	Buried Histosol

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): N/A

Water Table Present? Yes _____ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): N/A

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: McKinleyville Ace City/County: McKinleyville, Humb Sampling Date: 8/22/19
Applicant/Owner: K. Jenkins State: CA Sampling Point: TP6-2b
Investigator(s): J. Saler, S. Polly Section, Township, Range: Sec 32, T7N, R1E HBM
Landform (hillslope, terrace, etc.): Marine Terrace Local relief (concave, convex, none): none Slope (%): 0-1
Subregion (LRR): A, MLRA 4B Lat: 40.954604 Long: -124.099769 Datum: WGS 1984
Soil Map Unit Name: 225 NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks: 5.5' East of TP6-2a; 40.5' from NE lumber rack corner 28' NW of NE barn corner & 27' NE of NW barn corner

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. Rumex conglomeratus	3		FACW
2. Potentilla anserina	40	X	OBL
3. Agrostis stolonifera	15		FAC
4. ~~Festuca arundinacea~~ (vegetation)	1		FACU
5. Cyperus eragrostis	1		FACW
6. Mentha pulegium	3		OBL
7. Holcus lanatus	2		FAC
8. Lotus corniculatus	28	X	FAC
9. Ranunculus repens	5		FAC
10. Phleum pratense	1		FAC
11. Festuca arundinacea	5		FAC
	104 = Total Cover		57/20.8
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 4

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: TP 6-2B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/1	100					SL	
6-18	10YR 2/1	80	2.5YR 2.5/3	20	C	M	SL	
18-24+	10YR 3/2	75	10YR 2/1	25	C	M	L	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Eureka, CA | Arcata, CA | Redding, CA | Willits, CA | Coos Bay, OR | Klamath Falls, OR

www.shn-engr.com

Natural Resources Assessment

Ace Hardware

McKinleyville, California



Prepared for:

Black Dog Partnership

August 2019
017257

Reference: 017257

Natural Resources Assessment

Ace Hardware
McKinleyville, California

Prepared for:
Black Dog Partnership

Prepared by:

1062 G St., Suite I
Arcata, CA 95521-5800
707-822-5785

August 2019

QA/QC:SRR

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Table of Contents

Page

List of Illustrations ii

Abbreviations and Acronyms iii

1.0 Introduction 1
- 1.1 Project Location 1
- 1.2 Site Description 1

2.0 Methodology 1
- 2.1 Review of Existing Data 1
- 2.2 Coordination with Permitting and Regulatory Agencies 2
- 2.3 Field Observations and Studies 2

3.0 Environmental Setting 3
- 3.1 Geologic and Soil Composition 3
- 3.2 Vegetation 3
- 3.3 Offsite Conditions 3

4.0 Regulatory Setting 3
- 4.1 Federal Laws 3
  - 4.1.1 Clean Water Act Sections 404 and 401 3
  - 4.1.2 Fish and Wildlife Coordination Act 4
  - 4.1.3 Federal Endangered Species Act 5
  - 4.1.4 Migratory Bird Treaty Act 5
- 4.2 State Laws 6
  - 4.2.1 Porter-Cologne Water Quality Control Act 6
  - 4.2.2 California Endangered Species Act 6
  - 4.2.3 Native Plant Protection Act 6
  - 4.2.4 California Environmental Quality Act 7
  - 4.2.5 California Fish and Game Code Section 1600 8
  - 4.2.6 California Fish and Game Code Sections 3503 and 3513 8
  - 4.2.7 Fully Protected Species and Species of Special Concern 8
  - 4.2.8 Natural Community Conservation Planning Act 9
- 4.3 Other Statutes, Codes, and Policies–Humboldt County Streamside Management Area Ordinance 9

5.0 Results 10
- 5.1 Special-status Plant Species 10
- 5.2 Special-status Habitats and Natural Communities 12
  - 5.2.1 Designated Critical Habitat 12
  - 5.2.2 Vegetation Alliances 12
  - 5.2.3 Wetland and Riparian Habitats 12
  - 5.2.4 Nesting Bird Habitat 12
  - 5.2.5 Wildlife Movement Corridors 12

6.0 Conclusions 13
- 6.1 Special-status Plant Species 13

Table of Contents, Continued

Page

6.2 Special-status Habitats and Natural Communities 13
6.2.1 Designated Critical Habitat 13
6.2.2 Vegetation Alliances 13
6.2.3 Nesting Bird Habitat 13
6.2.4 Wildlife Movement Corridors 13

7.0 Recommendations 13

8.0 References 14

Appendices

1. Site Photographs
2. Regionally-Occurring Special-status Plant Species Scoping List
3. Observed Botanical Species List

List of Illustrations

Figures **Follows Page**

1. Project Location 1
2. Study Area 1

Abbreviations and Acronyms

m	meters
APN	Assessor's parcel number
BIOS	Biogeographical Information and Observation System
C	candidate
CCH	Consortium of California Herbaria
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CE	Candidate Endangered
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CNRA	California Natural Resources Agency
CRPR	California Rare Plant Rank
CT	candidate threatened species status
CWA	Clean Water Act
D	delisted species status
DPS	distinct population segment/species status
E	endangered species status
EPA	United States Environmental Protection Agency
ESU	evolutionarily significant unit/species status
FESA	Federal Endangered Species Act
FP	fully protected species status
G1/S1	critically imperiled species heritage rank
G2/S2	imperiled species heritage rank
G3/S3	vulnerable species heritage rank
G4/S4	apparently secure species heritage rank
G5/S5	secure species heritage rank
GIS	Geographic Information System
IPaC	Information for Planning and Conservation
LSA	Lake and Streambed Alteration
MBTA	Migratory Bird Treaty Act
NCCP	Natural Community Conservation Planning
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NPPA	Native Plant Protection Act
NRA	natural resources assessment
PT	proposed threatened species status
RWQCB	Regional Water Quality Control Board
SMA	streamside management area
SSC	species of special concern
SWRCB	State Water Resources Control Board
T	threatened species status
UCB	University of California at Berkeley
U.S.	United States
USC	United States Code
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VegCAMP	Vegetation Classification and Mapping Program
WDR	Waste Discharge Requirement
WL	watch list species status

1.0 Introduction

SHN has conducted site investigations, literature reviews, and assessments to determine biological resources present in relation to the Black Dog Partnership project site in the vicinity of McKinleyville, California. The project is proposing development for commercial expansion purposes. This natural resources assessment (NRA) will serve as a tool to identify potential sensitive natural resources that may occur within the study area and to provide recommendations to reduce or eliminate impacts to biological resources.

1.1 Project Location

The project is located in the Arcata North 7.5-minute United States Geological Survey (USGS) Quadrangle in an unincorporated area of Humboldt County, California (Figure 1). The project occurs in Section 32 of Township 07 North, Range 01 East. The site is in the community of McKinleyville, California. The proposed project site is located on Assessor's parcel numbers (APNs) 510-081-001 and 510-081-002 with a street address of 2725 Central Ave., McKinleyville, California 95519.

1.2 Site Description

Proposed project activities occur within vacant portions of the parcels. The study area (Figure 2) is largely composed of a graveled terrace and grassland (Appendix 1, Photos 1 and 2). There is also a palustrine emergent wetland in the southwest section of the study area (refer to the Wetland and Other Waters Delineation Report [SHN, 2019]) with a vegetated drainage ditch that is no longer connected to a culvert (Photo 3). There is existing commercial use immediately adjacent to the study area.

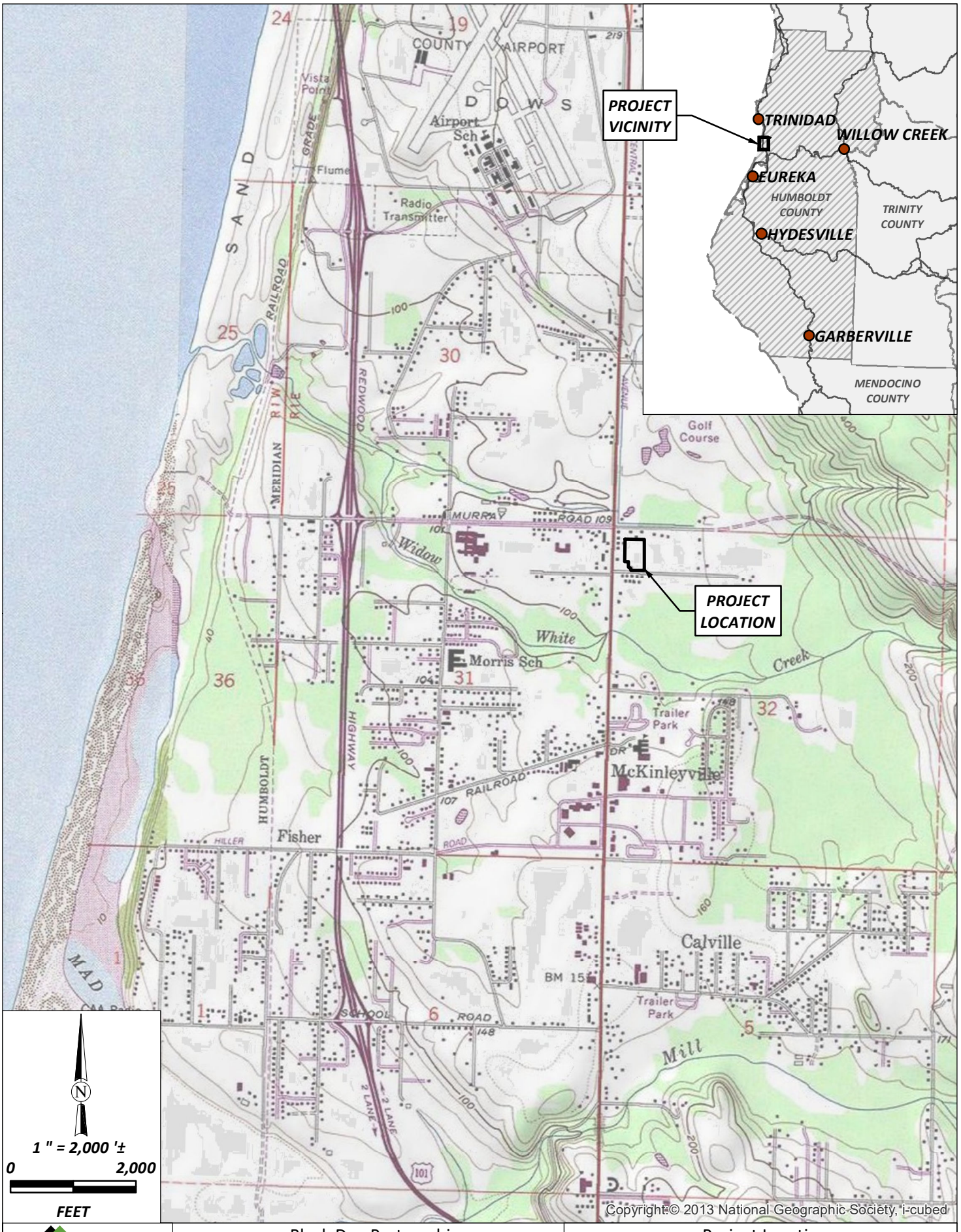
The site consists of native loam topsoil over sandy clay loam subsoils, on the coastal plain that makes up the community of McKinleyville. The grassland predominantly supports non-native grass and forb species, including perennial rye grass (*Festuca perennis*), sweet vanilla grass (*Anthoxanthum odoratum*), sheep sorrel (*Rumex acetosella*), hawkbit (*Leontodon saxatilis*), and wild radish (*Raphanus sativus*) (Appendix 1, Photo 2). Within the grassland area, there are localized depressions predominantly supporting pennyroyal (*Mentha pulegium*) and California golden eyed grass (*Sisyrinchium californicum*). The disturbed section of the graveled terrace adjacent to development supports perennial wild rye, toad rush (*Juncus bufonius*) and sweet vanilla grass (Appendix 1, Photo 1). Vegetation management in the last two years has recently disturbed this area. The palustrine emergent wetland predominantly supports creeping buttercup (*Ranunculus repens*), creeping bentgrass (*Agrostis stolonifera*), and silverweed (*Potentilla anserina ssp. pacificus*).

2.0 Methodology

2.1 Review of Existing Data

This NRA includes a review of existing data and information related to special-status species of plants and sensitive natural communities that may be present.

The findings of this report are the result of several sources, including a review of existing literature regarding sensitive resources that have the potential to occur within the study area. The study area was defined by including a 100-foot extension from potential project components. Biological scoping included a review of the following sources:



Path: \\Eureka\Projects\2017\017257-Mknlyville-Ace\GIS\PROJ_MXD\NRA_Fig1_ProjectLocation.mxd User Name: jsousa DATE: 7/30/19, 11:52AM

	Black Dog Partnership Natural Resources Assessment McKinleyville, California	Project Location SHN 017257
July 2019	NRA_Fig1_ProjectLocation	Figure 1



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SHN	Black Dog Partnership Natural Resources Assessment McKinleyville, California	Study Area SHN 017257
	August 2019 | NRA_Fig2_StudyArea	Figure 2

- California Natural Diversity Database (CNDDB) query for Arcata North and surrounding USGS 7.5-minute topographic quadrangles (Arcata North, Tyee City, Eureka, Blue Lake, Crannell, Trinidad, Panther Creek, and Arcata South) (California Department of Fish & Wildlife, [CDFW], 2019a)
- Biogeographical Information and Observation System's Rarefind[1] database (BIOS; CDFW, 2019b)
- Electronic Inventory of Rare and Endangered Vascular Plants of California (California Native Plant Society, [CNPS], 2019) query for a list of all plant species reported for project area, and surrounding USGS 7.5-minute topographic quadrangles
- United States Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) was queried for threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of, and/or may be affected by, the proposed project (USFWS, 2019a)
- USFWS Threatened and Endangered Species Active Critical Habitat Report Geographic Information System (GIS) database (USFWS, 2019b)

From the sources listed above, a list of potential target special-status species for the study area was compiled. Appendix 1 includes plant species reported by the CNDDB and USFWS, and species listed in the CNPS inventory of rare plants.

2.2 Coordination with Permitting and Regulatory Agencies

If regulatory agencies (CDFW and U.S. Army Corps of Engineers [USACE]) require further investigation, SHN will coordinate another site visit as needed.

2.3 Field Observations and Studies

A total of five hours of field observations were made within the approximate 3-acre study area (Figure 2) over the following dates:

- May 08, 2019 - Natural Resources Assessment (NRA)
- July 09, 2019 - Natural Resources Assessment (NRA)

The NRA site visits included two seasonally-appropriate surveys for botanical species reported from the region that had a moderate or higher potential for occurrence (Appendix 2). A list of all botanical species encountered is presented in Appendix 4. Plants observed during site visits were identified to the lowest taxonomic level possible to distinguish special-status species from others Botanical nomenclature of species in this assessment follows the *Jepson Manual (*Baldwin et al., 2012) and subsequent online revisions (Consortium of California Herbaria, [CCH], 2016). In accordance with the botanical survey protocol recommended by CDFW, botanical surveys were floristic in nature, with an attempt to identify all species present, including possible special-status species and natural communities (CDFW, 2009).

Site photographs from the site visits are included in Appendix 1.

Additionally, a wetland delineation was completed within the study area by SHN staff and is separate from this biological report.

[1] Rarefind is a "positive detection" database. The absence of data does not imply absence of special-status species.

3.0 Environmental Setting

The project area is situated at a 97-foot elevation above mean sea level in the Widow White Creek drainage system. Widow White Creek flows into Norton Creek, which connects to the Mad River approximately 1.2 mile northwest of the project location. Land uses in the vicinity are primarily residential.

The region experiences a Mediterranean climate with warm, dry summers and cool, wet winters. The bulk of annual precipitation occurs in the fall, winter, and spring (December averages 8.12 inches). Summers are typically dry (August averages 0.31 inches). The total annual precipitation average is 40.53 inches.

3.1 Geologic and Soil Composition

The site is set in the coastal foothills approximately 1.5 miles east of the Pacific Ocean coast. Geologic composition is comprised of unconsolidated and semi-consolidated alluvium, lake, playa, and terrace deposits. Most deposits are non-marine, but includes marine deposits near the coast (USGS, 1977).

Refer to the wetland delineation report for determination of the soils in the study area (SHN, 2019).

3.2 Vegetation

Within the project area, vegetation is comprised of native and non-native forbs, grasses, and coniferouss. Non-native plants made up 71% of the plant species composition. Plant species observed during fieldwork are presented in Appendix 3. The area adjacent to the graveled terrace has been recently disturbed by vegetation management-related activities. Plants were indentified with vegetative features and growth patterns. Vegetation density was low throughout the recently disturbed area (Appendix 1, Photo 1).

3.3 Offsite Conditions

The habitats adjacent to the project areas are patches of various vegetation types, including mixed coniferouss, shrubs, and grassland communities within a residential and commercial setting. Existing habitat quality within the study area is consistent with adjacent areas. Adjacent areas provide similar habitat in relation to Widow White Creek corridors.

4.0 Regulatory Setting

Regulatory authority over biological resources is shared by federal, State, and local authorities under a variety of legislative acts. The following section summarizes the federal, State, and local regulations for special-status species, jurisdictional waters of the U.S. and State of California, and other sensitive biological resources. This section provides a listing and overview of these federal, State, and local laws.

4.1 Federal Laws

4.1.1 Clean Water Act Sections 404 and 401

Under Section 404 (33 U.S. Code (USC) 1341) of the Clean Water Act (CWA), as amended, the USACE retains primary responsibility for permits to discharge dredged or fill material into waters of the U.S. All discharges of dredged or fill material into jurisdictional waters of the U.S. that result in permanent or temporary losses of waters of the U.S. are regulated by the USACE (U.S. Environmental Protection Agency, [EPA], 2002). A

permit from the USACE must be obtained before placing fill or grading in wetlands or other waters of the U.S., unless the activity is exempt from CWA Section 404 regulation (for example, certain farming and forestry activities).

The USACE defines wetlands as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (USACE Environmental Laboratory, 1987). In other words, the USACE defines wetlands by the presence of all three wetland indicators: hydrophytic vegetation, hydric soils, and wetland hydrology.

Waters of the U.S. are defined in 33 Code of Federal Regulations (CFR) Part 328. They include traditional navigable waters; relatively permanent, non-navigable tributaries of traditional navigable waters; and certain wetlands. Following recent court cases, the EPA and USACE published a memorandum entitled "Clean Water Act Jurisdiction" (EPA/USACE, 2008) to guide the determination of jurisdiction over waters of the US, especially for wetlands. The applicability of Section 404 permitting over discharges to wetlands is, therefore, a two-step process: 1) determining the areas that are wetlands, and 2) where a wetland is present, assessing the wetland's connection to traditional navigable waters and non-navigable tributaries to determine whether the wetland is jurisdictional under the CWA. A wetland is considered jurisdictional if it meets certain specified criteria.

The USACE is required to consult with the USFWS and/or National Marine Fisheries Service (NMFS) under Section 7 of the Federal Endangered Species Act (FESA) if the action subject to CWA permitting could result in "Take" of federally listed species or an adverse effect to designated critical habitat. The project is within the jurisdiction of the San Francisco District of the USACE.

Section 401 of the CWA (33 USC 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the U.S. to obtain a certification from the state in which the discharge originates or would originate, or if appropriate, from the interstate water pollution control agency having jurisdiction over the affected waters at the point where the discharge originates or would originate, that the discharge will comply with the applicable effluent limitations and water quality standards. A certification obtained for the construction of any facility must also pertain to the subsequent operation of the facility. The responsibility for the protection of water quality in California rests with the State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCBs). The project is within the jurisdiction of the North Coast RWQCB.

4.1.2 Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (16 USC Sections 661-667e, as amended, 1958, 1978, 1994, and 1995) requires that whenever waters, the channel of a stream, or other body of water are proposed or authorized to be modified by a public or private agency under a federal license or permit, the federal agency must first consult with the USFWS and/or NMFS and with the head of the agency exercising administration over the wildlife resources of the state where construction will occur (in this case, the CDFW). These guidelines aim at conservation of birds, fish, mammals, and all other classes of wild animals, and all types of aquatic and land vegetation upon which wildlife is dependent (USFWS, 1934).

If direct permanent impacts occur to waters of the U.S. from a proposed project, then a permit from USACE under CWA Section 404 is required for the construction of the proposed project. USACE is required to

consult with USFWS and/or NMFS as appropriate regarding potential impacts to federally listed species under FESA. Such action may prompt consultation with CDFW, which would review the project pursuant to California Endangered Species Act (CESA) and issue a consistency letter with USFWS and/or NMFS, if required.

4.1.3 Federal Endangered Species Act

The United States Congress passed the FESA in 1973 to protect species that are endangered or threatened with extinction (USFWS, 1973). The FESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend and within which they live. The USFWS and the NMFS are the designated federal agencies responsible for administering the FESA.

The FESA prohibits the "Take" of endangered or threatened wildlife species. A "Take" is defined as harassing, harming (including significantly modifying or degrading habitat), pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species, or any attempt to engage in such conduct (16 USC 1531, 50 CFR 17.3). An activity can be defined as a "Take" even if it is unintentional or accidental. Taking can result in civil or criminal penalties. Activities that could result in "Take" of a federally listed species require an incidental "Take" authorization resulting from FESA Section 7 consultation or FESA Section 10 consultation. Plants are legally protected under the FESA only if "Take" occurs on federal land or from federal actions, such as, issuing a wetland fill permit.

A federal endangered species is one that is considered in danger of becoming extinct throughout all, or a significant portion, of its range. A federal threatened species is one that is likely to become endangered in the foreseeable future. The USFWS also maintains a list of species proposed for listing as threatened or endangered. Proposed species are those for which a proposed rule to list as endangered or threatened has been published in the Federal Register. In addition to endangered, threatened, and proposed species, the USFWS maintains a list of candidate species. Candidate species are those for which the USFWS has on file sufficient information to support issuance of a proposed listing rule.

Pursuant to the requirements of the FESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally-listed endangered or threatened species may be present in the project area, and determine whether the proposed project will have a potentially significant impact on such a species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under the FESA or result in the destruction or adverse modification of critical habitat designated or proposed to be designated for such species (16 USC 1536[3], [4]). Project-related impacts to species on the FESA endangered or threatened list would be considered significant, and would require mitigation.

4.1.4 Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) of 1918 makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in CFR Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21; USFWS, 1918). The MBTA also prohibits disturbance and harassment of nesting migratory birds at any time during their breeding season. The USFWS is responsible for enforcing the MBTA (16 USC 703).

4.2 State Laws

4.2.1 Porter-Cologne Water Quality Control Act

The state and RWQCB also maintain independent regulatory authority over the placement of waste, including fill, into waters of the state under the Porter-Cologne Water Quality Control Act (SWRCB, 1969). Waters of the state are defined by the Porter-Cologne Water Quality Control Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The SWRCB protects all waters in its regulatory scope, but has special responsibility for isolated wetlands and headwaters. These water bodies might not be regulated by other programs, such as, Section 404 of the CWA. Waters of the state are regulated by the RWQCBs under the State Water Quality Certification Program, which regulates discharges of dredged and fill material under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. Projects that require an USACE permit, or fall under other federal jurisdiction, and have the potential to impact waters of the state are required to comply with the terms of the Water Quality Certification Program. If a proposed project does not require a federal license or permit, but does involve activities that may result in a discharge of harmful substances to waters of the state, the RWQCBs have the option to regulate such activities under their state authority in the form of Waste Discharge Requirements (WDRs) or certification of WDRs.

4.2.2 California Endangered Species Act

The State of California enacted the CESA in 1984 (CDFW, 1984). The CESA is similar to the FESA, but pertains to state-listed endangered and threatened species. Under the CESA, the CDFW has the responsibility for maintaining a list of threatened and endangered species designated under state law (California Fish and Game Code [CFGC] 2070; CDFW, 1998). Section 2080 of the CFGC prohibits "Take" of any species that the commission determines to be an endangered or threatened species. "Take" is defined in Section 86 of the CFGC as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

The state and federal lists of threatened and endangered species are generally similar; however, a species present on one list may be absent from the other. CESA regulations are also somewhat different from the FESA in that the California regulations include threatened, endangered, and candidate plants on non-federal lands within the definition of "Take." CESA allows for "Take" incidental to otherwise lawful development projects.

Pursuant to the requirements of the CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the project area and determine whether the proposed project will have a potentially significant impact on such species. Project-related impacts to species on the CESA endangered or threatened list (or, in addition, designated by the CDFW as a Species of Special Concern [SSC], which is a level below threatened or endangered status) would be considered significant and would require mitigation.

4.2.3 Native Plant Protection Act

The Native Plant Protection Act (NPPA; Sec.1900-1913 of the CFGC) was enacted in 1977 and allows the Fish and Game Commission to designate plants as rare or endangered. The NPPA precedes the CESA. Statewide, there are 64 species, subspecies, and varieties of plants that are protected as rare under the NPPA. The NPPA prohibits take of endangered or rare native plants, but includes some exceptions for agricultural and nursery operations; emergencies; and after properly notifying CDFW for vegetation removal from canals,

roads, and other sites, changes in land use, and in certain other situations. Plants listed as rare or endangered under the NPPA should be considered during project review as if they were listed under the CESA.

Appendix 2 includes potentially-occurring endangered or rare native plants that may occur in the project area (including CNPS lists).

4.2.4 California Environmental Quality Act

California Environmental Quality Act (CEQA) Guidelines Sections 15125(c) and 15380(d) provide that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria (CNRA, 1970). Thus, CEQA provides the ability to protect a species from potential project impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

CNPS maintains an inventory of plant species native to California, with populations that are significantly reduced from historical levels, occur in limited distribution, or otherwise are rare or threatened with extinction. This information is published in the Inventory of Rare and Endangered Plants of California (CNPS, 2018). Taxa with a California Rare Plant Rank (CRPR) of 1A, 1B, 2A, 2B, and 3 in the CNPS inventory consist of plants that are eligible for state listing, and meet the definition of Rare or Endangered under CEQA Guidelines Sections 15125(c) and 15380(d). CRPR 4 populations may qualify for consideration under CEQA if they are peripheral or disjunct populations; represent the type locality of the species; or exhibit unusual morphology and/or occur on unusual substrates.

Additionally, CDFW maintains lists of special-status animals and plants. These lists include a species conservation ranking status from multiple sources, including FESA, CESA, federal departments with unique jurisdictions, CNPS, and other non-governmental organizations. Based on these sources, CDFW assigns a heritage rank to each species according to their degree of imperilment (as measured by rarity, trends, and threats). These ranks follow NatureServe's Heritage Methodology, in which all species are listed with a G (global) and S (state) rank. Species with state ranks of S1-S3 are also considered highly imperiled.

CEQA Guidelines checklist IV(b) calls for the consideration of riparian habitats and sensitive natural communities. Sensitive vegetation communities are natural communities and habitats that are either unique, of relatively limited distribution in the region, or of particularly high wildlife value. However, these communities may or may not necessarily contain special-status species. Sensitive natural communities are usually identified in local or regional plans, policies, or regulations, or by the CDFW (that is, the CNDDB and Vegetation Classification and Mapping Program [VegCAMP]) or the USFWS. Impacts to sensitive natural communities and habitats must be considered and evaluated under CEQA (California Code of Regulations [CCR]: Title 14, Div. 6, Chap. 3

Although sensitive natural communities do not (at present) have legal protection, CEQA calls for an assessment of whether any such resources would be affected, and requires a finding of significance if there will be substantial losses. High-quality occurrences of natural communities with heritage ranks of 3 or lower are considered by CDFW to be significant resources and fall under the CEQA guidelines for addressing impacts. Local planning documents (such as, general plans) often identify these resources as well. Avoidance, minimizations, or mitigation measures should be implemented if project-affected stands of rare vegetation types or natural communities are considered high-quality occurrences of the given community.

As a trustee agency under CEQA, CDFW reviews potential project impacts to biological resources, including wetlands. In accordance with the CEQA thresholds of significance for biological resources, areas that meet the state criteria for wetlands and could be impacted by a project must be analyzed. Pursuant to CFGC Section 2785, CDFW defines wet areas as "lands which may be covered periodically or permanently with shallow water and which include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, fens, and vernal pools."

4.2.5 California Fish and Game Code Section 1600

Streams, lakes, and riparian vegetation as habitat for fish and other wildlife species, are subject to jurisdiction by the CDFW under Sections 1600-1616 of the CFGC (CDFW, 2019c). Any activity that will do one or more of the following generally require a Lake and Streambed Alteration (LSA) Agreement:

1) Substantially obstruct or divert the natural flow of a river, stream, or lake
2) Substantially change or use any material from the bed, channel, or bank of a river, stream, or lake
3) Deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake.

The term "stream," which includes creeks and rivers, is defined in the CCR as, "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life." This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation (14 CCR 1.72).

In addition, the term "stream" can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife. Riparian is defined as "on, or pertaining to, the banks of a stream"; therefore, riparian vegetation is defined as vegetation that occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself. Removal of riparian vegetation also requires an LSA agreement from CDFW.

4.2.6 California Fish and Game Code Sections 3503 and 3513

According to Section 3503 of the CFGC, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird (except English sparrows [*Passer domesticus*] and European starlings [*Sturnus vulgaris*]). Section 3503.5 specifically protects birds in the orders Falconiformes and Strigiformes (birds-of-prey). Section 3513 essentially overlaps with the MBTA, prohibiting the "Take" or possession of any migratory non-game bird. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "Take" by the CDFW.

4.2.7 Fully Protected Species and Species of Special Concern

The classification of "fully protected" was the CDFW's initial effort to identify and provide additional protection to those animals that were rare or faced with possible extinction. Lists were created for fishes, amphibians and reptiles, birds, and mammals. Most of the species on these lists have subsequently been listed under CESA and/or FESA. The CFGC sections (fish at Sec. 5515, amphibians and reptiles at Sec. 5050, birds at Sec. 3511, and mammals at Sec. 4700) dealing with "fully protected" species state that these species "…may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species," (CDFW, 1998)

although “Take” may be authorized for necessary scientific research. This language makes the “fully protected” designation the strongest and most restrictive regarding the “Take” of these species. In 2003, the code sections dealing with fully protected species were amended to allow the CDFW to authorize “Take” resulting from recovery activities for state-listed species.

SSC are broadly defined as animals not listed under the CESA, but that are nonetheless of concern to the CDFW because they are declining at a rate that could result in listing or historically occurred in low numbers with known threats to their persistence currently existing. This designation is intended to result in special consideration for these animals by the CDFW, land managers, consulting biologists, and others, and is intended to focus attention on the species to help avert the need for costly listing under CESA and cumbersome recovery efforts that might ultimately be required. This designation also is intended to stimulate collection of additional information on the biology, distribution, and status of poorly known at-risk species, and focus research and management attention on them. Although the SSC designation provides no special legal status, they are given special consideration under CEQA during project review.

4.2.8 Natural Community Conservation Planning Act

The Natural Community Conservation Planning (NCCP) Act of 1991 is an effort by the State of California and numerous private and public partners that is broader in its orientation and objectives than the CESA and FESA (refer to discussions above). The primary objective of the NCCP Act is to conserve natural communities at the ecosystem scale while accommodating compatible land uses (CDFW, 1991). The NCCP Act seeks to anticipate and prevent the controversies and gridlock caused by species listings by focusing on the long-term stability of wildlife and plant communities and including key interests in the process.

No regionally-occurring natural community or associated plan is listed by the state for the project area.

4.3 Other Statutes, Codes, and Policies–Humboldt County Streamside Management Area Ordinance

The Humboldt County General Plan was adopted October 23, 2017. It includes policies regarding critical habitats, sensitive habitats, streamside management areas (SMAs), wetlands, oak woodlands, and invasive species. Critical habitats are habitats necessary for the protection of threatened or endangered species listed under the FESA. In addition to species and communities identified by the USFWS and CDFW, migratory deer winter ranges, Roosevelt elk ranges, avian rookery/nesting sites, streamside areas, and wetlands areas are defined as sensitive habitats (Humboldt County, 2019).

Streamside management areas include locations mapped by the County as SMA and wetland combining zones, subject to site-specific biological verification. The outer boundary of the SMA is defined as 100 feet on either side of perennial streams, measured as the horizontal distance from the top of bank or edge of riparian drip-line (whichever is greater). For intermittent streams, the SMA is defined as 50 feet, measured as the horizontal distance from the top of bank or edge of riparian drip-line, whichever is greater. The width of SMAs shall not exceed 200 feet measured as a horizontal distance from the top of bank. Development standards for wetlands shall be consistent with the standards for SMAs, except that the widths of the SMA for wetlands are 50 feet for seasonal wetlands and 100 feet for perennial wetlands, beginning at the edge of the delineated wetland. Discretionary projects that may result in a significant effect on oak woodlands must evaluate and mitigate any impacts, consistent with the provisions of CEQA.

5.0 Results

From the review of existing data (see Section 2.0 Methodology), a list of potentially occurring special-status plant species for the study area was compiled. Appendix 2 includes a list of all plant species reported from the queries, their preferred habitat, and whether there is suitable habitat present within the study area for the species. The potential for occurrence of those species included on the list were then evaluated based on the habitat requirements of each species relative to the conditions observed during the field surveys.

Each species was evaluated for its potential to occur in the study area according to the following criteria:

- **None**. Species listed as having "none" are those species for which:
  - there is no suitable habitat present in the study area (that is, habitats in the study area are unsuitable for the species requirements [for example, elevation, hydrology, plant community, disturbance regime, etc.]).
- **Low**. Species listed as having a "low" potential to occur in the study area are those species for which:
  - there is no known record of occurrence in the vicinity, and
  - there is marginal or very limited suitable habitat present within the study area.
- **Moderate**. Species listed as having a "moderate" potential to occur in the study area are those species for which:
  - there are known records of occurrence in the vicinity, and
  - there is suitable habitat present in the study area.
- **High**. Species listed as having a "high" potential to occur on the study area are those species for which:
  - there are known records of occurrence in the vicinity (there are many records and/or records in close proximity), and
  - there is highly suitable habitat present in the study area.
- **Present**. Species listed as "present" in the study area are those species for which:
  - the species was observed in the study area.

5.1 Special-status Plant Species

Based on a review for special-status plant species, 65 special-status plant species have been reported from the region consisting of the study area's quadrangle and surrounding quadrangles. Of the special-status plant species reported in the region, 58 plant species are considered to have a no or low potential to occur within the study area and 7 species have a moderate or higher potential to occur within the study area (Appendix 2). Species that have a moderate or higher potential to occur within the study area are described below. No special-status plant species were observed within the project area.

Pacific gilia (*Gilia capitata* ssp. *pacifica*) is an annual herb in the Polemoniaceae family. It is neither state nor federally listed, but has a CRPR of 1B.2 and heritage ranks of G5T3/S2. Reported habitats include coastal bluff scrub, chaparral, and coastal prairie, valley, and foothill grasslands, ranging in elevation from 5 to 1,345 meters above sea level. There is no Rarefind occurrence for this taxon within the nine-quad search. Although suitable habitat may exist within the project area for this species, it was not detected.

Short-leaved evax (*Hesperevax sparsiflora* var. *brevifolia*) is an annual herb in the Asteraceae family. It is neither state nor federally listed, but has a CRPR of 1B.2 and heritage ranks of G4T3/S2. Reported habitats include coastal bluff scrub (sandy), coastal dunes, coastal prairie from 0 to 215 meters above sea level. There is no Rarefind occurrence for this taxon within the nine-quad search. Although suitable habitat may exist within the project area for this species, it was not detected.

Howell's montia (*Montia howellii*) is an annual herb in the Montiaceae family. It is neither state nor federally listed, but has a CRPR of 2B.2 and heritage ranks of G3G4/S2. Reported habitats include meadows/seeps, north coast coniferousous forest, and wetlands. It occurs in vernally wet sites (often on compacted soil), ranging from 10 to 1,005 meters above sea-level. Within the nine-quad search, there are 110 Rarefind occurrences. Although suitable habitat may exist within the project area for this species, it was not detected.

Wolf's evening-primrose (*Oenothera wolfii*) is a perennial herb in the Onagraceae family. It is neither state nor federally listed, but has a CRPR of 1B.1 and heritage ranks of G2/S1. Reported habitats include Coastal bluff scrub, coastal dunes and prairie, lower montane coniferous forest in sandy, usually mesic areas. Within the nine-quad search, there are 29 occurrences. Although suitable habitat may exist within the project area for this species, it was not detected.

Maple-leaved checker-bloom (*Sidalcea malachroides*) is a perennial herb in the Malvaceae family. It is neither state nor federally listed, but has a CRPR of 4.2 and heritage ranks of G3/S3. Reported habitats include broadleaf upland forest, coastal prairie and scrub, north coast coniferous forest, riparian woodland, often in disturbed areas. Within the nine -quad search, there are 136 occurrences. Although suitable habitat may exist within the project area for this species, it was not detected.

Siskiyou checker-bloom (*Sidalcea malviflora* ssp. *patula*) is a perennial rhizomatous herb in the Malvaceae family. It is neither state nor federally listed, but has a CRPR of 1B.2 and heritage ranks of G5T2/S2. Reported habitats include coastal bluff scrub, coastal prairie, north coast coniferous forest, open coastal forest, and roadcuts from 5 to 1,255 meters above sea level. Within the nine -quad search, there are 49 occurrences. Although suitable habitat may exist within the project area for this species, it was not detected.

Coast checker-bloom (*Sidalcea oregana ssp. exima*) is a perennial herb in the Malvaceae family. It is neither state nor federally listed, but has a CRPR of 1B.2 and heritage ranks of G5T2/S2. Reported habitats include north coast and lower montane coniferous forests, meadows and seeps, near meadows, and in gravelly soil from 5 to 1,805 meters above sea level. Within the nine -quad search, there are 19 occurrences. Although suitable habitat may exist within the project area for this species, it was not detected.

One of two required seasonally-appropriate surveys of the study area did not locate any special-status plant species. The findings in this report represent a “snapshot in time” and it is possible that false negative surveys for rare plant species could occur. An additional botanical survey will be necessary to ensure a complete inventory of plants present within the project area.

5.2 Special-status Habitats and Natural Communities

5.2.1 Designated Critical Habitat

USFWS's Critical Habitat database for habitat designated as critical for species listed under the FESA reported that the nearest critical habitat is the Mad River, specifically for the southern distinct population segment (DPS) of eulachon (*Thaleichthys pacificus*) and steelhead (*Oncorhynchus mykiss irideus*).

5.2.2 Vegetation Alliances

Sensitive natural communities are habitats that are generally defined by vegetation type and geographical location and are increasingly restricted in abundance and distribution. Recognition of natural communities is an ecosystem-based approach to maintaining biodiversity in California. High-quality occurrences of natural communities with heritage ranks of 3 or lower are considered by CDFW to be significant resources and fall under the CEQA guidelines for addressing impacts. One sensitive natural community was observed in the study area in the palustrine emergent wetland (Figure 2).

Much of the study area consists of non-native grasslands and a disturbed graveled terrace supporting creeping bent grass and perennial ryegrass. The non-native grassland most closely resembles a combination of *Agrostis (gigantea, stolonifera)-Festuca Arundinacea* Semi-Natural Herbaceous Stand (Bent grass-tall fescue meadows) and Lolium perenne Semi-Natural Herbaceous Stands (Perennial rye grass fields). The creeping bent grass Semi-Natural Stands are non-native, disturbance-adapted semi-natural stands and are considered a threat to remaining patches of native coastal prairie (Sawyer et al., 2009). The perennial ryegrass Semi-Natural stands are characteristic of regularly-disturbed and agricultural wetland areas .

The wetland in the southwest section of the study area is predominantly creeping buttercup, silverweed, and creeping bent grass. It most closely resembles a combination of an *Argentina egedii* Herbaceous Alliance (Pacific silverweed marsh [G4/S2]) and *Agrostis stolonifera* Semi-Natural Herbaceous Stand.

5.2.3 Wetland and Riparian Habitats

Refer to the wetland delineation report prepared by SHN staff for a full description of wetland and riparian habitats in the project area. Riparian areas typically provide habitat for a mosaic of wildlife species and are considered sensitive habitat under the Humboldt County Streamside Management Area Ordinance.

5.2.4 Nesting Bird Habitat

All locations with a shrub or tree canopy layer within the study area may provide suitable nesting habitat for a diverse assemblage of migratory birds. Additionally, some species, such as western meadowlark (*Sturnella neglecta*), may nest in tall grasses.

5.2.5 Wildlife Movement Corridors

Water courses and their associated riparian zones are likely the primary wildlife movement corridors due to their complex structure, providing cover and hiding places from predators, and the extensive connectivity to other habitats the riparian zones typically provide. Additionally, wildlife may use existing roads and trails that provide corridors between patches of vegetation.

6.0 Conclusions

The purpose of this report was to assess the biological resources and habitat available within the study area. The habitat availability was assessed for special-status species that occur within the study area. Recommendations for avoiding and mitigating potential project-related impacts are addressed in Section 7.0 Recommendations.

6.1 Special-status Plant Species

Of the 65 special-status plant species reported within the region, 58 are considered to have a no or low potential to occur within the study area, 7 are considered moderate or high potential to occur, and none of these were observed. Site investigations were conducted during appropriate seasons for detecting plant species with moderate or higher potential for occurrence.

6.2 Special-status Habitats and Natural Communities

6.2.1 Designated Critical Habitat

The study area does not contain designated critical habitat for species listed under the FESA. The closest designated critical habitat is for the southern DPS of eulachon (*Thaleichthys pacificus*) and steelhead (*Oncorhynchus mykiss irideus*), approximately one mile to the west of the study area.

6.2.2 Vegetation Alliances

A sensitive vegetation community was observed within the study area in the palustrine emergent wetland consisting of an *Argentina egedii* Herbaceous Alliance (Pacific silverweed marsh [G4/S2]).

6.2.3 Nesting Bird Habitat

All locations with a shrub or tree canopy layer within the study area may provide suitable nesting habitat for a diverse assemblage of migratory birds. Additionally, some species, such as, western meadowlark , may nest in tall grasses or wetland areas. Surveys should be conducted for nesting birds within 7 days prior to construction activities during nesting season (February 15 – August15).

6.2.4 Wildlife Movement Corridors

Watercourses and their associated riparian zones are likely the primary wildlife movement corridors due to their complex structure, providing cover and hiding places from predators. Additionally, wildlife may use existing roads and trails that provide narrow openings in areas of tall grass or dense shrub layers.

7.0 Recommendations

Given the special-status biological resources present within the study area, the following recommendations are provided to ensure that the project will not result in substantial impacts to biological resources.

- If impacts to special-status resources cannot be avoided while still accomplishing project objectives, these impacts should be mitigated at a ratio to be determined by consultation with the appropriate regulatory agency.

- Where project construction activities occur within close proximity (100 feet) to special-status resources, these resources should be demarcated by high-visibility construction fencing during the project construction period in a manner sufficient to avoid unintentional impacts.
- Project-related noise levels should be minimized so that sound levels are below 50 decibels at a distance of 100 feet from the source.
- Limit ground disturbance and vegetation clearing to the minimal extent necessary to accomplish project goals.
- Project-related vegetation clearing should occur outside the bird nesting season, which is generally considered February 15 through August 15. If project-related brush clearing or structural work on buildings within the vicinity of nesting bird habitat must occur during the breeding season, nesting bird surveys should be performed within seven days of project activities in those locations by a qualified biologist to ensure that active nests are not destroyed.
- Use native and locally-sourced plant material for landscaping and revegetation.
- Ensure that future development or new fencing does not prevent wildlife movement by maintaining sufficient movement corridors outside the project area.

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Site Photographs

1



Photo 1. Graveled terrace adjacent to commercial activity.



Photo 2. Typical vegetation within the grassland terrace.



Photo 3. Palustrine emergent wetland vegetation. Note drainage ditch.



Photo 4. Typical vegetation adjacent to wetland and conifers in project area.

Regionally-Occurring Special-status Plant Species Scoping List

2

Table 1
Special-status Plant Species List CNDDB, CNPS, IPaC: Arcata North and Surrounding 7.5-minute quadrangles (May 1, 2019)
Ace Hardware, McKinleyville, California

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro Habitat	Potential of Occurrence
Abronia umbellata var. *breviflora*	pink sand-verbena	Nyctagin-aceae	None	None	G4G5T2	S1	1B.1	June-Oct	Coastal dunes	Foredunes and interdunes with sparse cover. Usually the plant closest to the ocean. 0-10 m.	**None**
Angelica lucida	sea-watch	Apiaceae	None	None	G5	S3	4.2	May-Sept	Coastal bluff scrub, Coastal dunes and scrub, Marshes and swamps (coastal salt)	Coastal bluff scrub, coastal dunes, coastal scrub, coastal salt marshes. 0-150 m	**None**
Astragalus pycnostachyus var. *pycnostachyus*	coastal marsh milk-vetch	Fabaceae	None	None	G2T2	S2	1B.2	June-Oct	Coastal dunes (mesic), Coastal scrub, Marshes and swamps (coastal salt, streamsides)	0 - 30 m	**Low**
Astragalus rattanii var. *rattanii*	Rattan's milk-vetch	Fabaceae	None	None	G4T4	S4	4.3	April-July	Chaparral, cismontane woodland, lower montane coniferous forest.	Gravelly streambanks	**Low**
Astragalus umbraticus	Bald Mountain milk-vetch	Fabaceae	None	None	G4	S2	2B.3	May-August	Cismontane woodland, Lower montane coniferous forest	Sometimes roadside	**Low**
Bryoria pseudocapillaris	false gray horsehair lichen	Parmeliaceae	None	None	G3	S2	3.2	lichen	Coastal dunes, north coast coniferous forest (immediate coast)	Usually on conifers	**None**

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Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro Habitat	Potential of Occurrence
Bryoria spiralifera	twisted horsehair lichen	Parmeliaceae	None	None	G3	S1S2	1B.1	lichen	North coast coniferous forest (immediate coast)	Usually on conifers	**None**
Calamagrostis bolanderi	Bolander's reed grass	Poaceae	None	None	G4	S4	4.2	May-August	Bogs, fens, wet meadows, marshes, swamps and seeps, broadleaf upland forest, closed cone & north coast coniferous forests, coastal scrub.	Mesic	**Low**
Cardamine angulata	seaside bittercress	Brassicaceae	None	None	G4G5	S3	2B.2	March-July	North coast and lower montane coniferous forests.	Wet areas, streambanks	**Low**
Carex arcta	northern clustered sedge	Cyperaceae	None	None	G5	S1	2B.2	June-Sept	Bogs and fens, North Coast coniferous forest (mesic)	60 – 1,400 m	**Low**
Carex buxbaumii	Buxbaum's sedge	Cyperaceae	None	None	G5	S3	4.2	March-August	Bogs and fens, Meadows and seeps (mesic), Marshes and swamps	3 – 3,300 m	**Low**
Carex lenticularis var. *limnophila*	lagoon sedge	Cyperaceae	None	None	G5T5	S1	2B.2	June-August	Bogs, fens, marshes and swamps, north coast coniferous forest	Shores, beaches; often gravelly	**None**

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Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro Habitat	Potential of Occurrence
Carex leptalea	bristle-stalked sedge	Cyperaceae	None	None	G5	S1	2B.2	March-July	Bogs and fens, meadows and seeps (mesic), marshes and swamps	0 - 700 m	**Low**
Carex lyngbyei	Lyngbye's sedge	Cyperaceae	None	None	G5	S3	2B.2	April-August	Marshes and swamps (brackish or freshwater)	0 - 10 m	**None**
Carex praticola	northern meadow sedge	Cyperaceae	None	None	G5	S2	2B.2	May-July	Meadows and seeps (mesic)	0 – 3,200 m	**None**
Carex viridula ssp. *viridula*	green yellow sedge	Cyperaceae	None	None	G5T5	S2	2B.3	July-Sept	Bogs, fens, marshes & swamps (freshwater), north coast coniferous forest (mesic)	0 – 1,600 m	**None**
Castilleja ambigua var. *humboldtiensis*	Humboldt Bay owl's-clover	Orobanch-aceae	None	None	G4T2	S2	1B.2	April-August	Marshes and swamps (coastal salt)	0 - 3 m	**None**
Castilleja litoralis	Oregon coast paintbrush	Orobanchaceae	None	None	G3	S3	2B.2	June	Coastal bluff scrub, coastal dunes, and scrub.	Sandy	**Low**
Castilleja mendocinensis	Mendocino Coast paintbrush	Orobanch-aceae	None	None	G2	S2	1B.2	April-August	Coastal bluff scrub, Closed-cone coniferous forest, Coastal dunes and prairie, Coastal scrub	0 - 160 m	**None**

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Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro Habitat	Potential of Occurrence
Chloropyron maritimum ssp. *palustre*	Point Reyes bird's-beak	Orobanch-aceae	None	None	G4?T2	S2	1B.2	June-Oct	Marshes and swamps (coastal salt)	0 - 10 m	**None**
Chrysosplenium glechomifolium	Pacific golden saxifrage	Saxifragaceae	None	None	G5	S3	4.3	Feb-June	North coast coniferous forest, riparian forest	Streambanks, sometimes seeps and roadsides	**Low**
Collinsia corymbosa	round-headed Chinese-houses	Plantagin-aceae	None	None	G1	S1	1B.2	April-June	Coastal dunes	0 - 20 m	**None**
Coptis laciniata	Oregon goldthread	Ranuncul-aceae	None	None	G4?	S3?	4.2	March-May	Meadows and seeps, north coast coniferous forest (streambanks)	Mesic	**Low**
Discelium nudum	naked flag moss	Disceliaceae	None	None	G4G5	S1	2B.2	moss	Coastal bluff scrub (soil, on clay banks)	10 - 50 m	**None**
Empetrum nigrum	black crowberry	Empetraceae	None	None	G5	S1?	2B.2	April-June	Coastal bluff scrub, Coastal prairie	10 - 200 m	**None**
Epilobium septentrionale	Humboldt County fuchsia	Onagraceae	None	None	G4	S4	4.3	July-Sept	Broadleaf upland forest, north coast coniferous forest	Sandy or rocky	**Low**
Erigeron bloomeri var. *nudatus*	Waldo daisy	Asteraceae	None	None	G5T4	S3	2B.3	June-July	Upper and lower montane coniferous forests.	Serpentinite	**None**
Erysimum menziesii	Menzies wallflower	Brassicaceae	FE	CE	G1	S1	1B.1	March-Sept	Coastal dunes	0 - 35 m	**None**
Erythronium oregonum	giant fawn lily	Liliaceae	None	None	G4G5	S2	2B.2	March-June	Cismontane woodland, meadows and seeps	Sometimes serpentinite, rocky, openings.	**None**

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Erythronium revolutum	coast fawn lily	Liliaceae	None	None	G4G5	S3	2B.2	March-July	Bogs & fens, broadleaf upland forest, north coast coniferous forest	Mesic, streambanks	**Low**
Fissidens pauperculus	minute pocket moss	Fissident-aceae	None	None	G3?	S2	1B.2	moss	North coast coniferous forest (damp coastal soil)	10 – 1,024 m	**Low**
Gilia capitata ssp. *pacifica*	Pacific gilia	Polemoni-aceae	None	None	G5T3	S2	1B.2	April-August	Coastal bluff scrub, chaparral (openings), coastal prairie, valley and foothill grassland	5 – 1,665 m	**Moderate**
Gilia millefoliata	dark-eyed gilia	Polemoni-aceae	None	None	G2	S2	1B.2	April-July	Coastal dunes	2 - 30 m	**None**
Glehnia littoralis ssp. *leiocarpa*	American glehnia	Apiaceae	None	None	G5T4	S3	4.2	May-August	Coastal dunes	0 - 20 m	**None**
Hesperevax sparsiflora var. *brevifolia*	short-leaved evax	Asteraceae	None	None	G4T3	S2	1B.2	March-June	Coastal bluff scrub (sandy), Coastal dunes, Coastal prairie	0 - 215 m	**Moderate**
Juncus nevadensis var. *inventus*	Sierra rush	Juncaceae	None	None	G5T3T4	S1	2B.2	July-Nov	Bogs and fens	0 - 10 m	**None**
Lasthenia californica ssp. *macrantha*	perennial goldfields	Asteraceae	None	None	G3T2	S2	1B.2	Jan-Nov	Coastal bluff scrub, Coastal dunes, and scrub.	5-185 m.	**Low**
Lathyrus japonicus	seaside pea	Fabaceae	None	None	G5	S2	2B.1	May-August	Coastal dunes	3-65 m.	**None**

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Lathyrus palustris	marsh pea	Fabaceae	None	None	G5	S2	2B.2	March-August	Bogs, fens, marshes, swamps, coastal prairie, scrub, no. coast and lower montane coniferous forests.	Mesic, moist coastal areas. 2-140 m.	**Low**
Layia carnosa	beach layia	Asteraceae	FE	CE	G2	S2	1B.1	March-July	Coastal dunes, Coastal scrub (sandy)	0 - 60 m	**None**
Lilium kelloggii	Kellogg's lily	Liliaceae	None	None	G3	S3	4.3	May-August	No. Coast and lower montane coniferous forest	Openings, roadsides	**Low**
Lilium occidentale	western lily	Liliaceae	FE	CE	G1	S1	1B.1	June-July	Freshwater bogs, fens, marshes, swamps, coastal bluff scrub, coastal prairie, scrub, no. coast coniferous forest (openings).	2 - 185 m	**Low**
Listera cordata	heart-leaved twayblade	Orchidaceae	None	None	G5	S4	4.2	Feb-July	Bogs, fens, no. coast and lower montane coniferous forests.	Bogs and fens, 5-1,370 m.	**Low**
Lycopodiella inundata	inundated bog club-moss	Lycopodi-aceae	None	None	G5	S1?	2B.2	June-Sept	Bogs, fens (coastal), marshes, swamps (lake margins). Lower montane coniferous forest (mesic).	5 – 1,000 m	**None**

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Lycopodium clavatum	running-pine	Lycopodi-aceae	None	None	G5	S3	4.1	June-August	North coast and lower montane coniferous forests (mesic), marshes and swamps.	Often edges, openings, and roadsides	**Low**
Lycopus uniflorus	northern bugleweed	Lamiaceae	None	None	G5	S4	4.3	July-Sept	Bogs and fens, marshes and swamps	5 – 2,000 m	**Low**
Mitellastra caulescens	leafy-stemmed mitrewort	Saxifragaceae	None	None	G5	S4	4.2	April-Oct	Broadleaf upland forest, north coast and lower montane coniferous forests, meadows and seeps.	mesic, sometimes roadsides	**Low**
Monotropa uniflora	ghost-pipe	Ericaceae	None	None	G5	S2	2B.2	June-August	Broadleaf upland forest, north coast coniferous forest.	Often under redwoods or west hemlock. 15-855 m.	**Low**
Montia howellii	Howell's montia	Montiaceae	None	None	G3G4	S2	2B.2	March-May	Meadows and seeps, north coast coniferous forest, vernal pools	Vernally mesic, sometimes roadsides	**High**
Oenothera wolfii	Wolf's evening-primrose	Onagraceae	None	None	G2	S1	1B.1	May-Oct	Coastal bluff scrub, coastal dunes and prairie, lower montane coniferous forest	Sandy, usually mesic	**Moderate**
Packera bolanderi var. *bolanderi*	seacoast ragwort	Asteraceae	None	None	G4T4	S2S3	2B.2	May-July	Coastal scrub, north coast coniferous forest	Sometimes roadsides	**Low**

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Piperia candida	white-flowered rein orchid	Orchidaceae	None	None	G3	S3	1B.2	May-Sept	Broadleaf upland and No. coast and lower montane coniferous forests.	Sometimes serpentinite	**None**
Pityopus californicus	California pinefoot	Ericaceae	None	None	G4G5	S4	4.2	May-August	Broadleaf upland and upper and lower montane, and no. coast coniferous forests.	mesic	**Low**
Pleuropogon refractus	nodding semaphore grass	Poaceae	None	None	G4	S4	4.2	April-August	No. coast and lower montane coniferous and riparian forest, meadows, and seeps.	Mesic sites along streams, grassy flats in shaded redwood groves. 0-1,600 m.	**Low**
Polemonium carneum	Oregon polemonium	Polemoni-aceae	None	None	G3G4	S2	2B.2	April-Sept	Coastal prairie, and scrub, lower montane coniferous forest	0 – 1,830 m	**Low**
Ribes laxiflorum	trailing black currant	Grossulari-aceae	None	None	G5	S4	4.3	March-July	No. Coast coniferous forest.	Sometimes roadside	**Low**
Romanzoffia tracyi	Tracy's romanzoffia	Hydrophyll-aceae	None	None	G4	S2	2B.3	March-May	Coastal bluff scrub, coastal scrub.	Rocky	**Low**
Sidalcea malachroides	maple-leaved checker-bloom	Malvaceae	None	None	G3	S3	4.2	April-August	Broadleaf upland forest, coastal prairie and scrub, no. coast coniferous forest, Riparian woodland	Often in disturbed areas	**High**

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Sidalcea malviflora ssp. *patula*	Siskiyou checker-bloom	Malvaceae	None	None	G5T2	S2	1B.2	May-August	Coastal bluff scrub, coastal prairie, north coast coniferous forest.	Open coastal forest; roadcuts. 5-1,255 m.	**Moderate**
Sidalcea oregana ssp. *eximia*	coast checker-bloom	Malvaceae	None	None	G5T1	S1	1B.2	June-August	North coast and lower montane coniferous forests, meadows and seeps.	Near meadows, in gravelly soil. 5-1,805 m.	**Moderate**
Spergularia canadensis var. *occidentalis*	western sand-spurrey	Caryophyll-aceae	None	None	G5T4	S1	2B.1	June-August	Marshes and swamps (coastal salt)	0-3 m.	**None**
Tiarella trifoliata var. *trifoliata*	trifoliate laceflower	Saxifragaceae	None	None	G5T5	S2S3	3.2	June-August	North coast coniferous and lower montane coniferous forests.	Edges, moist shady banks, streambanks	**Low**
Trichodon cylindricus	cylindrical trichodon	Ditrichaceae	None	None	G4	S2	2B.2	moss	Broadleaf upland forest, Meadows and seeps, Upper montane coniferous forest	Moss growing in openings on sandy or clay soils. Roadsides, stream banks, trails or in fields. 50-1,500 m.	**Low**
Usnea longissima	Methuselah's beard lichen	Parmeliaceae	None	None	G4	S4	4.2	lichen	Broadleaf upland forest, North Coast coniferous forest.	On tree branches; usually on old growth hardwoods and conifers	**Low**
Viola palustris	alpine marsh violet	Violaceae	None	None	G5	S1S2	2B.2	March-August	Bogs and fens (coastal), Coastal scrub (mesic)	150-490 m	**Low**

Table 1
Special-status Plant Species List CNDDB, CNPS, IPaC: Arcata North and Surrounding 7.5-minute quadrangles (May 1, 2019)
Ace Hardware, McKinleyville, California

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro Habitat	Potential of Occurrence

1. Species indicator status as assigned by Federal Endangered Species Act (FESA), California Endangered Species Act (CESA), and California Department of Fish and Wildlife (CDFW)

C: candidate	ESU: evolutionarily significant unit
CE: candidate endangered	FP: fully protected
CT: candidate threatened	PT: proposed threatened
D: delisted	SSC: species of special concern
DPS: distinct population segment	T: threatened
E: endangered	WL: watch list

2. Species Heritage rank as assigned by California Department of Fish and Wildlife (CDFW)

G1/S1: critically imperiled
G2/S2: imperiled
G3/S3: vulnerable
G4/S4: apparently secure
G5/S5: secure

Observed Botanical Species List

3

Table 2 Botanical Species Observed 5/8/2019 and 7/9/2019 Ace Hardware, McKinleyville, CA			
Scientific Name	**Common Name**	**Family**	**Native?**
Trees			
Alnus rubra	red alder	Betulaceae	Y[1]
Pinus contorta ssp. contorta	shore pine	Pinaceae	Y
Pseudotsuga menziesii var. menziesii	Douglas fir	Pinaceae	Y
Salix hookeriana	Hooker's willow	Salicaceae	Y
Salix lasiolepis	arroyo willow	Salicaceae	Y
Shrubs			
Cotoneaster franchettii	Franchett's cotoneaster	Rosaceae	N[2]
Cytisus scoparius	Scotch broom	Fabaceae	N
Erica lusitanica	Spanish heather	Ericaceae	N
Rosa spp.	cultivated rose	Rosaceae	N
Rubus armeniacus	Himalayan berry	Rosaceae	N
Sedges and Rushes			
Carex densa	dense sedge	Cyperaceae	Y
Carex exsiccate	western inflated sedge	Cyperaceae	Y
Carex obnupta	slough sedge	Cyperaceae	Y
Eleocharis macrostachya	common spikerush	Cyperaceae	Y
Juncus bolanderi	Bolander's rush	Juncaceae	Y
Juncus bufonius	toad rush	Juncaceae	Y
Juncus effusus ssp. *pacificus*	common rush	Juncaceae	Y
Juncus ensifolius	sword leaved rush	Juncaceae	Y
Luzula comosa var. *comosa*	woodrush	Juncaceae	Y
Scirpus microcarpus	panicled bullrush	Cyperaceae	Y
Grasses			
Agrostis stolonifera	creeping bentgrass	Poaceae	N
Aira caryophyllea	silver hairgrass	Poaceae	N
Alopecurus pratensis	meadow foxtail	Poaceae	N
Anthoxanthum odoratum	sweet vernal grass	Poaceae	N
Avena barbata	wild oat	Poaceae	N
Briza maxima	large quaking grass	Poaceae	N
Briza minor	small quaking grass	Poaceae	N
Bromus carinatus var. *carinatus*	California brome	Poaceae	Y
Bromus diandrus	rip-gut brome	Poaceae	N
Bromus hordeacus	soft chess	Poaceae	N
Dactylis glomeratum	orchard grass	Poaceae	N
Deschampsia caespitosa ssp. holciformis	tufted hair grass	Poaceae	Y
Festuca arundinacea	California oat-grass	Poaceae	Y
Festuca bromoides	brome fescue	Poaceae	N
Festuca microstachys	small fescue	Poaceae	Y
Festuca Perennis	perennial rye grass	Poaceae	N
Holcus lanatus	velvet grass	Poaceae	N
Phleum pretense	Timothy grass	Poaceae	N
Poa annua	annual grass	Poaceae	N
Poa pratensis	Kentucky bluegrass	Poaceae	N
Herbs			
Alectoria sarmentosa	agapanthus	Liliaceae	N
Allium triquetrum	three cornered leek	Alliaceae	N

Table 2 Botanical Species Observed 5/8/2019 and 7/9/2019 Ace Hardware, McKinleyville, CA			
Scientific Name	**Common Name**	**Family**	**Native?**
Bellis perenne	English daisy	Asteraceae	N
Brassica rapa	common mustard	Brassicaceae	N
Callitriche heterophylla var. heterophylla	varied leaved water starwort	Plantaginaceae	Y
Cerastium glomeratum	mouse-ear chickweed	Caryophyllaceae	N
Conium maculatum	poison hemlock	Apiaceae	N
Epilobium ciliatum	fringed willow herb	Onagraceae	N
Erodium circutarium	heron's bill	Geraniaceae	N
Erodium moschatum	whitestem filaree	Geraniaceae	N
Euphorbia peplans	petty spurge	Euphorbiaceae	N
Fragaria vesca	California strawberry	Rosaceae	Y
Galium aparine	cleaver plant	Rubiaceae	Y
Gamochaeta ustulata	featherweed	Asteraceae	Y
Geranium dissectum	cutleaf geranium	Geraniaceae	N
Geranium robertianum	Robert's geranium	Geraniaceae	N
Helminthotheca echioides	bristly ox-tongue	Asteraceae	N
Hypochaeris radicata	hairy cat's-ear	Asteraceae	N
Lathyrus latifolius	sweet pea	Fabaceae	N
Leontodon saxatilis	hawkbit	Asteraceae	N
Leucanthemum vulgare	oxeye daisy	Asteraceae	N
Linum bienne	flax	Linaceae	N
Lotus corniculatus	birds-foot trifoil	Fabaceae	N
Lysimachia arvensis	scarlet pimpernel	Myrsinaceae	N
Matricaria discoidea	pineapple weed	Asteraceae	Y
Medicago polymorpha	bur clover	Fabaceae	N
Mentha pulegium	pennyroyal	Lamiaceae	N
Parentucellia viscosa	yellow glandweed	Orobanchaceae	N
Plantago lanceolata	English plantain	Plantaginaceae	N
Polygonum aviculare	prostrate knotweed	Polygonaceae	N
Potentilla anserine ssp. pacifica	silverweed	Rosaceae	Y
Prunella vulgaris var. *lanceolata*	self-heal	Lamiaceae	Y
Ranunculus repens	creeping buttercup	Ranunculaceae	N
Raphanus sativa	wild radish	Onagraceae	N
Rumex acetosella	sheep sorrel	Polygonaceae	N
Rumex crispus	curly dock	Polygonaceae	N
Sisyrinchium californicum	California golden eyed grass	Iridaceae	Y
Sonchus olereacus	sow thistle	Asteraceae	N
Spergularia rubra	pig-a-back plant	Saxifragaceae	Y
Stachys ajugoides	bugle hedge-nettle	Lamiaceae	Y
Stachys chamissonis	hedge nettle	Lamiaceae	Y
Stellaria media	chickweed	Caryophyllaceae	N
Taraxacum officinale	dandelion	Asteraceae	N
Trifolium dubium	shamrock clover	Fabaceae	N
Trifolium fragiferum	strawberry clover	Fabaceae	N
Trifolium incarnatum	crimson clover	Fabaceae	N
Trifolium repens	white clover	Fabaceae	N
Trifolium subterraneum	subterranean clover	Fabaceae	N
Triphysaria versicolor	yellow owl's clover	Orobanchaceae	Y
Veronica americana	American brooklime	Scrophulariaceae	Y

Table 2 Botanical Species Observed 5/8/2019 and 7/9/2019 Ace Hardware, McKinleyville, CA			
Scientific Name	**Common Name**	**Family**	**Native?**
Veronica scutellata	marsh speedwell	Plantaginaceae	Y
Vicia hirsuta	tiny vetch	Fabaceae	N
Vicia sativa ssp. *sativa*	spring vetch	Fabaceae	N
Vines			
Convolvulus arvensis	field bindweed	Convolvulaceae	N
Lichens and Bryophytes			
Lobaria pulmonaria	tree lungwort	Lobariaceae	Y
Ramalina menziesii	California lace lichen	Ramalinaceae	Y
Parmelia sulcata	shield lichen	Parmeliaceae	Y
146 Species			**29% Native**
1. Y: Yes 2. N: No			

Eureka, CA | Arcata, CA | Redding, CA | Willits, CA | Coos Bay, OR | Klamath Falls, OR

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1. INTRODUCTION

The Ace Hardware property in McKinleyville, CA was traversed by Streamline Planning staff on November 4, 2015 to ascertain the presence of upland habitat (non-wetland) suitable for residential development. This assessment was performed to determine the feasibility of a lot line adjustment. The area traversed lies in the eastern portion of the parcel currently designated APN 510-081-002, which is the northern of the two parcels on the Ace property. The entire property is located south of Murray Road and east of Central Avenue.

While a wetland was previously mapped in the south-central portion of the property, an apparent upland was scouted for wetland and upland characteristics in November. After an initial walk around the northeastern corner by Streamline Consulting staff, a transect was run from north to south along the center of the apparent upland area to ensure buildable residential land exists onsite (See aerial photo, Attachment 1). Along this transect, a primary and two secondary pits were dug and examined using the Army Corps three parameter approach to ascertain the presence of hydrophytic vegetation, hydric soils or wetland hydrology.

2. RESULTS AND DISCUSSION

The entire parcel is surrounded by residential development on the northern and eastern boundaries. The overall site topography rises toward the northeast, where patches of upland Spanish Heather combined with the elevated topography to make a logical site to search for uplands. The entire elevated portion of the site examined during this analysis exhibited none of the three Army Corps parameters. This elevated area appears as an overall subtle convex hump on the property, with non-native pasture grasses and forbs characteristic of upland pastures. Soils were relatively deep topsoil underlain by brightly mottles subsoils, too bright to classify as hydric. No indication of wetland hydrology was present, even after significant rainfall that filled the wetland near the barn.

The Data Form from Pit #1R has been included in this Assessment to show the characteristics typical of the upland examined on this site (Attachment 2). The upland area represented by this Data Form is outlined in yellow on Attachment 1, encompassing 52,080 square feet or 1.2 acres. The north-south length of the rectangle is 336 feet long, while the west-east width is 155 feet. This rectangle appears to be approximately 120 feet from the delineated wetland to the southwest, providing adequate buffer space. If development occurs, a wetland delineation between this assessed rectangle and the wetland near the barn can occur to ensure wetlands with subtle Army Corps parameters do not exist, and to determine how far the current upland polygon can be expanded while maintaining appropriate buffer space for the wetland by the barn.



Google earth

feet 300
meters 100

Area delineated as upland for residential use

Secondary confirmation pit

Primary analysis pit

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Jenkins Mckinleyville Ace City/County: Humboldt Sampling Date: 11/4/15

Applicant/Owner: Kevin Jenkins State: CA Sampling Point: 1R

Investigator(s): Sam Dolly, Joseph Jaler Section, Township, Range: _____

Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): Convex Slope (%): 3

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation X, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	Is the Sampled Area within a Wetland? Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks: -Vegetation grazed represents ~ 200' N-S by 138' E-W rectangle

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Rubus Ursinus	2%		FACU
2. Rosa Nutkana	1		FAC
3. Holcus Lanatus	10	✓	FAC
4. Hypochaeris radicata	10	✓	FACU
5. Taraxicum officinale	2		FACU
6. Leucanthemum Vulgare	2		FACU
7. Dactylis glomerata	10	✓	FACU
8. Rumex acetosella	1%		FACU
9. Festuca perennis	2%		FAC
10.			
11.			
	40 = Total Cover 20/8		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	3	x 3 =	9
FACU species	6	x 4 =	24
UPL species	0	x 5 =	0
Column Totals:	9 (A)		33 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-17	10YR 2-2	100					Loam	
17-24	10YR 5-3	78%	10YR 5-8	20%	C	M	Loam	
			2.5YR 4-6	2	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Site of Pit:

70 ft Northeast to Pine tree

79 ft Southeast to second Pine tree

71 ft East To Property line

Sample Pits: ① 78' North of Pit

② 91' South of Pit.

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Black Dog Partnership Improvements, Commercial Rezone & Wetland Mitigation Project

Humboldt County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hardware/Paint Store	11.73	1000sqft	0.27	11,730.00	0
Parking Lot	53.25	1000sqft	1.22	53,250.00	0
Other Non-Asphalt Surfaces	38.77	1000sqft	0.89	38,770.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	103
Climate Zone	1			**Operational Year**	2025
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Analysis assumes development of three structures associated with the existing McKinleyville Ace Hardware store (greenhouse, lumber rach, and optional future lumber rack), plus the proposed paved and gravel areas.

Construction Phase - Mostly default assumptions utilized. However, length of demolition and building construction shortened, as a significant amount of demolition or building construction is not required for project. Demolition is assumed to entail removal of an existing greenhouse structure and barn on-site. Construction would be limited to development of a greenhouse, lumber rack, and optional future lumber rack.

Off-road Equipment - Default assumptions

Off-road Equipment - Default assumptions

Off-road Equipment - Default assumptions

Off-road Equipment - Default assumptions

Off-road Equipment - Default assumptions

Black Dog Partnership Improvements, Commercial Rezone & Wetland Mitigation Project - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Off-road Equipment - Default assumptions

Grading - Default assumptions

Demolition - Two structures to be removed from site: greenhouse (~600 sf) and barn (~1,300 sf). Measurements derived from aerial imagery.

Trips and VMT - Default assumptions

On-road Fugitive Dust - Default assumptions

Architectural Coating - Default assumptions

Vehicle Trips - Default assumptions

Vehicle Emission Factors - Default assumptions

Vehicle Emission Factors - Default assumptions

Vehicle Emission Factors - Default assumptions

Fleet Mix - Default assumptions

Road Dust - Default assumptions. Assumes vehicle speed would be limited to 15 mph on unpaved road surfaces.

Woodstoves - N/A - no woodstoves or fireplaces

Consumer Products - Default assumptions

Area Coating - Default assumptions

Landscape Equipment - Default assumptions

Energy Use - Default assumptions

Water And Wastewater - Default assumptions

Solid Waste - Default assumptions

Operational Off-Road Equipment - For a conservative analysis, assumes forklift would be utilized to move materials on-site and off-highway trucks for deliveries twice per week associated with the proposed improvements. Analysis assumes forklift would be utilized every day the store is open (approximately 360 days per year, accounting for major holidays). Analysis assumes deliveres would be received twice per week each year.

Stationary Sources - Emergency Generators and Fire Pumps - Default assumptions

Stationary Sources - Emergency Generators and Fire Pumps EF - Default assumptions

Stationary Sources - Process Boilers - Default assumptions

Stationary Sources - Process Boilers EF - Default assumptions

Stationary Sources - User Defined - Default assumptions

Land Use Change - Per the 2014 Wetland Report, a 0.30-acre three-parameter intermittent wetland was identified on-site. An ~0.33-acre elongated bioswale along the majority of Proposed Parcel 2's eastern boundary is proposed to contain runoff from Proposed Parcel 2 and prevent it from flowing onto the adjacent Proposed Parcel 1. While additional 1- to 2-parameter wetland areas have been identified, it is recommended in the Report these areas not be considered wetlands due to past disturbance.

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Sequestration - N/A
Construction Off-road Equipment Mitigation - Assumes vehicle speed to be reduced to 15 mph on unpaved surfaces.

Mobile Land Use Mitigation - N/A

Mobile Commute Mitigation - N/A

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	220.00	60.00
tblConstructionPhase	NumDays	20.00	1.00
tblConstructionPhase	PhaseEndDate	4/10/2026	8/1/2025
tblConstructionPhase	PhaseEndDate	3/13/2026	7/4/2025
tblConstructionPhase	PhaseEndDate	4/28/2025	4/1/2025
tblConstructionPhase	PhaseEndDate	5/9/2025	4/14/2025
tblConstructionPhase	PhaseEndDate	3/27/2026	7/18/2025
tblConstructionPhase	PhaseEndDate	5/1/2025	4/4/2025
tblConstructionPhase	PhaseStartDate	3/28/2026	7/21/2025
tblConstructionPhase	PhaseStartDate	5/10/2025	4/14/2025
tblConstructionPhase	PhaseStartDate	5/2/2025	4/7/2025
tblConstructionPhase	PhaseStartDate	3/14/2026	7/7/2025
tblConstructionPhase	PhaseStartDate	4/29/2025	4/2/2025
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	360.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	104.00
tblOperationalOffRoadEquipment	OperLoadFactor	0.20	0.20
tblOperationalOffRoadEquipment	OperLoadFactor	0.38	0.38
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblRoadDust	MeanVehicleSpeed	40	15

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2025	0.2347	0.4960	0.5987	1.2100e-003	0.0447	0.0188	0.0634	0.0161	0.0178	0.0339	0.0000	103.8074	103.8074	0.0175	1.7700e-003	104.7725
Maximum	**0.2347**	**0.4960**	**0.5987**	**1.2100e-003**	**0.0447**	**0.0188**	**0.0634**	**0.0161**	**0.0178**	**0.0339**	**0.0000**	**103.8074**	**103.8074**	**0.0175**	**1.7700e-003**	**104.7725**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2025	0.2347	0.4960	0.5987	1.2100e-003	0.0447	0.0188	0.0634	0.0161	0.0178	0.0339	0.0000	103.8073	103.8073	0.0175	1.7700e-003	104.7724
Maximum	**0.2347**	**0.4960**	**0.5987**	**1.2100e-003**	**0.0447**	**0.0188**	**0.0634**	**0.0161**	**0.0178**	**0.0339**	**0.0000**	**103.8073**	**103.8073**	**0.0175**	**1.7700e-003**	**104.7724**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	4-1-2025	6-30-2025	0.4698	0.4698
2	7-1-2025	9-30-2025	0.2082	0.2082
		Highest	0.4698	0.4698

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0686	1.0000e-005	9.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8500e-003	1.8500e-003	0.0000	0.0000	1.9700e-003
Energy	4.5000e-004	4.1100e-003	3.4500e-003	2.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	20.2810	20.2810	2.6400e-003	3.9000e-004	20.4639
Mobile	0.0571	0.0710	0.3964	6.0000e-004	0.0571	7.3000e-004	0.0578	0.0153	6.8000e-004	0.0160	0.0000	55.2808	55.2808	5.4700e-003	3.7600e-003	56.5366
Offroad	0.0407	0.2979	0.3716	9.7000e-004		0.0133	0.0133		0.0122	0.0122	0.0000	84.9619	84.9619	0.0275	0.0000	85.6489
Waste						0.0000	0.0000		0.0000	0.0000	26.4051	0.0000	26.4051	1.5605	0.0000	65.4174
Water						0.0000	0.0000		0.0000	0.0000	0.2757	0.6075	0.8831	0.0284	6.8000e-004	1.7961
Total	**0.1668**	**0.3730**	**0.7723**	**1.5900e-003**	**0.0571**	**0.0143**	**0.0714**	**0.0153**	**0.0132**	**0.0285**	**26.6807**	**161.1331**	**187.8138**	**1.6245**	**4.8300e-003**	**229.8649**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0686	1.0000e-005	9.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8500e-003	1.8500e-003	0.0000	0.0000	1.9700e-003
Energy	4.5000e-004	4.1100e-003	3.4500e-003	2.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	20.2810	20.2810	2.6400e-003	3.9000e-004	20.4639
Mobile	0.0571	0.0710	0.3964	6.0000e-004	0.0571	7.3000e-004	0.0578	0.0153	6.8000e-004	0.0160	0.0000	55.2808	55.2808	5.4700e-003	3.7600e-003	56.5366
Offroad	0.0407	0.2979	0.3716	9.7000e-004		0.0133	0.0133		0.0122	0.0122	0.0000	84.9619	84.9619	0.0275	0.0000	85.6489
Waste						0.0000	0.0000		0.0000	0.0000	26.4051	0.0000	26.4051	1.5605	0.0000	65.4174
Water						0.0000	0.0000		0.0000	0.0000	0.2757	0.6075	0.8831	0.0284	6.8000e-004	1.7961
Total	**0.1668**	**0.3730**	**0.7723**	**1.5900e-003**	**0.0571**	**0.0143**	**0.0714**	**0.0153**	**0.0132**	**0.0285**	**26.6807**	**161.1331**	**187.8138**	**1.6245**	**4.8300e-003**	**229.8649**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.3 Vegetation

Vegetation

	CO2e
Category	MT
Vegetation Land Change	0.0000
Total	**0.0000**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/1/2025	4/1/2025	5	1	
2	Site Preparation	Site Preparation	4/2/2025	4/4/2025	5	3	
3	Grading	Grading	4/7/2025	4/14/2025	5	6	
4	Building Construction	Building Construction	4/14/2025	7/4/2025	5	60	
5	Paving	Paving	7/7/2025	7/18/2025	5	10	
6	Architectural Coating	Architectural Coating	7/21/2025	8/1/2025	5	10	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 6

Acres of Paving: 2.11

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 17,595; Non-Residential Outdoor: 5,865; Striped Parking Area: 5,521 (Architectural Coating – sqft)

Black Dog Partnership Improvements, Commercial Rezone & Wetland Mitigation Project - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Scrapers	1	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	9.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Grading	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	42.00	17.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.4000e-004	0.0000	9.4000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.7000e-004	6.4500e-003	6.6700e-003	1.0000e-005		2.7000e-004	2.7000e-004		2.5000e-004	2.5000e-004	0.0000	1.0550	1.0550	2.7000e-004	0.0000	1.0616
Total	**6.7000e-004**	**6.4500e-003**	**6.6700e-003**	**1.0000e-005**	**9.4000e-004**	**2.7000e-004**	**1.2100e-003**	**1.4000e-004**	**2.5000e-004**	**3.9000e-004**	**0.0000**	**1.0550**	**1.0550**	**2.7000e-004**	**0.0000**	**1.0616**

Black Dog Partnership Improvements, Commercial Rezone & Wetland Mitigation Project - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	7.3000e-004	1.3000e-004	0.0000	7.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2542	0.2542	0.0000	4.0000e-005	0.2661
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	2.6000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0607	0.0607	0.0000	0.0000	0.0614
Total	**5.0000e-005**	**7.6000e-004**	**3.9000e-004**	**0.0000**	**1.5000e-004**	**1.0000e-005**	**1.6000e-004**	**4.0000e-005**	**1.0000e-005**	**5.0000e-005**	**0.0000**	**0.3149**	**0.3149**	**0.0000**	**4.0000e-005**	**0.3275**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.4000e-004	0.0000	9.4000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.7000e-004	6.4500e-003	6.6700e-003	1.0000e-005		2.7000e-004	2.7000e-004		2.5000e-004	2.5000e-004	0.0000	1.0550	1.0550	2.7000e-004	0.0000	1.0616
Total	**6.7000e-004**	**6.4500e-003**	**6.6700e-003**	**1.0000e-005**	**9.4000e-004**	**2.7000e-004**	**1.2100e-003**	**1.4000e-004**	**2.5000e-004**	**3.9000e-004**	**0.0000**	**1.0550**	**1.0550**	**2.7000e-004**	**0.0000**	**1.0616**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	7.3000e-004	1.3000e-004	0.0000	7.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2542	0.2542	0.0000	4.0000e-005	0.2661
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	2.6000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0607	0.0607	0.0000	0.0000	0.0614
Total	**5.0000e-005**	**7.6000e-004**	**3.9000e-004**	**0.0000**	**1.5000e-004**	**1.0000e-005**	**1.6000e-004**	**4.0000e-005**	**1.0000e-005**	**5.0000e-005**	**0.0000**	**0.3149**	**0.3149**	**0.0000**	**4.0000e-005**	**0.3275**

3.3 Site Preparation - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6500e-003	0.0165	0.0134	4.0000e-005		6.1000e-004	6.1000e-004		5.6000e-004	5.6000e-004	0.0000	3.2287	3.2287	1.0400e-003	0.0000	3.2548
Total	**1.6500e-003**	**0.0165**	**0.0134**	**4.0000e-005**	**2.3900e-003**	**6.1000e-004**	**3.0000e-003**	**2.6000e-004**	**5.6000e-004**	**8.2000e-004**	**0.0000**	**3.2287**	**3.2287**	**1.0400e-003**	**0.0000**	**3.2548**

Black Dog Partnership Improvements, Commercial Rezone & Wetland Mitigation Project - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Site Preparation - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	4.8000e-004	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1121	0.1121	0.0000	0.0000	0.1133
Total	**7.0000e-005**	**5.0000e-005**	**4.8000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1121**	**0.1121**	**0.0000**	**0.0000**	**0.1133**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6500e-003	0.0165	0.0134	4.0000e-005		6.1000e-004	6.1000e-004		5.6000e-004	5.6000e-004	0.0000	3.2287	3.2287	1.0400e-003	0.0000	3.2548
Total	**1.6500e-003**	**0.0165**	**0.0134**	**4.0000e-005**	**2.3900e-003**	**6.1000e-004**	**3.0000e-003**	**2.6000e-004**	**5.6000e-004**	**8.2000e-004**	**0.0000**	**3.2287**	**3.2287**	**1.0400e-003**	**0.0000**	**3.2548**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Site Preparation - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	4.8000e-004	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1121	0.1121	0.0000	0.0000	0.1133
Total	**7.0000e-005**	**5.0000e-005**	**4.8000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1121**	**0.1121**	**0.0000**	**0.0000**	**0.1133**

3.4 Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0213	0.0000	0.0213	0.0103	0.0000	0.0103	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.5700e-003	0.0373	0.0255	6.0000e-005		1.4900e-003	1.4900e-003		1.3700e-003	1.3700e-003	0.0000	5.4317	5.4317	1.7600e-003	0.0000	5.4756
Total	**3.5700e-003**	**0.0373**	**0.0255**	**6.0000e-005**	**0.0213**	**1.4900e-003**	**0.0227**	**0.0103**	**1.3700e-003**	**0.0116**	**0.0000**	**5.4317**	**5.4317**	**1.7600e-003**	**0.0000**	**5.4756**

Black Dog Partnership Improvements, Commercial Rezone & Wetland Mitigation Project - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	1.2000e-004	1.2100e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2802	0.2802	1.0000e-005	1.0000e-005	0.2832
Total	**1.9000e-004**	**1.2000e-004**	**1.2100e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2802**	**0.2802**	**1.0000e-005**	**1.0000e-005**	**0.2832**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0213	0.0000	0.0213	0.0103	0.0000	0.0103	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.5700e-003	0.0373	0.0255	6.0000e-005		1.4900e-003	1.4900e-003		1.3700e-003	1.3700e-003	0.0000	5.4317	5.4317	1.7600e-003	0.0000	5.4756
Total	**3.5700e-003**	**0.0373**	**0.0255**	**6.0000e-005**	**0.0213**	**1.4900e-003**	**0.0227**	**0.0103**	**1.3700e-003**	**0.0116**	**0.0000**	**5.4317**	**5.4317**	**1.7600e-003**	**0.0000**	**5.4756**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	1.2000e-004	1.2100e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2802	0.2802	1.0000e-005	1.0000e-005	0.2832
Total	**1.9000e-004**	**1.2000e-004**	**1.2100e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2802**	**0.2802**	**1.0000e-005**	**1.0000e-005**	**0.2832**

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0447	0.3607	0.4202	7.5000e-004		0.0141	0.0141		0.0135	0.0135	0.0000	62.3206	62.3206	0.0114	0.0000	62.6063
Total	**0.0447**	**0.3607**	**0.4202**	**7.5000e-004**		**0.0141**	**0.0141**		**0.0135**	**0.0135**	**0.0000**	**62.3206**	**62.3206**	**0.0114**	**0.0000**	**62.6063**

Black Dog Partnership Improvements, Commercial Rezone & Wetland Mitigation Project - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.3000e-004	0.0258	8.1600e-003	1.0000e-004	2.9600e-003	1.7000e-004	3.1300e-003	8.6000e-004	1.6000e-004	1.0200e-003	0.0000	9.1875	9.1875	4.0000e-005	1.2900e-003	9.5735
Worker	7.8600e-003	5.0400e-003	0.0507	1.3000e-004	0.0151	9.0000e-005	0.0152	4.0300e-003	8.0000e-005	4.1000e-003	0.0000	11.7695	11.7695	3.7000e-004	3.9000e-004	11.8947
Total	**8.7900e-003**	**0.0308**	**0.0589**	**2.3000e-004**	**0.0181**	**2.6000e-004**	**0.0183**	**4.8900e-003**	**2.4000e-004**	**5.1200e-003**	**0.0000**	**20.9570**	**20.9570**	**4.1000e-004**	**1.6800e-003**	**21.4683**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0447	0.3607	0.4202	7.5000e-004		0.0141	0.0141		0.0135	0.0135	0.0000	62.3205	62.3205	0.0114	0.0000	62.6063
Total	**0.0447**	**0.3607**	**0.4202**	**7.5000e-004**		**0.0141**	**0.0141**		**0.0135**	**0.0135**	**0.0000**	**62.3205**	**62.3205**	**0.0114**	**0.0000**	**62.6063**

Black Dog Partnership Improvements, Commercial Rezone & Wetland Mitigation Project - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.3000e-004	0.0258	8.1600e-003	1.0000e-004	2.9600e-003	1.7000e-004	3.1300e-003	8.6000e-004	1.6000e-004	1.0200e-003	0.0000	9.1875	9.1875	4.0000e-005	1.2900e-003	9.5735
Worker	7.8600e-003	5.0400e-003	0.0507	1.3000e-004	0.0151	9.0000e-005	0.0152	4.0300e-003	8.0000e-005	4.1000e-003	0.0000	11.7695	11.7695	3.7000e-004	3.9000e-004	11.8947
Total	**8.7900e-003**	**0.0308**	**0.0589**	**2.3000e-004**	**0.0181**	**2.6000e-004**	**0.0183**	**4.8900e-003**	**2.4000e-004**	**5.1200e-003**	**0.0000**	**20.9570**	**20.9570**	**4.1000e-004**	**1.6800e-003**	**21.4683**

3.6 Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.9300e-003	0.0372	0.0584	9.0000e-005		1.7500e-003	1.7500e-003		1.6200e-003	1.6200e-003	0.0000	7.7565	7.7565	2.4600e-003	0.0000	7.8179
Paving	1.6000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.5300e-003**	**0.0372**	**0.0584**	**9.0000e-005**		**1.7500e-003**	**1.7500e-003**		**1.6200e-003**	**1.6200e-003**	**0.0000**	**7.7565**	**7.7565**	**2.4600e-003**	**0.0000**	**7.8179**

Black Dog Partnership Improvements, Commercial Rezone & Wetland Mitigation Project - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7000e-004	3.0000e-004	3.0200e-003	1.0000e-005	9.0000e-004	1.0000e-005	9.0000e-004	2.4000e-004	0.0000	2.4000e-004	0.0000	0.7006	0.7006	2.0000e-005	2.0000e-005	0.7080
Total	**4.7000e-004**	**3.0000e-004**	**3.0200e-003**	**1.0000e-005**	**9.0000e-004**	**1.0000e-005**	**9.0000e-004**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**0.7006**	**0.7006**	**2.0000e-005**	**2.0000e-005**	**0.7080**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.9300e-003	0.0372	0.0584	9.0000e-005		1.7500e-003	1.7500e-003		1.6200e-003	1.6200e-003	0.0000	7.7565	7.7565	2.4600e-003	0.0000	7.8179
Paving	1.6000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.5300e-003**	**0.0372**	**0.0584**	**9.0000e-005**		**1.7500e-003**	**1.7500e-003**		**1.6200e-003**	**1.6200e-003**	**0.0000**	**7.7565**	**7.7565**	**2.4600e-003**	**0.0000**	**7.8179**

Black Dog Partnership Improvements, Commercial Rezone & Wetland Mitigation Project - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7000e-004	3.0000e-004	3.0200e-003	1.0000e-005	9.0000e-004	1.0000e-005	9.0000e-004	2.4000e-004	0.0000	2.4000e-004	0.0000	0.7006	0.7006	2.0000e-005	2.0000e-005	0.7080
Total	**4.7000e-004**	**3.0000e-004**	**3.0200e-003**	**1.0000e-005**	**9.0000e-004**	**1.0000e-005**	**9.0000e-004**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**0.7006**	**0.7006**	**2.0000e-005**	**2.0000e-005**	**0.7080**

3.7 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1679					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.5000e-004	5.7300e-003	9.0500e-003	1.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	1.2766	1.2766	7.0000e-005	0.0000	1.2784
Total	**0.1688**	**5.7300e-003**	**9.0500e-003**	**1.0000e-005**		**2.6000e-004**	**2.6000e-004**		**2.6000e-004**	**2.6000e-004**	**0.0000**	**1.2766**	**1.2766**	**7.0000e-005**	**0.0000**	**1.2784**

Black Dog Partnership Improvements, Commercial Rezone & Wetland Mitigation Project - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	1.6000e-004	1.6100e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3736	0.3736	1.0000e-005	1.0000e-005	0.3776
Total	**2.5000e-004**	**1.6000e-004**	**1.6100e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.3736**	**0.3736**	**1.0000e-005**	**1.0000e-005**	**0.3776**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1679					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.5000e-004	5.7300e-003	9.0500e-003	1.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	1.2766	1.2766	7.0000e-005	0.0000	1.2784
Total	**0.1688**	**5.7300e-003**	**9.0500e-003**	**1.0000e-005**		**2.6000e-004**	**2.6000e-004**		**2.6000e-004**	**2.6000e-004**	**0.0000**	**1.2766**	**1.2766**	**7.0000e-005**	**0.0000**	**1.2784**

3.7 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	1.6000e-004	1.6100e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3736	0.3736	1.0000e-005	1.0000e-005	0.3776
Total	**2.5000e-004**	**1.6000e-004**	**1.6100e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.3736**	**0.3736**	**1.0000e-005**	**1.0000e-005**	**0.3776**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0571	0.0710	0.3964	6.0000e-004	0.0571	7.3000e-004	0.0578	0.0153	6.8000e-004	0.0160	0.0000	55.2808	55.2808	5.4700e-003	3.7600e-003	56.5366
Unmitigated	0.0571	0.0710	0.3964	6.0000e-004	0.0571	7.3000e-004	0.0578	0.0153	6.8000e-004	0.0160	0.0000	55.2808	55.2808	5.4700e-003	3.7600e-003	56.5366

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hardware/Paint Store	107.21	107.21	107.21	158,056	158,056
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	107.21	107.21	107.21	158,056	158,056

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Hardware/Paint Store	14.70	6.60	6.60	13.60	67.40	19.00	45	29	26
Other Non-Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Hardware/Paint Store	0.459775	0.066560	0.206943	0.149801	0.051328	0.010428	0.006608	0.008746	0.001007	0.000217	0.033530	0.001446	0.003612
Other Non-Asphalt Surfaces	0.459775	0.066560	0.206943	0.149801	0.051328	0.010428	0.006608	0.008746	0.001007	0.000217	0.033530	0.001446	0.003612

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Parking Lot	0.459775	0.066560	0.206943	0.149801	0.051328	0.010428	0.006608	0.008746	0.001007	0.000217	0.033530	0.001446	0.003612

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	15.8117	15.8117	2.5600e-003	3.1000e-004	15.9680
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	15.8117	15.8117	2.5600e-003	3.1000e-004	15.9680
NaturalGas Mitigated	4.5000e-004	4.1100e-003	3.4500e-003	2.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	4.4693	4.4693	9.0000e-005	8.0000e-005	4.4959
NaturalGas Unmitigated	4.5000e-004	4.1100e-003	3.4500e-003	2.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	4.4693	4.4693	9.0000e-005	8.0000e-005	4.4959

Black Dog Partnership Improvements, Commercial Rezone & Wetland Mitigation Project - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Hardware/Paint Store	83752.2	4.5000e-004	4.1100e-003	3.4500e-003	2.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	4.4693	4.4693	9.0000e-005	8.0000e-005	4.4959
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**4.5000e-004**	**4.1100e-003**	**3.4500e-003**	**2.0000e-005**		**3.1000e-004**	**3.1000e-004**		**3.1000e-004**	**3.1000e-004**	**0.0000**	**4.4693**	**4.4693**	**9.0000e-005**	**8.0000e-005**	**4.4959**

Black Dog Partnership Improvements, Commercial Rezone & Wetland Mitigation Project - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Hardware/Paint Store	83752.2	4.5000e-004	4.1100e-003	3.4500e-003	2.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	4.4693	4.4693	9.0000e-005	8.0000e-005	4.4959
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**4.5000e-004**	**4.1100e-003**	**3.4500e-003**	**2.0000e-005**		**3.1000e-004**	**3.1000e-004**		**3.1000e-004**	**3.1000e-004**	**0.0000**	**4.4693**	**4.4693**	**9.0000e-005**	**8.0000e-005**	**4.4959**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hardware/Paint Store	152255	14.0872	2.2800e-003	2.8000e-004	14.2265
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	18637.5	1.7244	2.8000e-004	3.0000e-005	1.7415
Total		**15.8117**	**2.5600e-003**	**3.1000e-004**	**15.9680**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hardware/Paint Store	152255	14.0872	2.2800e-003	2.8000e-004	14.2265
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	18637.5	1.7244	2.8000e-004	3.0000e-005	1.7415
Total		**15.8117**	**2.5600e-003**	**3.1000e-004**	**15.9680**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

Black Dog Partnership Improvements, Commercial Rezone & Wetland Mitigation Project - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0686	1.0000e-005	9.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8500e-003	1.8500e-003	0.0000	0.0000	1.9700e-003
Unmitigated	0.0686	1.0000e-005	9.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8500e-003	1.8500e-003	0.0000	0.0000	1.9700e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0168					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0518					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.0000e-005	1.0000e-005	9.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8500e-003	1.8500e-003	0.0000	0.0000	1.9700e-003
Total	**0.0686**	**1.0000e-005**	**9.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.8500e-003**	**1.8500e-003**	**0.0000**	**0.0000**	**1.9700e-003**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0168					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0518					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.0000e-005	1.0000e-005	9.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8500e-003	1.8500e-003	0.0000	0.0000	1.9700e-003
Total	**0.0686**	**1.0000e-005**	**9.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.8500e-003**	**1.8500e-003**	**0.0000**	**0.0000**	**1.9700e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.8831	0.0284	6.8000e-004	1.7961
Unmitigated	0.8831	0.0284	6.8000e-004	1.7961

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hardware/Paint Store	0.868871 / 0.532534	0.8831	0.0284	6.8000e-004	1.7961
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.8831**	**0.0284**	**6.8000e-004**	**1.7961**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hardware/Paint Store	0.868871 / 0.532534	0.8831	0.0284	6.8000e-004	1.7961
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.8831**	**0.0284**	**6.8000e-004**	**1.7961**

8.0 Waste Detail

8.1 Mitigation Measures Waste

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	26.4051	1.5605	0.0000	65.4174
Unmitigated	26.4051	1.5605	0.0000	65.4174

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hardware/Paint Store	130.08	26.4051	1.5605	0.0000	65.4174
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**26.4051**	**1.5605**	**0.0000**	**65.4174**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hardware/Paint Store	130.08	26.4051	1.5605	0.0000	65.4174
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**26.4051**	**1.5605**	**0.0000**	**65.4174**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	1	8.00	360	89	0.20	Diesel
Off-Highway Trucks	1	8.00	104	402	0.38	Diesel

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Forklifts	0.0157	0.1481	0.2051	2.8000e-004		7.9300e-003	7.9300e-003		7.2900e-003	7.2900e-003	0.0000	24.2933	24.2933	7.8600e-003	0.0000	24.4897
Off-Highway Trucks	0.0250	0.1498	0.1665	6.9000e-004		5.3500e-003	5.3500e-003		4.9200e-003	4.9200e-003	0.0000	60.6687	60.6687	0.0196	0.0000	61.1592
Total	**0.0407**	**0.2979**	**0.3716**	**9.7000e-004**		**0.0133**	**0.0133**		**0.0122**	**0.0122**	**0.0000**	**84.9619**	**84.9619**	**0.0275**	**0.0000**	**85.6489**

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Black Dog Partnership Improvements, Commercial Rezone & Wetland Mitigation Project - Humboldt County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	0.0000	0.0000	0.0000	0.0000

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Wetlands	0.3 / 0.33	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Preliminary Retention and Detention Pond Sizing

McKinleyville Ace Hardware
2725 Central Avenue
McKinleyville, CA



Prepared for:

Kevin Jenkins

November 2018
017257

812 W. Wabash Avenue, Eureka, CA 95501-2138 707-441-8855
Civil Engineering, Environmental Services, Geosciences, Planning & Permitting, Surveying

Reference: 017257

November 13, 2018

Kevin Jenkins
2725 Central Avenue
McKinleyville, CA 95519

Subject: Preliminary Retention and Detention Pond Sizing

Dear Mr. Jenkins:

Attached is the analysis of the potential retention and detention pond requirements for the further expansion of the McKinleyville Ace Hardware located at 2725 Central Avenue. This report details the results of our stormwater analysis for the project. Our analysis meets Humboldt County's current stormwater requirements for new development as directed in the Humboldt County Low Impact Design Stormwater Manual and the McKinleyville Community Plan. The detailed results of our analysis are provided as appendices to this report.

Our analysis and the design of necessary stormwater storage volumes were based on the site plan provided by SJA Drafting dated September 29, 2017 (provided in Appendix 1).

If you have any questions regarding the results of our analysis, please call me at 707-441-8855.

Sincerely,

SHN

Cody Long, PE
Civil Engineer

CJL:lms

Enclosure: Preliminary Retention and Detention Pond Sizing

Reference: 017257

Preliminary Retention and Detention Pond Sizing

McKinleyville Ace Hardware
2725 Central Avenue
McKinleyville, CA 95519

Prepared for:
Kevin Jenkins

Prepared by:

812 W. Wabash Ave.
Eureka, CA 95501-2138
707-441-8855

November 2018

QA/QC:JOB___

Table of Contents

Page

Abbreviations and Acronyms ii

1.0 Introduction 1

2.0 Existing Site Characterization 1

3.0 Proposed Development 1

4.0 Design Criteria 1

5.0 Hydrologic Analysis 2
- 5.1 Analysis Overview 2
- 5.2 Analysis Parameters 3

6.0 Stormwater Mitigation Design 3
- 6.1 Mitigation Requirements 3
- 6.2 Retention/Detention Volumes 3

7.0 Conclusion 4

8.0 References 4

Appendices

1. Site Plan, September 29, 2017
2. NOAA Precipitation Frequency Data
3. Modified Rational Method
4. Caltrans Runoff Coefficients
5. NRCS Time of Concentration
6. Humboldt County LID Manual Regulated Projects Worksheet
7. Hand Calculations

List of Illustrations

Table 1. Watershed Input Parameters, Pre- and Post-Development Conditions ..... On Page 3

Abbreviations and Acronyms

cfs	cubic feet per second
ft^3	cubic feet
sec	second
SF	square foot
A	area
APN	Assessor's Parcel Number
C	runoff coefficient
i	rainfall intensity
LID	low impact development
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
PFDS	Precipitation Frequency Data Server
Q	peak discharge
Q_a	allowable peak flow rate
q_p	peak flow into detention
S_d	detention volume required
T_c	time of concentration
t_d	design storm duration

1.0 Introduction

This report has been prepared by SHN to present the preliminary detention and retention pond sizing analysis performed in accordance with the Humboldt Low Impact Development (LID) Stormwater Manual and the McKinleyville Community Plan. This analysis is based on a site plan prepared by the client's architect, provided to SHN on January 3, 2018.

The results of this design analysis provide an approximate detention and retention volume for the proposed project. Sizing and volumes are subject to change with modifications to the design and additional drainage requirements from regulating agencies.

The objectives of this report are to:

- Characterize and evaluate the stormwater conditions on the existing site.
- Characterize and evaluate the future stormwater conditions of the proposed site.
- Determine the volume of storage capacity required to meet post development drainage requirements for the site

2.0 Existing Site Characterization

The proposed project location is to the east of the existing McKinleyville Ace Hardware, located at 2725 Central Avenue, just south of Murray Road. The project site will involve a lot line adjust involving two parcels identified as Humboldt County Assessor's parcel numbers (APN) 510-081-001 and 510-081-002. The project site is approximately 2.65 acres in size. The existing site consists of gently sloped pasture land. There is one barn in the area of the proposed development that will be demolished.

3.0 Proposed Development

The proposed project consists of constructing up to three new buildings totaling approximately 11,730 square feet (SF). The proposed development will pave approximately 53,250 SF of parking lot and gravel surface of approximately 38,770 SF. The remaining surface area will be designated for the retention/ detention basin. The total acreage of the site is approximately 2.65 acres. See site plan in Appendix 1 for more detail.

4.0 Design Criteria

The Humboldt County LID Stormwater Manual classifies this development as a hydromodification project because it creates more than 1 acre of impervious surface area. Hydromodification projects must meet the following two requirements:

1. The project must use bioretention facilities or equivalent LID treatment/hydromodification to capture and treat excess runoff from the 85th percentile, 24-hour storm that is not retained or infiltrated by site design measures.
2. Post-project runoff rate shall not exceed the pre-project runoff rate for the 2-year 24-hour storm.

In addition, the McKinleyville Community Plan stipulates that "Development shall only be allowed in such a manner that downstream peak flows will not be increased." The County has further clarified that this means the post-project runoff rate for the 100-year storm event shall not exceed that of the pre-project runoff rate for the 2-year storm event.

The preliminary pond capacity will be sized to retain excess runoff from the 85th percentile rain event, to satisfy the LID manual requirement, and detain runoff from the 100-year storm so that it does not exceed the pre-project 2-year storm runoff rates, to satisfy the requirement s of the McKinleyville Community Plan.

5.0 Hydrologic Analysis

5.1 Analysis Overview

The drainage analysis included an evaluation of the proposed LID features that will be used to retain and treat a portion of the 85th percentile, 24-hour storm using the "Regulated Projects Worksheet" of the LID manual.

The analysis also included an evaluation of the 2-year storm event for pre-project conditions and the 100-year storm event for post-project conditions to ensure that the runoff rate requirements are not exceeded because of the new development.

The Rational Method was used to determine the peak runoff rates generated by each storm event:

$$Q = CiA$$

Where:
- Q = peak discharge (in cubic feet per second [cfs])
- C = runoff coefficient
- i = rainfall intensity (inches per hour)
- A = area (acres)

The site-specific rainfall intensity data for the storm was obtained from the National Oceanic and Atmospheric Administration's (NOAA) Precipitation Frequency Data Server (PFDS) (Appendix 2). The storm duration was determined by calculating the time of concentration for the longest flow path through the site. The runoff coefficient was determined based on the site conditions, using the area on which the proposed improvements are to be constructed.

The Modified Rational Method was used to establish the required detention volume for the proposed development. The Modified Rational Method determines the critical storm duration and corresponding intensity for the 100-year storm event. The critical storm duration is defined as the duration that produces the largest estimated detention volume for the storm event. The estimated detention volume is found by calculating the volume of runoff generated by a particular storm event and duration, and subtracting the allowable discharge volume based on the pre-development 2-year storm runoff rate.

$$S_d = q_p t_d - Q_a(t_d + T_c)/2$$

Where:
- S_d = detention volume required (cubic feet [ft^3])
- q_p = peak flow rate into the detention basin (cfs)
- t_d = design storm duration (sec)
- Q_a = allowable peak flow rate (cfs)
- T_c = watershed time of concentration (sec)

An Excel spreadsheet was created to calculate the required detention volume for the proposed development based on this method (Appendix 3). Once the required detention volume is determined, an outflow structure can be designed to ensure that the post-development 100-year storm peak flow rate does not exceed the pre-development 2-year storm peak flow rate; design of an outflow structure was not completed as part of this preliminary sizing.

The design of the detention area is described in further detail in Section 6.0 of this report.

5.2 Analysis Parameters

The runoff coefficients used in the analysis of the pre- and post-development conditions were determined using Caltrans Highway Design Manual Table 819.2B–Runoff Coefficients for Developed Areas (Appendix 4). For the pre-development runoff coefficient, the cover is uniform grass. Post-development conditions include grass, rooftop, and gravel cover types; therefore, an area-weighted composite runoff coefficient was calculated.

For the pre-development conditions, the overland time of concentration was determined using the Natural Resources Conservation Service (NRCS) velocity method with McCuen-Spiess limitation criteria for sheet flow and Table 15-3 for shallow concentrated flow (Appendix 5). For post-development conditions, the time of concentration was estimated based on a combination of sheet flow and shallow concentrated flow for the longest flow path through the developed site.

Table 1 summarizes the pre- and post-development watershed input information used in the analysis.

Table 1 Watershed Input Parameters, Pre- and Post-Development Conditions

Condition	Area (acres)	Slope (%)	C[1]	T_c[2] (minutes)
Pre-Development	2.65	1-3	0.33	11.4
Post-Development	2.65	1-3	0.647	5

1. C: runoff coefficient
2. T_c: time of concentration

6.0 Stormwater Mitigation Design

6.1 Mitigation Requirements

In order to comply with the Humboldt LID Stormwater Manual and the McKinleyville Community Plan, retention and detention are required. The retention/detention system will be combined in one pond that is sized appropriately to capture the volume of excess runoff from the 85th percentile 24-hour storm, and the runoff from the 100-year storm necessary to control stormwater discharge to pre-development 2-year storm peak flow rates.

6.2 Retention/Detention Volumes

From the regulated projects worksheet in the Humboldt LID Stormwater Manual, the amount of excess runoff from the 85th percentile 24-hour storm that must be retained is 17,964 gallons or approximately 2,400 cubic feet. See Appendix 6 for the completed worksheet.

Through the hydraulic analysis using the modified rational method, the volume to be detained to mitigate the runoff flows was determined to be 8,130 cubic feet.

The combined required volume of the pond is 10,530 cubic feet.

7.0 Conclusion

The analysis and design in this report has been based on the site plan completed by SJA Drafting, as of September 29, 2017.

The stormwater mitigation presented has been designed to meet the requirements of hydromodification projects for the Humboldt County Low Impact Design Stormwater Manual and the McKinleyville Community Plan. A retention/detention pond has been sized to mitigate the post-development 100-year storm peak runoff to pre-development 2-year storm peak levels through detention and retain the excess runoff from the 85th percentile 24-hour storm.

In order to complete the analysis at a preliminary stage, some parameters had to be assumed or estimated. For example exact building footprints, limits of paving or graveled areas, and LID features may change prior to final design completion. In addition, slopes had to be approximated for existing conditions and assumed for the final development. Pending a topographic survey and final grading plan these slopes are subject to change. Also, during this stage of the project development, not all stakeholders have provided potential drainage requirements that can affect pond sizing.

8.0 References

Caltrans. (July 2018). *Highway Design Manual,* 6th Edition.

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Cronshey, Roger. (1986). Urban Hydrology for Small Waterhseds, 2nd ed. TR 55. Washington, D.C.:USDA.

US Department of Agriculture, Natural Resources Conservation Service. (May 2008). National Engineering Handbook. NR NRCS.

Site Plan
September 29, 2017

1

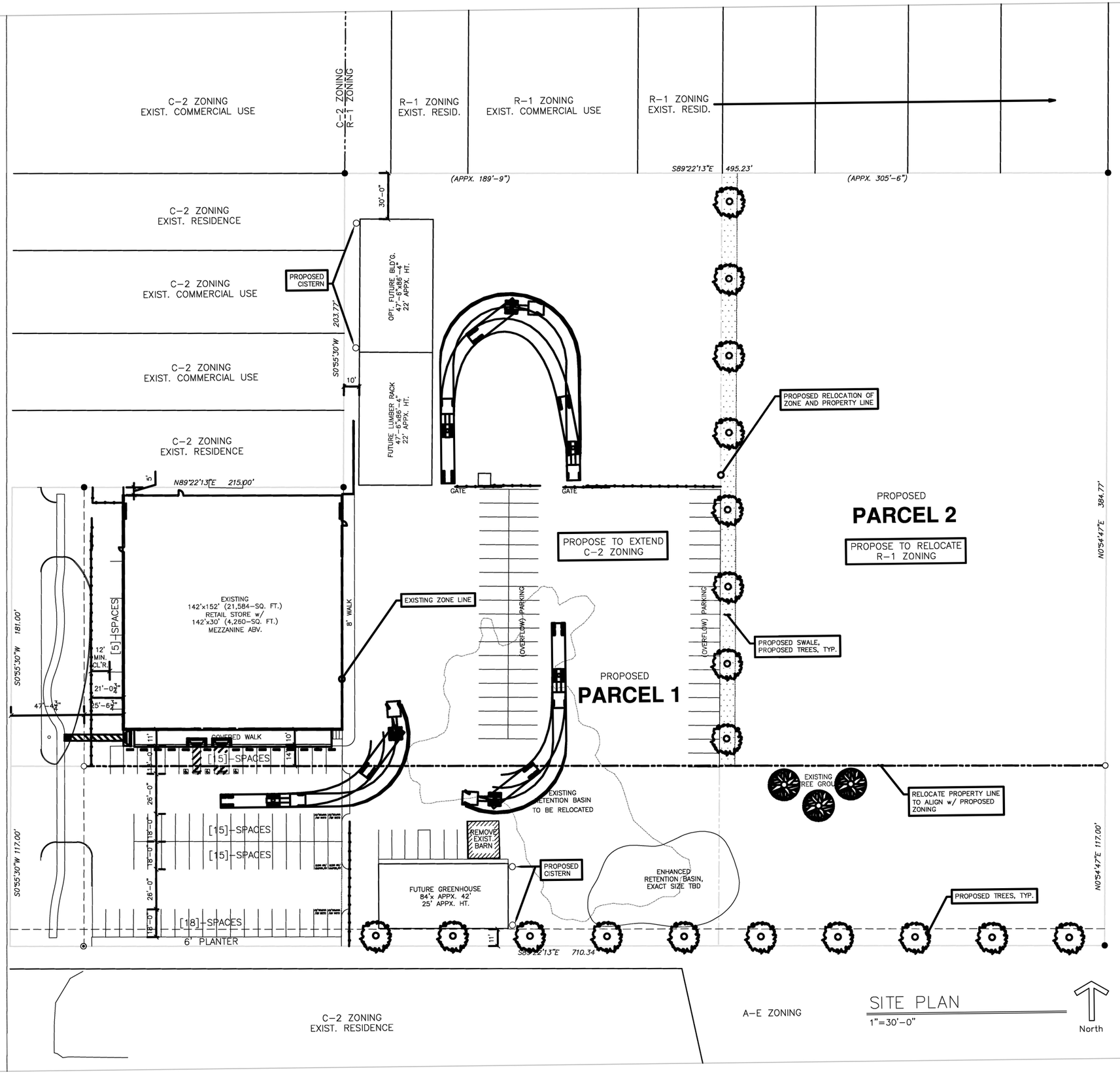


Figure 8

REVISIONS	BY
03/09/15	SJA
09/29/17	SJA

Atkins Drafting ~ Sarah J. Atkins
2846 G STREET EUREKA, CA. 95501
PH. (707) 445-3492 SJAtkins@sbcglobal.net

SITE PLAN

APN 510-081-001, -002

CENTRAL AVE. McKINLEYVILLE, CA.

FOR: KEVIN JENKINS PH. (707) 839-1588

Date	JAN. 26, '15
Scale	AS NOTED
Design	SJA
Drawn	SJA
Job	
Sheet	1OF1

NOAA Precipitation Frequency Data

2

NOAA Atlas 14, Volume 6, Version 2
Location name: Mckinleyville, California, USA*
Latitude: 40.9548°, Longitude: -124.0984°
Elevation: 115.57 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	1.63 (1.43-1.87)	2.03 (1.78-2.35)	2.60 (2.27-3.01)	3.10 (2.68-3.62)	3.83 (3.18-4.64)	4.43 (3.59-5.51)	5.08 (4.01-6.49)	5.78 (4.43-7.66)	6.84 (4.98-9.48)	7.72 (5.40-11.1)
10-min	1.16 (1.02-1.34)	1.46 (1.27-1.68)	1.87 (1.63-2.16)	2.22 (1.92-2.60)	2.74 (2.28-3.33)	3.17 (2.57-3.95)	3.64 (2.87-4.66)	4.15 (3.17-5.48)	4.90 (3.57-6.79)	5.53 (3.87-7.97)
15-min	0.940 (0.824-1.08)	1.18 (1.03-1.36)	1.50 (1.31-1.74)	1.79 (1.55-2.09)	2.21 (1.84-2.68)	2.56 (2.07-3.18)	2.93 (2.31-3.75)	3.34 (2.56-4.42)	3.95 (2.88-5.48)	4.46 (3.12-6.42)
30-min	0.628 (0.550-0.724)	0.786 (0.688-0.906)	1.01 (0.878-1.16)	1.20 (1.03-1.40)	1.48 (1.23-1.80)	1.71 (1.39-2.13)	1.96 (1.55-2.51)	2.24 (1.71-2.96)	2.64 (1.92-3.66)	2.98 (2.09-4.30)
60-min	0.441 (0.386-0.508)	0.551 (0.482-0.636)	0.705 (0.615-0.817)	0.840 (0.725-0.982)	1.04 (0.861-1.26)	1.20 (0.973-1.49)	1.38 (1.09-1.76)	1.57 (1.20-2.07)	1.85 (1.35-2.57)	2.09 (1.47-3.01)
2-hr	0.339 (0.297-0.391)	0.416 (0.364-0.480)	0.523 (0.456-0.606)	0.616 (0.532-0.720)	0.750 (0.624-0.912)	0.861 (0.698-1.07)	0.980 (0.773-1.25)	1.11 (0.848-1.47)	1.30 (0.945-1.80)	1.45 (1.02-2.09)
3-hr	0.293 (0.256-0.337)	0.356 (0.312-0.411)	0.444 (0.388-0.514)	0.520 (0.449-0.608)	0.629 (0.523-0.765)	0.718 (0.583-0.894)	0.814 (0.642-1.04)	0.917 (0.700-1.21)	1.07 (0.777-1.48)	1.19 (0.832-1.71)
6-hr	0.226 (0.198-0.261)	0.273 (0.239-0.316)	0.338 (0.294-0.391)	0.392 (0.339-0.458)	0.469 (0.390-0.570)	0.531 (0.431-0.661)	0.597 (0.471-0.764)	0.667 (0.510-0.882)	0.768 (0.559-1.06)	0.849 (0.595-1.22)
12-hr	0.168 (0.147-0.194)	0.203 (0.178-0.234)	0.250 (0.218-0.290)	0.289 (0.250-0.338)	0.344 (0.286-0.418)	0.387 (0.314-0.482)	0.432 (0.341-0.554)	0.480 (0.367-0.635)	0.547 (0.398-0.758)	0.600 (0.421-0.865)
24-hr	0.123 (0.110-0.140)	0.149 (0.133-0.171)	0.184 (0.164-0.211)	0.213 (0.189-0.246)	0.253 (0.217-0.300)	0.284 (0.239-0.343)	0.315 (0.260-0.390)	0.348 (0.280-0.442)	0.394 (0.305-0.519)	0.429 (0.322-0.584)
2-day	0.083 (0.074-0.095)	0.101 (0.091-0.116)	0.125 (0.112-0.144)	0.145 (0.128-0.167)	0.171 (0.147-0.203)	0.191 (0.161-0.232)	0.212 (0.175-0.262)	0.233 (0.187-0.296)	0.261 (0.202-0.344)	0.283 (0.212-0.386)
3-day	0.065 (0.058-0.074)	0.080 (0.071-0.091)	0.099 (0.088-0.113)	0.114 (0.101-0.132)	0.135 (0.116-0.160)	0.150 (0.127-0.182)	0.166 (0.137-0.206)	0.182 (0.146-0.231)	0.204 (0.158-0.269)	0.221 (0.165-0.300)
4-day	0.055 (0.049-0.063)	0.068 (0.060-0.077)	0.084 (0.075-0.096)	0.097 (0.086-0.112)	0.114 (0.098-0.135)	0.127 (0.107-0.154)	0.140 (0.116-0.174)	0.154 (0.123-0.195)	0.172 (0.133-0.226)	0.185 (0.139-0.252)
7-day	0.040 (0.035-0.045)	0.049 (0.044-0.056)	0.061 (0.054-0.070)	0.070 (0.062-0.081)	0.083 (0.071-0.098)	0.092 (0.078-0.112)	0.101 (0.084-0.125)	0.111 (0.089-0.141)	0.123 (0.095-0.162)	0.133 (0.099-0.180)
10-day	0.032 (0.029-0.037)	0.040 (0.036-0.046)	0.050 (0.044-0.057)	0.057 (0.051-0.066)	0.067 (0.058-0.080)	0.075 (0.063-0.091)	0.082 (0.068-0.102)	0.089 (0.072-0.114)	0.099 (0.077-0.131)	0.106 (0.080-0.145)
20-day	0.022 (0.020-0.025)	0.027 (0.024-0.031)	0.034 (0.030-0.039)	0.039 (0.034-0.045)	0.045 (0.039-0.054)	0.050 (0.042-0.061)	0.055 (0.045-0.068)	0.059 (0.048-0.075)	0.065 (0.050-0.086)	0.069 (0.052-0.094)
30-day	0.018 (0.016-0.021)	0.023 (0.020-0.026)	0.028 (0.025-0.032)	0.032 (0.028-0.037)	0.037 (0.032-0.044)	0.041 (0.034-0.049)	0.044 (0.036-0.055)	0.048 (0.038-0.061)	0.052 (0.040-0.069)	0.055 (0.042-0.075)
45-day	0.016 (0.014-0.018)	0.019 (0.017-0.022)	0.024 (0.021-0.027)	0.027 (0.024-0.031)	0.031 (0.027-0.037)	0.034 (0.029-0.041)	0.037 (0.030-0.046)	0.040 (0.032-0.050)	0.043 (0.033-0.057)	0.045 (0.034-0.062)
60-day	0.014 (0.013-0.016)	0.017 (0.015-0.020)	0.021 (0.019-0.024)	0.024 (0.021-0.027)	0.027 (0.023-0.032)	0.030 (0.025-0.036)	0.032 (0.026-0.040)	0.034 (0.027-0.043)	0.037 (0.029-0.049)	0.039 (0.029-0.053)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

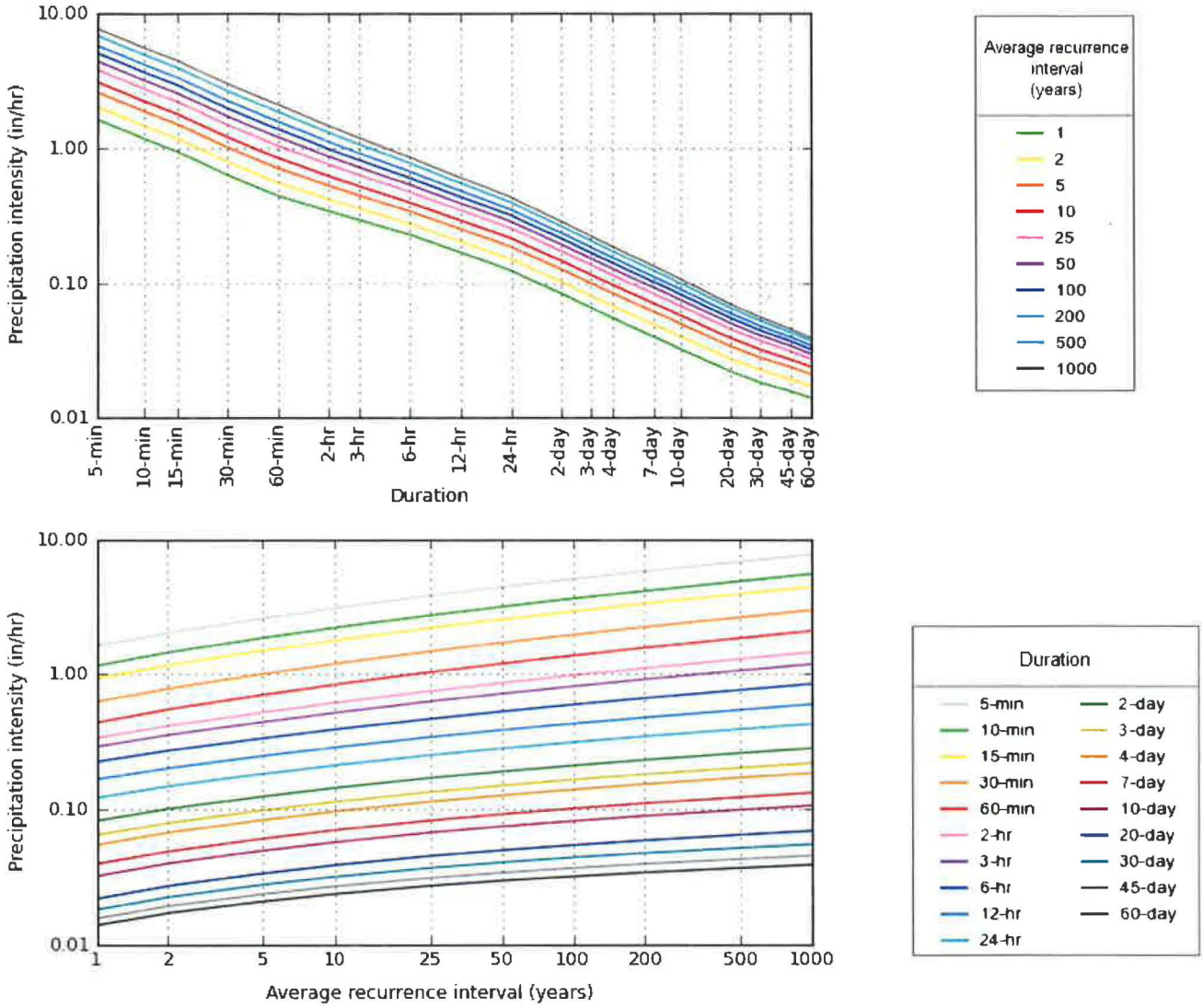
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical

PDS-based intensity-duration-frequency (IDF) curves
Latitude: 40.9548°, Longitude: -124.0984°



NOAA Atlas 14, Volume 6, Version 2

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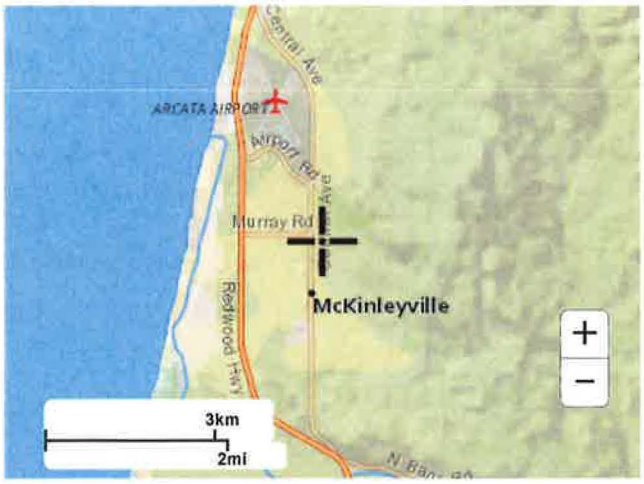
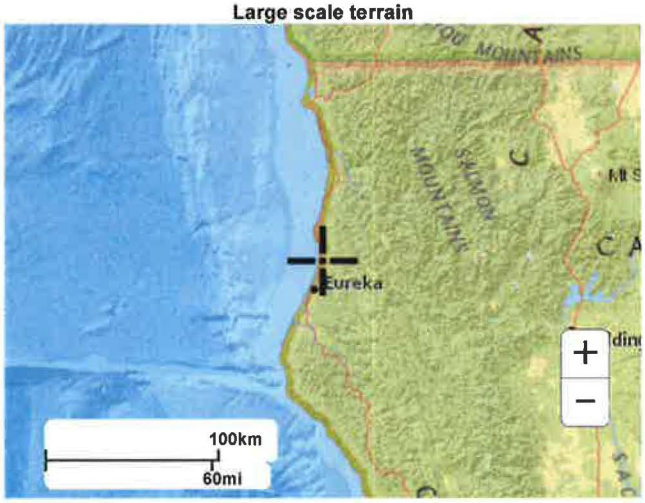
Back to Top

Maps & aerials

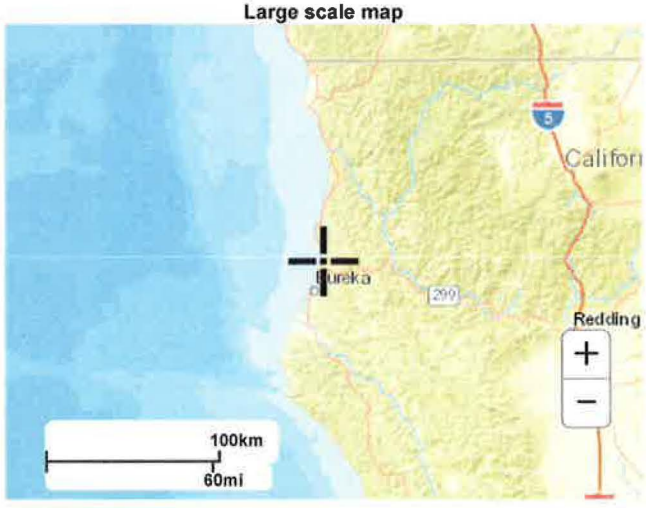
Small scale terrain



Large scale terrain



Large scale map



Large scale aerial



Back to Top

US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

3 Modified Rational Method

Modified Rational Method

Job Number 017257
Date Nov-18

Pre-Construction Conditions

Rational Method	
	2-Year Storm
C	0.330
TC - (min)	11.4
I - (in/hr)*	1.460
A - (acres)	2.65
Q - (cfs)	**1.28**

NRCS: Time of concentration	
Sheet Flow (McCuen-Spiess)	
Mannings Roughness	0.24
Flow Length - (ft)	58.9
2-yr 24-hr Depth - (in)	3.58
Slope (ft/ft)	0.020
Tt - (hr)	0.147
Shallow Concentrated Flow	
Slope (ft/ft)	0.020
Velocity (ft/s)	2.30
Flow Length (ft)	356.0
Tt (hr)	0.043
Tc - (min)	**11.4**

Post-Construction Conditions

	100-Year Storm
C	0.647
TC - (min)	5.0
TC - (sec)	300
A - (acres)	2.65

Cover Type	Runoff Coefficient	Area (ft^2)
Grass	0.10	0.23
Impervious	0.9	1.53
Gravel	0.35	0.89
Composite Runoff Coefficient		0.647

Modified Rational Method Detention Volume Determination - 100-Year Storm

Storm Duration Td (min)	Storm Duration Td (Sec)	Intensity (in/hr)*	Modified Runoff q (cfs)	Allowable Runoff Rate Q (cfs)	Estimated Detention Vol (ft^3)
5	300	5.08	8.709	1.28	2230
10	600	3.64	6.240	1.28	3170
15	900	2.93	5.023	1.28	3755
30	1800	1.96	3.360	1.28	4708
60	3600	1.38	2.366	1.28	6028
120	7200	0.98	1.680	1.28	7310
180	10800	0.814	1.395	1.28	7987
360	21600	0.597	1.023	1.28	8130
720	43200	0.432	0.741	1.28	4232

Caltrans Runoff Coefficients

4

Table 819.2B

Runoff Coefficients for Developed Areas (1)

Type of Drainage Area	Runoff Coefficient
Business:	
Downtown areas	0.70 - 0.95
Neighborhood areas	0.50 - 0.70
Residential:	
Single-family areas	0.30 - 0.50
Multi-units, detached	0.40 - 0.60
Multi-units, attached	0.60 - 0.75
Suburban	0.25 - 0.40
Apartment dwelling areas	0.50 - 0.70
Industrial:	
Light areas	0.50 - 0.80
Heavy areas	0.60 - 0.90
Parks, cemeteries:	0.10 - 0.25
Playgrounds:	0.20 - 0.40
Railroad yard areas:	0.20 - 0.40
Unimproved areas:	0.10 - 0.30
Lawns:	
Sandy soil, flat, 2%	0.05 - 0.10
Sandy soil, average, 2-7%	0.10 - 0.15
Sandy soil, steep, 7%	0.15 - 0.20
Heavy soil, flat, 2%	0.13 - 0.17
Heavy soil, average, 2-7%	0.18 - 0.22
Heavy soil, steep, 7%	0.25 - 0.35
Streets:	
Asphaltic	0.70 - 0.95
Concrete	0.80 - 0.95
Brick	0.70 - 0.85
Drives and walks	0.75 - 0.85
Roofs:	0.75 - 0.95

NOTES:
(1) From HDS No. 2.

regression equations are considered the best estimates of flood frequency and are used to reduce the time-sampling error that may occur in a station flood-frequency estimate.

(d) The flood-frequency flows and the maximum peak discharges at several stations in a region should be used whenever possible for comparison with the peak discharge estimated at an ungaged site using a rainfall-runoff approach or regional regression equation. The watershed characteristics at the ungaged and gaged sites should be similar.

(4) National Resources Conservation Service (NRCS) Methods. The Soil Conservation Service's SCS (former title) National Engineering Handbook, 1972, and their 1975, "Urban Hydrology for Small Watersheds", Technical Release 55 (TR-55), present a graphical method for estimating peak discharge. Most NRCS equations and curves provide results in terms of inches of runoff for unit hydrograph development and are not applicable to the estimation of a peak design discharge unless the design hydrograph is first developed in accordance with prescribed NRCS procedures. NRCS methods and procedures are applicable to drainage areas less than 3 square miles (approx. 2,000 acres) and result in a design hydrograph and design discharge that are functionally acceptable to form the basis for the design of highway drainage facilities.

819.3 Statistical Methods

Statistical methods of predicting stream discharge utilize numerical data to describe the process. Statistical methods, in general, do not require as much subjective judgment to apply as the previously described deterministic methods. They are usually well documented mathematical procedures which are applied to measured or observed data. The accuracy of statistical methods can also be measured quantitatively. However, to assure that statistical method results are valid, the method and procedures used should be verified by an experienced engineer with a thorough knowledge of engineering statistics.

NRCS Time of Concentration

5

Thick mulches in forests are associated with low retardance factors and reflect high degrees of retardance, as well as high infiltration rates. Hay meadows have relatively low retardance factors. Like thick mulches in forests, stem densities in meadows provide a high degree of retardance to overland flow in small watersheds. Conversely, bare surfaces with little retardance to overland flows are represented by high retardance factors.

The retardance factor is approximately the same as the curve number (CN) as defined in NEH630.09, Hydrologic Soil-Cover Complexes. In practical usage, CN is used as a surrogate for cn´, and the CN tables in NEH 630.09 may be used to approximate cn´ in equations 15–4a and 15–4b. A CN of less than 50, or greater than 95 should not be used in the solution of equations 15–4a and 15–4b (Mockus 1961).

Applications and limitations—The watershed lag equation was developed using data from 24 watersheds ranging in size from 1.3 acres to 9.2 square miles, with the majority of the watersheds being less than 2,000 acres in size (Mockus 1961). Folmar and Miller (2000) revisited the development of this equation using additional watershed data and found that a reasonable upper limit may be as much as 19 square miles.

(b) Velocity method

Another method for determining time of concentration normally used within the NRCS is called the velocity method. The velocity method assumes that time of concentration is the sum of travel times for segments along the hydraulically most distant flow path.

$$T_c = T_{t1} + T_{t2} + T_{t3} + \ldots T_{tn} \qquad \text{(eq. 15–7)}$$

where:
T_c = time of concentration, h
T_{tn} = travel time of a segment n, h
n = number of segments comprising the total hydraulic length

The segments used in the velocity method may be of three types: sheet flow, shallow concentrated flow, and open channel flow.

Sheet flow—Sheet flow is defined as flow over plane surfaces. Sheet flow usually occurs in the headwaters of a stream near the ridgeline that defines the watershed boundary. Typically, sheet flow occurs for no more than 100 feet before transitioning to shallow concentrated flow (Merkel 2001).

A simplified version of the Manning's kinematic solution may be used to compute travel time for sheet flow. This simplified form of the kinematic equation was developed by Welle and Woodward (1986) after studying the impact of various parameters on the estimates.

$$T_t = \frac{0.007(n\ell)^{0.8}}{(P_2)^{0.5} S^{0.4}} \qquad \text{(eq. 15–8)}$$

where:
T_t = travel time, h
n = Manning's roughness coefficient (table 15–1)
ℓ = sheet flow length, ft
P_2 = 2-year, 24-hour rainfall, in
S = slope of land surface, ft/ft

Table 15–1 Manning's roughness coefficients for sheet flow (flow depth generally ≤ 0.1 ft)

Surface description	*n* [1/]
Smooth surface (concrete, asphalt, gravel, or bare soil)	0.011
Fallow (no residue)	0.05
Cultivated soils:	
Residue cover ≤ 20%	0.06
Residue cover > 20%	0.17
Grass:	
Short-grass prairie	0.15
Dense grasses [2/]	0.24
Bermudagrass	0.41
Range (natural)	0.13
Woods: [3/]	
Light underbrush	0.40
Dense underbrush	0.80

1 The Manning's n values are a composite of information compiled by Engman (1986).
2 Includes species such as weeping lovegrass, bluegrass, buffalo grass, blue grama grass, and native grass mixtures.
3 When selecting n, consider cover to a height of about 0.1 ft. This is the only part of the plant cover that will obstruct sheet flow.

This simplification is based on the following assumptions:

- shallow steady uniform flow
- constant rainfall excess intensity (that part of a rain available for runoff) both temporally and spatially
- 2-year, 24-hour rainfall assuming standard NRCS rainfall intensity-duration relations apply (Types I, II, and III)
- minor effect of infiltration on travel time

For sheet flow, the roughness coefficient includes the effects of roughness and the effects of raindrop impact including drag over the surface; obstacles such as litter, crop ridges, and rocks; and erosion and transport of sediment. These n values are only applicable for flow depths of approximately 0.1 foot or less, where sheet flow occurs. Table 15–1 gives roughness coefficient values for sheet flow for various surface conditions.

Kibler and Aron (1982) and others indicated the maximum sheet flow length is less than 100 feet. To support the sheet flow limit of 100 feet, Merkel (2001) reviewed a number of technical papers on sheet flow. McCuen and Spiess (1995) indicated that use of flow length as the limiting variable in the equation 15–8 could lead to less accurate designs, and proposed that the limitation should instead be based on:

$$\ell = \frac{100\sqrt{S}}{n} \qquad \text{(eq. 15–9)}$$

Table 15–2 Maximum sheet flow lengths using the McCuen-Spiess limitation criterion

Cover type	*n* values	Slope (ft/ft)	Length (ft)
Range	0.13	0.01	77
Grass	0.41	0.01	24
Woods	0.80	0.01	12.5
Range	0.13	0.05	172
Grass	0.41	0.05	55
Woods	0.80	0.05	28

where:
n = Manning's roughness coefficient
ℓ = limiting length of flow, ft
S = slope, ft/ft

Table 15–2 provides maximum sheet flow lengths based on the McCuen-Spiess limiting criteria for various cover type—n value—slope combinations.

Shallow concentrated flow—After approximately 100 feet, sheet flow usually becomes shallow concentrated flow collecting in swales, small rills, and gullies. Shallow concentrated flow is assumed not to have a well-defined channel and has flow depths of 0.1 to 0.5 feet. It is assumed that shallow concentrated flow can be represented by one of seven flow types. The curves in figure 15–4 were used to develop the information in table 15–3.

To estimate shallow concentrated flow travel time, velocities are developed using figure 15–4, in which average velocity is a function of watercourse slope and type of channel (Kent 1964). For slopes less than 0.005 foot per foot, the equations in table 15–3 may be used.

After estimating average velocity using figure 15–4, use equation 15–1 to estimate travel time for the shallow concentrated flow segment.

Open channel flow— Shallow concentrated flow is assumed to occur after sheet flow ends at shallow depths of 0.1 to 0.5 feet. Beyond that channel flow is assumed to occur. Open channels are assumed to begin where surveyed cross-sectional information has been obtained, where channels are visible on aerial photographs, or where bluelines (indicating streams) appear on U.S. Geological Survey (USGS) quadrangle sheets.

Manning's equation or water surface profile information can be used to estimate average flow velocity. Average flow velocity is usually determined for the bankfull elevation.

Manning's equation is:

$$V = \frac{1.49 r^{\frac{2}{3}} s^{\frac{1}{2}}}{n} \qquad \text{(eq. 15–10)}$$

Figure 15–4 Velocity versus slope for shallow concentrated flow

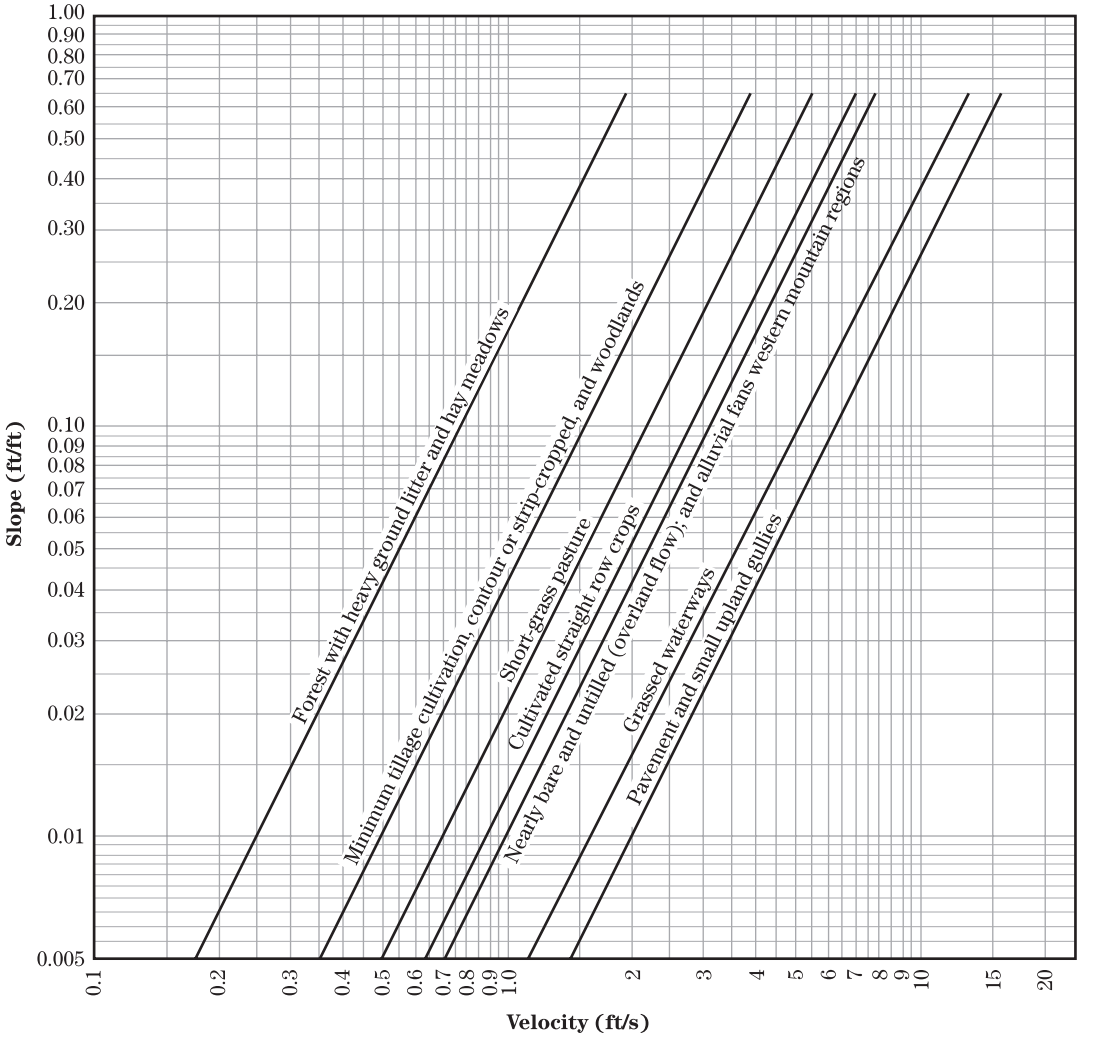


Table 15–3 Equations and assumptions developed from figure 15–4

Flow type	Depth (ft)	Manning's *n*	Velocity equation (ft/s)
Pavement and small upland gullies	0.2	0.025	$V = 20.328(s)^{0.5}$
Grassed waterways	0.4	0.050	$V = 16.135(s)^{0.5}$
Nearly bare and untilled (overland flow); and alluvial fans in western mountain regions	0.2	0.051	$V = 9.965(s)^{0.5}$
Cultivated straight row crops	0.2	0.058	$V = 8.762(s)^{0.5}$
Short-grass pasture	0.2	0.073	$V = 6.962(s)^{0.5}$
Minimum tillage cultivation, contour or strip-cropped, and woodlands	0.2	0.101	$V = 5.032(s)^{0.5}$
Forest with heavy ground litter and hay meadows	0.2	0.202	$V = 2.516(s)^{0.5}$

LID Manual Regulated Projects Worksheet 6

Regulated Projects Worksheet 2
Humboldt Low Impact Development Stormwater Manual

Project Information							*Formulas/Notes*
DMA Name:							
Total Post-Project Impervious Surface Area (square feet)				A	66824	square feet	
24 hour - 85th Percentile Design Storm				B	0.65	inch	**B** = Select Design Storm Value (0.65-inch Humboldt Bay Area, 1.3-inch Shelter Cove)
Impervious Surface Runoff Value (Potential Stormwater Runoff due to impervious surface area and design storm value)				C	26967	Gallons per 24 hours	**C = A x B x 0.083 x 7.48**
Pervious Self-Retaining Area (SRA) Credit (if applicable, if none enter 0)							
Self-Retaining Area (square feet)	3850	3.5	SRA Credit		13475	square feet	**SRA Credit = Self-Retaining Area x Multiplier** Select **Multiplier** (3.5 Humboldt Bay Area, 1.3 Shelter Cove)
Site Design Measure Credits							
Tree Planting and Preservation							
New Trees			# of trees				
100 square feet per deciduous tree			D	0	E	0	square feet	**E = D x 100**
200 square feet per evergreen tree			F	18	G	3600	square feet	**G = F x 200**
Existing Trees (Credit for 50% of existing canopy area)			Canopy diameter (feet)				
Tree #1			H_1	30	J_1	353	square feet	$J_1 = 3.14 \times (H_1/2)^2 \times 0.50$
Tree #2			H_2	35	J_2	481	square feet	$J_2 = 3.14 \times (H_2/2)^2 \times 0.50$
Tree #3			H_3	0	J_3	0	square feet	$J_3 = 3.14 \times (H_3/2)^2 \times 0.50$
Rain Barrel or Cisterns (55 gallon minimum)							
Square foot credit per gallon based on 24-hour, 85th Percentile Design Storm			K	2.48				**K** = Select square foot credit per gallon (2.48 Humboldt Bay Area, 1.24 Shelter Cove)
			Gallons				
Rain Barrels			L	0	M	0	square feet	**M = L x K**
Cisterns			N	220	O	546	square feet	**O = N x K**
Infiltration Trench/Basin (55 gallon minimum ~ 21 ft^{3**})			cubic feet				
volume(ft^3) = length x width x depth			P	0	Q	0	square feet	**Q = P x R x K x 7.48**
porosity (approximate %)			R	35%			
Subsurface Infiltrators (55 gallon minimum)							
Proprietary units vary, insert estimated storage in ft^3			S	0	T	0	square feet	**T = S x 7.48**
Impervious Area Disconnection							
Credit per square foot of pervious receiving area					U	0	square feet	**U =** Enter square foot value
Soil Quality Improvement							
Credit per square foot of soil quality improvement					V	0	square feet	**V =** Enter square foot value
Green Roof							
Credit per square foot of green roof installation					W	0	square feet	**W =** Enter square foot value
PPPP (Alternative engineered hardscaping surfaces)							
Credit per square foot of PPPP					X	0	square feet	**X =** Enter square foot value
Vegetated Swales							
Credit per square foot of vegetated swale					Y	3853	square feet	**Y =** Enter square foot value
Stream Setbacks and Buffers							
Credit per square foot of stream setback and buffer#					Z	0	square feet	**Z =** Enter square foot value
Credits Total					AA	22308	square feet	**AA = SRA Credit + E + G + J_1 + J_2 + J_3 + M + O + Q + T + U + V + W + X + Y + Z**
Post-Project Impervious Surface Area minus Site Design Measure Credits					BB	44516	square feet	**BB = A - AA**
NEW Impervious Surface Runoff Value (Potential Stormwater Runoff due to impervious surface area and design storm after implementation of Site Design Measures)					CC	17964	Gallons per 24 hours	**CC = BB x B x 0.083 x 7.48**
Percent reduction in Impervious Surface Runoff Value*					DD	33.4	%	**DD = ((C - CC) / C) x 100%**

***If value for DD is not greater than or equal to %100 then bioretention is required for treating remaining runoff from impervious area indicated by value BB. Design and implement bioretention facility in accordance with Humboldt LID Stormwater Manual - Part C.**

****Infiltration Trench/Basin calculations are based on porosity (35%). Increased trench dimensions (volume) are required to meet 55 gallon minimum capacity.**

Green — Fill In [Enter Value]	Conversions Used:
Red — Calculated Value	1 inch = 0.083 feet
Black — Fixed Value/Selectable Value	1 cubic foot = 7.48 gallons
Regulated Projects Worksheet 2, Version 2.0 - June 29, 2016	# check with agency with project area jurisdiction for requirements

7 Hand Calculations

SHN ENGINEERS & GEOLOGISTS
812 W. Wabash Ave. Tel. 707 / 441-8855
Eureka, CA 95501-2138 Fax: 707 / 441-8877

JOB McKinleyville Ace 017257
SHEET NO. _____ OF _____
CALCULATED BY CJL DATE _____
CHECKED BY _____ DATE _____
SCALE _____

PRE-CONSTRUCTION CONDITIONS

- TRAVEL TIME Sheet Flow: National Engineering Handbook Ch. 15

Max Length $L = \frac{100\sqrt{s}}{n}$

s = slope → 2%
n = roughness → .24

$L = \frac{100\sqrt{.02}}{.24} = 59$ feet

$T_t = \frac{.007(nL)^{.8}}{(P_2)^{.5} s^{.4}}$

n = .24
s = .02
P_2 = 2 yr, 24 hr rain depth → 3.58"
L = 59 feet

$T_t = \frac{.007((.24)(59))^{.8}}{(3.58)^{.5}(.02)^{.4}} = .147$ hours

- TRAVEL TIME Shallow Concentrated Flow:

using URBAN Hydrology for small Watersheds - TR-55
Ch. 3 Time of Concentration and Travel Time

From Fig 3-1, 2% slope for unpaved
Velocity = 2.3 ft/sec

$T_t = \frac{L}{3600V}$

Total Length for flow path = 415 feet
415 - 59
L = 356 feet

$T_t = \frac{356 \text{ ft}}{3600(2.3 \text{ ft/sec})}$

$T_t = .043$ hours

$T_c = .147 + .043$
$= .19$ hours
$T_c = 11.4$ minutes

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CHECKED BY DATE
SCALE

Pre-Construction Conditions Cont.

Rational Method $Q = CiA$

C → Runoff Coeff. for Undeveloped Areas
Fig 819.2A Highway Design Manual

: Relief + Soil Infil + Veg Cover + Surface Storage

Low:	.08	+	.06	+	.06	+	.06	= .26
High:	.14	+	.08	+	.08	+	.1	= .40

Ave = .33

i for T_c = 11 min, 2 yr storm
10 min Duration → i = 1.46 in/hr

A = 2.65 Acres

$Q = .33(1.46)(2.65)$
$= 1.28$ cfs

2 year storm runoff rate = 1.28 cfs

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JOB
SHEET NO OF
CALCULATED BY CJL DATE
CHECKED BY DATE
SCALE

Post-Development Calculations

- Time of Concentration

Sheet Flow for gravel / Paved Area
- Using NEH ch-15

$$\text{MAX } L = \frac{100\sqrt{S}}{n} = \frac{100\sqrt{.02}}{.011} = 1,285 \text{ feet}$$

Actual = 415 < 1,285 ok → Sheet flow entire length

$$T_t = \frac{.007\,(.011 \times 415)^{.8}}{3.58^{.5}\,(.02)^{.4}} = .06 \text{ hours}$$

$T_t = .06$ hrs
$= 3.6$ min → Use 5 min minimum

- Rational Method $Q = CiA$

C → Composite Runoff Coeff.

	C	Area
- Impervious (Roof & Pavement/Concrete)	.9	1.53
- Gravel	.35	.89
- Grass (Remaining Area)	.1	.23

Composite C = .65

See Modified Rational Method for Detention Calculations



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Biological Resource Assessment for:

General Plan Amendment, Zone Reclassification, Lot Line Adjustment and Special Permit

APN: 510-081-001, 510-081-002, 510-081-003
Humboldt County

Prepared for:
Black Dog Partnership

Prepared by:
Hohman and Associates

November 2025
revised **March 2026**

Executive Summary

This document assesses habitats and potentially occurring special-status plants and animals; and identifies potential impacts of proposed operation-related activities on biological resources for parcels 510-081-001, 510-081-002 & 510-081-003. There are no rivers, sloughs, creeks or springs on the property. In the southwest portion of the subject property is a wetland characterized by the presence of pacific silverweed marsh; approximately 1.18 acres of wetland area comprised of 0.30 acres of palustrine emergent wetland (3-parameter) and 0.88 acres of 1 or 2 parameter wetland. Upland habitat within the undeveloped portion of the parcels is generally described as a mown grassy field composed of disturbed grassland and ruderal vegetation dominated by non-native perennial and annual grasses.

No listed or sensitive animal species or their sign were observed. No listed or sensitive plant species were observed or were occurrences noted in CNDDB. There is potential for sensitive amphibian species to be present on the property and for nesting birds to be present during nesting season (February 15 – August 15). It is recommended that pre-construction surveys for sensitive amphibians and nesting birds be conducted if vegetation removal or ground disturbing activities are conducted during this period.

The sensitive vegetation community, pacific silverweed marsh, found inhabiting the 3-parameter wetland and the 1 or 2 parameter wetland should be avoided. If the wetland(s) cannot be avoided, mitigation should be developed and incorporated for future development plans. The project, as planned and mitigated, should avoid significant impacts to existing biological resources.

Omission and Inconsistency Discussion

This assessment also seeks to provide clarity and inclusion of areas not included in previous assessments by SHN. The Natural Resources Assessment (SHN 2019) was reviewed and found the SHN Study Area did not include approximately 2 acres and stopped short of the eastern edge of the parcels. This assessment provided by Hohman and Associates utilizes the parcel boundaries as a whole to align with the location identified in the Black Dog Partnership Project, Humboldt County application No. 17029.

Two seasonally appropriate botanical surveys were conducted by SHN in May and July 2019. See Section 2.3 Field Observations and Studies on page 2 of the SHN report. This section states the surveys were floristic in nature and followed CDFW protocol. The reader is given direction to Appendix 4 for a list of all botanical species encountered. It appears this should read Appendix 3. On page 10 of the SHN report, 5.1 Special-status Plant Species, bottom of the first paragraph states, "No special-status plant species were observed within the project area". Section 5.1 continues with species specific assessment of special-status plants with a moderate or high occurrence. Conclusion for all species is, "Although suitable habitat may exist within the project area for this species, it was not detected".

Inconsistency: There is no reason to question the field qualifications of the botanical surveyor(s) for the SHN report. The first sentence of the last paragraph at the end of Section 5.1 the end of Section 5.1 reads, "One of two required seasonally-appropriate surveys of the study area did not locate any special-status plant species". The last sentence reads, "An additional botanical survey will be necessary to ensure a complete inventory of plants present within the project area".

Based on the preceding information, these sentences in the last paragraph of Section 5.1 appear to be an editorial oversight in assembling the report. Botanical surveys conducted by Hohman and Associates in September 2025 and March 2026 utilize the parcel boundaries as a whole. No rare plants were observed during early and late season surveys.

Setting

The combined parcels are approximately 7.42 acres located in Section 32, Township 7 North, Range 1 East; HB&M, approximately 400' south-east of the Central Avenue and Murray Road intersection on the Arcata North USGS 7.5' Quad. The property is in the Norton Creek Planning Watershed (1109.100200) within the California Floristic Province, Northwestern California region, and North Coast sub-region. The property contains one habitable structure, one commercial retail building, and two uninhabitable structures to be removed. The property is predominately flat with an elevation of approximately 115 feet. Habitat within the undeveloped portion of the parcels is composed primarily of ruderal grassland dominated by non-native perennial and annual grasses such as orchard grass, velvet grass, and sweet vanilla grass. There are no forested areas within or adjacent to the parcels. A small stand of five Sitka spruce is located in the southern half of the study area, adjacent to the wetland. The understory of these five spruce trees is composed of Himalayan blackberry, Pacific blackberry, and non-native grasses and forbs. There are no rivers, sloughs, creeks, springs on the property. Norton Creek is the nearest named watercourse approximately 250 feet to the north of the northern property line. No portion of the property falls within the California Coastal Zone and all surrounding parcels are developed for either residential or commercial purposes.

Methods

This biological resource assessment considers the potentially occurring species and communities that could be affected by project activities associated with residential development based on available spatial data, habitat requirements and site visit. The scoping procedure for listed and non-listed species was initially developed from the California Natural Diversity Database; queried on November 23, 2025 for the Arcata North 7.5' quadrangle and all species were noted. The U.S. Fish and Wildlife Service IPac was queried and generated a scoping list to consider. A general habitat assessment was made for the property and any unique habitats within 1.3 miles; the Biological Assessment Area (BAA). The assessment considers off-site impacts to habitats and species that may be in the BAA buffer area. Consideration of off-site impacts in the BAA is potentially relevant to sensitive species and habitats downslope or downstream of operations (e.g. riparian habitat or salmonids), and to species that require a large range and may be sensitive to disturbance (e.g. the northern spotted owl). Unique habitats may include, rock outcroppings, late seral forest stands, rivers, lakes, woodlands or unique soil types such as serpentine. Unique habitats would be noted based upon aerial photo interpretation, CALVEG vegetation mapping and familiarity with the area. This BAA was chosen because it represents a geographic area of sufficient size to properly consider the potential impacts of future projects on potentially affected, listed species.

Lastly, given the habitat types present on the property and BAA, the following lists were cross-referenced for intercept with the California Department of Fish and Game, "State and Federally Listed Endangered and Threatened Animals of California", October 2025, "State and Federally Listed Endangered, Threatened, and Rare Plants of California", October 2025, "Special Animals List", October 2025 and Special Vascular Plants, Bryophytes, and Lichens List, October 2025.

Hohman and Associates conducted a reconnaissance-level field review on September 19, 2025 of the habitat on and surrounding the subject parcels. This involved looking for presence and signs of listed species and assessing available habitat. Field work was generally conducted from 09:00-12:00, overcast skies, no precipitation, winds were less than 5 mph. During the survey period ambient temperature was 56^0F. Similar to the undeveloped portions of the subject parcels, adjacent undeveloped parcels or their portion are disturbed grassland and ruderal vegetation dominated by non-native perennial and annual grasses. No listed or sensitive animal species or their sign were observed. No listed or sensitive plant species were observed or were occurrences noted in CNDDB. No species of plant or animal considered sensitive, rare, threatened, or endangered were found to be potentially significantly impacted by the project as planned. The sensitive vegetation community, pacific silverweed marsh, found inhabiting the 3-parameter wetland and the 1 or 2 parameter wetland should be avoided or mitigation should be developed and incorporated for future development plans.

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Naiad Biological Consulting; Aquatic Resources Delineation Report (January 2026)

Rank Definitions

Global Conservation Status Definitions
Listed below are definitions for interpreting NatureServe global (range-wide) conservation status ranks. These ranks are assigned by NatureServe scientists or by a designated lead office in the NatureServe network.

G1 Critically Imperiled—At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
G2 Imperiled—At high risk of extinction or elimination due to very restricted range, very few populations, steep declines, or other factors.
G3 Vulnerable—At moderate risk of extinction or elimination due to a restricted range, relatively few populations, recent and widespread declines, or other factors.
G4 Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors.
G5 Secure—Common; widespread and abundant.
G#G# Range Rank—A numeric range rank (e.g., G2G3, G1G3) is used to indicate the range of uncertainty about the exact status of a taxon or ecosystem type. Ranges cannot skip more than two ranks (e.g., GU should be used rather than G1G4).

Infraspecific Taxon Conservation Status Ranks

T# Infraspecific Taxon (trinomial)—The status of infraspecific taxa (subspecies or varieties) are indicated by a "T-rank" following the species' global rank. Rules for assigning T-ranks follow the same principles outlined above. For example, the global rank of a critically imperiled subspecies of an otherwise widespread and common species would be G5T1. A T subrank cannot imply the subspecies or variety is more abundant than the species. For example, a G1T2 subrank should not occur. A vertebrate animal population, (e.g., listed under the U.S. Endangered Species Act or assigned candidate status) may be tracked as an infraspecific taxon and given a Trank; in such cases a Q is used after the T-rank to denote the taxon's informal taxonomic status.

Subnational (S) Conservation Status Ranks
S1 Critically Imperiled—Critically imperiled in the jurisdiction because of extreme rarity or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the jurisdiction.

S2 Imperiled—Imperiled in the jurisdiction because of rarity due to very restricted range, very few populations, steep declines, or other factors making it very vulnerable to extirpation from jurisdiction.
S3 Vulnerable—Vulnerable in the jurisdiction due to a restricted range, relatively few populations, recent and widespread declines, or other factors making it vulnerable to extirpation.

S4 Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors.

S5 Secure—Common, widespread, and abundant in the jurisdiction.

S#S# Range Rank — A numeric range rank (e.g., S2S3 or S1S3) is used to indicate any range of uncertainty about the status of the species or ecosystem. Ranges cannot skip more than two ranks (e.g., SU is used rather than S1S4).

Rank Qualifiers
? Inexact Numeric Rank—Denotes inexact numeric rank; this should not be used with any of the Variant Global Conservation Status Ranks or GX or GH.

Q Questionable taxonomy that may reduce conservation priority— Distinctiveness of this entity as a taxon or ecosystem type at the current level is questionable; resolution of this uncertainty may result in change from a species to a subspecies or hybrid, or inclusion of this taxon or type in another taxon or type, with the resulting taxon having a lower-priority (numerically higher) conservation status rank. The "Q" modifier is only used at a global level and not at a national or subnational level.

The California Rare Plant Ranks
1A. Presumed extirpated in California and either rare or extinct elsewhere
1B. Rare or Endangered in California and elsewhere
2A. Presumed extirpated in California, but more common elsewhere
2B. Rare or Endangered in California, but more common elsewhere
3. Plants for which we need more information - Review list
4. Plants of limited distribution - Watch list

1A: Plants Presumed Extirpated in California and either rare or extinct elsewhere

The plants of Rank 1A are presumed extirpated because they have not been seen or collected in the wild in California for many years. This rank includes those plant taxa that are both presumed extinct, as well as those plants which are presumed extirpated in California and rare elsewhere. A plant is extinct if it no longer occurs anywhere. A plant that is extirpated from California has been eliminated from California, but may still occur elsewhere in its range.

1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
(Includes Rare Plant Ranks 1B.1, 1B.2, 1B.3)
The plants of Rank 1B are rare throughout their range with the majority of them endemic to California. Most of the plants that are ranked 1B have declined significantly over the last century. California Rare Plant Rank 1B plants constitute the majority of plant taxa tracked by the CNDDB, with more than 1,000 plants assigned to this category of rarity.

2A: Plants Presumed Extirpated in California, but more common elsewhere
The plants of Rank 2A are presumed extirpated because they have not been seen or collected in the wild in California for many years. This rank includes only those plant taxa that are presumed extirpated in California, but that are more common elsewhere in their range. Note: Plants of both Rank 1A and 2A are presumed extirpated in California; the only difference is the status of the plants outside of the state.

2B: Plants Rare, Threatened, or Endangered in California, but More Common Elsewhere
(Includes Rare Plant Ranks 2B.1, 2B.2, 2B.3)
The plants of Rank 2B are rare, threatened or endangered in California, but more common elsewhere. Plants common in other states or countries are not eligible for consideration under the provisions of the **Federal** Endangered Species Act; however they are eligible for consideration under the **California** Endangered Species Act. This rank is meant to highlight the importance of protecting the geographic range and genetic diversity of more widespread species by protecting those species whose ranges just extend into California. Note: Plants of both Rank 1B and 2B are rare, threatened or endangered in California; the only difference is the status of the plants outside of the state.

3: Plants about which more information is needed, a review list. Many of the plants constituting California Rare Plant Rank 3 meet the definitions of the California Endangered Species Act of the California Fish and Game Code and are eligible for state listing. Impacts to these species or their habitat should be analyzed during preparation of environmental documents relating to CEQA, or those considered to be functionally equivalent to CEQA, as they may meet the definition of Rare or Endangered under CEQA Guidelines §15125 (c) and/or §15380.

4: Plants of limited distribution, a watch list. Plants with a California Rare Plant Rank of 4 are of limited distribution or infrequent throughout a broader area in California, and their status should be monitored regularly. Should the degree of endangerment or rarity of a California Rare Plant Rank 4 plant change, we will transfer it to a more appropriate rank. Some of the plants constituting California Rare Plant Rank 4 meet the definitions of the California Endangered Species Act of the California Fish and Game Code, and few, if any, are eligible for state listing. Nevertheless, many of them are significant locally, and we strongly recommend that California Rare Plant Rank 4 plants be evaluated for impact significance during preparation of environmental documents relating to CEQA, or those considered to be functionally equivalent to CEQA, based on CEQA Guidelines §15125 (c) and/or §15380.

Threat Ranks:
The California Rare Plant Ranks (CRPR) use a decimal-style threat rank. The threat rank is an extension added onto the CRPR and designates the level of threats by a 1 to 3 ranking with 1 being the most threatened and 3 being the least threatened. So most CRPRs read as 1B.1, 1B.2, 1B.3, etc. Note that some Rank 3 plants do not have a threat code extension due to difficulty in ascertaining threats for these species. Rank 1A and 2A plants also do not have threat code extensions since there are no known extant populations of the plants in California.

Threat Code extensions and their meanings:
.1 - Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 – Moderately threatened in California (20-80% of occurrences threatened / moderate degree and immediacy of threat)
.3 – Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

FESA and CESA abbreviation definitions
CR – California Rare
CE – California Endangered
FE – Federally Endangered

Tables - Special-Status Species

Table 1. Birds

Scientific Name	Common Name	FESA	CESA	CDFW	GRank	SRank	Potential Occur
Falco peregrinus anatum	American peregrine falcon	Delisted	Delisted	-	G4T4	S3S4	Low
Riparia riparia	bank swallow	None	None	-	G5	S3	None
Ardea herodias	great blue heron	None	None	-	G5	S4	Low
Pandion haliaetus	osprey	None	None	WL	G5	S4	None
Elanus leucurus	white-tailed kite	None	None	FP	G5	S3S4	Low

Table 2. Mammals

Scientific Name	Common Name	FESA	CESA	CDFW	GRank	SRank	Potential Occur
Aplodontia rufa humboldtiana	Humboldt mountain beaver	None	None	-	G5TNR	SNR	None
Myotis evotis	long-eared myotis	None	None	-	G5	S3	None
Pekania pennanti	fisher	None	None	SSC	G5	S2S3	None
Erethizon dorsatum	North American porcupine	None	None	-	G5	S3	None

Table 3. Amphibians and Reptiles

Scientific Name	Common Name	FESA	CESA	CDFW	GRank	SRank	Potential Occur
Ascaphus truei	Pacific tailed frog	None	None	SSC	G4	S3S4	None
Rana aurora	northern red-legged frog	None	None	SSC	G4	S3	Moderate
Rana boylii	foothill yellow-legged frog—north coast DPS	None	None	SSC	G3T4	S4	None
Rhyacotriton variegatus	Southern torrent salamander	None	None	SSC	G3?	S2S3	None
Actinemys marmorata	northwestern pond turtle	Proposed Threatened	None	SSC	G2	SNR	None

Table 4. Fish

Scientific Name	Common Name	FESA	CESA	CDFW	GRank	SRank	Potential Occur
Oncorhynchus kisutch pop. 2	Coho salmon - southern Oregon / northern California ESU	Threatened	Threatened	-	G5T2Q	S2	None
Oncorhynchus clarkii	coast cutthroat trout	None	None	SSC	G4	S3	None
Oncorhynchus mykiss irideus pop. 49	steelhead - northern California DPS winter-run	Threatened	None	SSC	G5T3Q	S3	None
Thaleichthys pacificus	eulachon	Threatened	None	SSC	G4	S1	None
Entosphenus tridentatus	Pacific lamprey	None	None	SSC	G4	S3	None
Lampetra richardsoni	western brook lamprey	None	None	SSC	G4G5	S3S4	None

Table 5. Invertebrates

Scientific Name	Common Name	FESA	CESA	CDFW	GRank	SRank	Potential Occur
Scaphinotus behrensi	Behrens' snail-eating beetle	None	None	-	G2G4	S2S4	None
Bombus occidentalis	western bumble bee	None	Candidate	-	G3	S1	Moderate

Table 6. Plants

Scientific Name	Common Name	FESA	CESA	RplantRank	GRank	SRank	Potential Occur
Gilia capitata ssp. *pacifica*	pacific gilia	None	None	1B.2	G5T3	S2	Moderate
Hesperevax sparsiflora var. brevifolia	Short-leaved evax	None	None	1B.2	G4T3	S2	Moderate
Montia howellii	Howell's montia	None	None	2B.2	G3G4	S2	High
Oenothera wolfii	Wolf's evening-primrose	None	None	1B.1	G2	S1	Moderate
Sidalcea malachroides	maple-leaved checkerbloom	None	None	4.2	G3	S3	High
Sidalcea malviflora ssp. patula	Siskiyou checkerbloom	None	None	1B.2	G5T2	S2	Moderate
Sidalcea oregana ssp. *exima*	Coast checker-bloom	None	None	1B.2	G5T2	S2	Moderate
Trichodon cylindricus	cylindrical trichodon	None	None	2B.2	G4G5	S2	Low
Fissidens pauperculus	minute pocket moss	None	None	1B.2	G3?	S2	Low
Castilleja ambigua var. humboldtiensis	Humboldt Bay owl's-clover	None	None	1B.2	G5T2	S2	None
Abronia umbellata var. breviflora	pink sand-verbena	None	None	1B.1	G4G5T2	S2	None
Lathyrus japonicus	seaside pea	None	None	2B.1	G5	S3	None
Lycopodium clavatum	running-pine	None	None	4.1	G5	S3	Low
Carex lyngbyei	Lyngbye's sedge	None	None	2B.2	G5	S3	None
Carex arcta	northern clustered sedge	None	None	2B.2	G5	S1	None
Lilium occidentale	western lily	Endangered	Endangered	1B.1	G1G2	S1	Low

Potential Special-Status Species Details

I. Potentially Occurring Special Status Birds

1. **Peregrine falcon (*Falco peregrinus anatum*)**
   Special Status: Federally Delisted, State Delisted, California Department of Forestry & Fire protection "Sensitive", Protected under Migratory Bird Treaty Act; NatureServe Ranks: G4T4, S3S4
   Family: Falconidae
   Habitat/Life-history Requirements: The formerly federally endangered peregrine falcon was delisted in 1999 due to recovery (USFWS ECOS). The peregrine falcon is an uncommon year-round resident and migrant in California (Zeiner et al. 1988). Peregrine falcons typically use cliffs and ledges near bodies of water for cover and nesting areas, but they may also nest on buildings or bridges in the city (Sibley 2003, Cornell Lab). Peregrine falcons may breed in woodland, forest, or coastal habitat (Zeiner et al. 1988). Riparian and wetland areas are important habitat yearlong (Zeiner et al. 1988).
   Status within the Project Area: No potential nesting habitat exists within the project area. No observations within or adjacent to the property as per CNDDB 2025.
   Potential Impact/Mitigation: Current and future development will not significantly impact nesting peregrine falcons or their habitat.

2. **Bank swallow (*Riparia riparia)***
   Status: State threatened, Bureau of Land Management "Sensitive", protected under Migratory Bird Treaty Act, NatureServe Ranks G5, S4
   Family: Hirundinidae
   Habitat/Life-history Requirements: Bank Swallows live in low areas along rivers, streams, ocean coasts, and reservoirs. Their territories usually include vertical cliffs or banks where they nest in colonies. Bank Swallows live in low areas along rivers, streams, ocean coasts, and reservoirs. Their territories usually include vertical cliffs or banks where they nest in colonies.
   Status within the Project Area: Potential habitat does not exist within the project area. The bank swallows nearest observation are over one mile outside of the project area as per CNDDB 2025.
   Potential Impact/Mitigation No potential nest sites are located within the project boundary. The project should not significantly impact nesting bank swallows or their habitat.

3. **Great blue heron (*Ardea herodias*)**
   Special Status: California Department of Forestry & Fire protection "Sensitive"; Protected under Migratory Bird Treaty Act; NatureServe Ranks: G5, S4
   Family: Ardeidae
   Habitat/Life-history Requirements: Great Blue Herons live in both freshwater and saltwater habitats, and also forage in grasslands and agricultural fields, where they stalk frogs and mammals. Most breeding colonies are located within 2 to 4 miles of feeding areas, often in isolated swamps or on islands, and near lakes and ponds bordered by forests. Great Blue Herons nest mainly in trees, but will also nest on the ground, on bushes, in mangroves, and on structures such as duck blinds, channel markers, or artificial nest platforms (Cornell Lab).
   Status within the Project Area: Marginal foraging opportunities exist within the area. No sightings have been recorded in the area; the nearest recorded observation was over five miles southeast from the project area as per CNDDB 2025.
   Potential Impact/Mitigation Current and future development will not significantly impact nesting great blue herons or their habitat.

4. **Osprey (*Pandion haliaetus*)**
Special Status: CDFW Watch List; Protected under Migratory Bird Treaty Act; NatureServe Ranks: G5, S4
Family: Accipitridae
Habitat/Life-history Requirements: Ospreys primarily prey on fish and they require large fish-bearing waters for hunting (Zeiner et al. 1988). Ospreys typically make large nests in tall snags or trees high off the ground in open forest habitats (Zeiner et al.).
Status within the Project Area: Ospreys are unlikely to occur in the area directly impacted by the project. No potential nesting areas are present in the project area. The nearest occurrence mapped in CNDDB 2025 is more than four miles away from the project.
Potential Impact/Mitigation: No know Osprey are present within or adjacent to the property. Current and future development will not significantly impact nesting ospreys or their habitat.

5. **White-tailed kite (*Elanus leucurus*)**
Special Status: CDFW fully protected, Protected under Migratory Bird Treaty Act; Nature Serve Ranks: G5, S3S4
Family: Accipitridae
Habitat/Life-history Requirements: The white-tailed kite is a common to uncommon, yearlong resident in coastal and valley lowlands; rarely found away from agricultural areas. Forages in undisturbed, open grasslands, meadows, farmlands and emergent wetlands. Uses trees with dense canopies for cover. Forages from a central perch over areas as large as 1.9 sq mi (CWHR). White-tailed kites typically nest in the upper third of trees that may be 10–160 feet tall (Cornell Lab).
Status within the Project Area: No foraging opportunities exist within the area. No sightings have been recorded in the area; the nearest recorded observation was over four miles south as per CNDDB 2025.
Potential Impact/Mitigation: Current and future development will not significantly impact nesting white-tailed kites or their habitat.

II. Mammals

1. **Humboldt mountain beaver (*Aplodontia rufa humboldtiana*)**
Special Status: CDFW Special Animals List (2025), NatureServe Ranks: G5TNR, SNR
Family: Muridae
Habitat/Life-history Requirements: The Humboldt mountain beaver occurs throughout Cascade and Klamath ranges. Mountain beavers occur in dense riparian-deciduous and open, brushy stages of most forest types, in the Coast Ranges, most populations occur below 2700 ft.
Status within the Project Area: The project area may provide suitable habitat. There are areas of potential habitat adjacent to the project. Several occurrences are mapped in CNDDB 2025 surrounding the project area. Frequent open and intermediate-canopy coverage with a dense understory near water. Deep, friable soils are required for burrowing, along with a cool, moist microclimate (CWHR). Humboldt mountain beavers have very small home ranges: mean of 0.32 hectares for males; up to 0.2 hectares, with a mean of 0.1 hectare (CWHR). The nearest reported sighting was over one mile northwest of the project area as per CNDDB 2025.
Potential Impact/Mitigation: No potential Humboldt mountain beaver breeding or foraging sites are present in the project area. Current and future development will not significantly impact Humboldt mountain beavers or their habitat.

2. **Long-eared myotis (*Pekania pennanti*)**
   Special Status: CDFW Special Animals List (2025), Bureau of land management "Sensitive" NatureServe Ranks: G5, S3
   Family: Vespertilionidae
   Habitat/Life-history Requirements: The long-eared myotis is widespread in California, but generally is believed to be uncommon in most of its range. It avoids the arid Central Valley and hot deserts, occurring along the entire coast and in the Sierra Nevada, Cascades, and Great Basin from the Oregon border south through the Tehachapi Mts. to the Coast Ranges. This species has been found in nearly all brush, woodland, and forest habitats, but coniferous woodlands and forests seem to be preferred. This species roosts in buildings, crevices, spaces under bark, and snags. Caves are used primarily as night roosts. Nursery colonies of 12-30 individuals are found in buildings, crevices, snags, and behind bark (CWHR).
   Status within the Project Area: The project area does not contain long-eared myotis habitat. CNDDB 2025 notes sites over two miles north east of the project area.
   Potential Impact/Mitigation: Current and future development will not significantly impact long-eared myotis or their habitat.

3. **Fisher - West Coast DPS (*Pekania pennanti*)**
   Special Status: CDFW Species of Special Concern; NatureServe Ranks: G5, S2S3
   Family: Mustelidae
   Habitat/Life-history Requirements: The fisher uses large expanses of forest with moderate to high canopy closure, and will avoid open forest, grasslands, and wetlands (USFWS 2014). Fishers use cavities in live trees, snags and down logs for reproductive dens (USFWS 2014). Structural complexity is a critical element of fisher habitat, necessary to provide cover for resting and denning, and habitat for prey (USFWS 2014).
   Status within the Project Area: The project area does not contain fisher habitat. CNDDB 2025 notes one sighting less than one mile east of the project area.
   Potential Impact/Mitigation: The property contains no forested area or suitable fisher habitat. Current and future development will not significantly impact fishers or their habitat.

4. **North American porcupine (*Erethizon dorsatum*)**
   Special Status: CDFW Special Animals List (2025); NatureServe Ranks: G5, S3
   Family: Erethizontidae
   Habitat/Life-history Requirements: The American porcupine is most commonly found in montane conifer, Douglas-fir, alpine dwarf-shrub, and wet meadow habitats (Zeiner et al. 1988). The herbivore feeds on a wide variety of aquatic and terrestrial herbs, shrubs, fruits, leaves, and buds in the summer (Zeiner et al. 1988). During the winter, the porcupine diet includes evergreen leaves, twigs, bark, and cambium of trees, particularly conifers (Zeiner et al. 1988).
   Status within the Project Area: Although widely distributed throughout North America and occurring in many habitats, the North American porcupine is considered vulnerable in California. One occurrence is mapped over four miles south of the project area as per CNDDB 2025
   Potential Impact/Mitigation: Current and future development will not significantly impact North American porcupines or their habitat.

III. Amphibians and Reptiles

1. **Pacific tailed frog (*Ascaphus truei*)**
   Special Status: CDFW "Species of Special Concern"; NatureServe Ranks: G4, S3S4
   Family: Ascaphidae
   Habitat/Life-history Requirements: The Pacific tailed frog requires permanent, cool streams in conifer-dominated habitats including redwood, Douglas fir, mixed-conifer, and ponderosa pine habitats (Zeiner et al. 1988). They prefer turbulent waters with rocky substrates in steep-walled valleys with dense vegetation, where the water temperature remains low (Zeiner et al. 1988). Increased water temperature and siltation from logging pose threats to the amphibian (Zeiner et al. 1988).
   Status within the Project Area: The project area does not contain Pacific tailed frog habitat. No watercourses are present on the property. The nearest sighting of Pacific tailed frogs is three miles east of the project area
   Potential Impact/Mitigation: The project does not impact the pacific tailed frog habitat. Current and future development will not significantly impact pacific tailed frogs or their habitat.

2. **Northern red-legged frog (*Rana aurora*)**
   Special Status: CDFW "Species of Special Concern"; NatureServe Ranks: G2, SNR
   Family: Ranidae
   Habitat/Life-history Requirements: Found in riparian areas and permanent bodies of relatively quiet water such as ponds, pools along streams, reservoirs, springs, lakes and marshes. This frog is highly aquatic, preferring shorelines with extensive vegetation for terrestrial cover and escaping to pools 3 feet or deeper.
   Status within the Project Area: The project area contains marginal breeding habitat for northern red legged frog. The nearest sighting of northern red-legged frog is on the west side of Central Avenue, about 75 meters south of its intersection with Reasor Road. The next closest occurrence is Beau Pre Golf Course to the north.
   Potential Impact/Mitigation: The project has the potential to support northern red legged frog. Amphibian surveys should be conducted prior to the initiation of work.

3. **Foothill yellow-legged frog (*Rana boylii*)**
   Special Status: State Candidate for listing as Threatened; CDFW Species of Special Concern; NatureServe Ranks: G3, S3
   Family: Ranidae
   Habitat/Life-history Requirements: The foothill yellow-legged frog primarily inhabits rocky streams or rivers with permanent water, and may be found in many habitats, including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadows (Zeiner et al. 1988). Breeding primarily occurs in low-velocity, shallow stream habitats with high habitat heterogeneity (Yarnell 2013). Foothill yellow-legged frogs may also travel substantial distances overland and use seasonally wet areas (Bourque 2008). The invasive American bullfrog and introduced fish species contribute to the reduction of foothill yellow legged frog populations (Zeiner et al. 1988).
   Status within the Project Area: The project area does not contain foothill yellow-legged frog habitat. The nearest sighting noted in CNDDB is along the Mad River over two miles south of the project area.
   Potential Impact/Mitigation: The project does not impact foothill yellow-legged frog habitat. Current and future development will not significantly impact foothill yellow-legged frogs or their habitat.

4. **Southern torrent salamander (*Rhyacotriton variegatus*)**
Special Status: CDFW Species of Special Concern; NatureServe Ranks: G3G4, S2S3
Family: Rhyacotritonidae
Habitat/Life-history Requirements: The southern torrent salamander primarily occupies cold, shaded permanent streams and seeps in redwood, Douglas fir, mixed conifer, montane riparian and montane hardwood-conifer habitats in Sonoma, Mendocino, Humboldt and Lake Counties (Zeiner et al. 1988). The newt requires rapid, permanent streams with rocky substrate for breeding and larval development, and on land normally occurs only very close to a stream or seepage (Zeiner et al. 1988).
Status within the Project Area: The project area does not contain southern torrent salamander habitat. No forested streams or seeps are present on the property. The nearest reported sighting is over five miles south as per CNDDB 2025.
Potential Impact/Mitigation: The project does not impact southern torrent habitat. Current and future development will not significantly impact southern torrent salamanders or their habitat.

5. **Northwestern pond turtle (*Actinemys marmorata*)**
Special Status: CDFW "Species of Special Concern"; Endangered Species Act proposed threatened; United States Forest Service & Bureau of Land Management "Sensitive" NatureServe Ranks: G2, SNR
Family: Emydidae
Habitat/Life-history Requirements: The northwestern pond turtle is associated with permanent or nearly permanent water bodies including rivers, creeks, small lakes, ponds and marshes. Preferred sites within a given water body generally involve deeper pools and sections with ample basking sites such as logs, rocks, or floating mats of vegetation (NatureServe).
Status within the Project Area: The project area does not contain northwestern pond turtle habitat. No streams, watercourses or water bodies are present on the property. The nearest sighting of northwestern pond turtles was over two miles east of the project area as per CNDDB 2025.
Potential Impact/Mitigation: The project does not impact northwestern pond turtle habitat. Current and future development will not significantly impact northwestern pond turtles or their habitat.

IV. Fishes

1. **Coho salmon - southern Oregon / northern California ESU (*Oncorhynchus kisutch*)**
Special Status: Federally Threatened, California Threatened; NatureServe Ranks: G5T2Q, S2
Family: Salmonidae
Habitat/Life-history Requirements: Coho salmon are a federally and state-listed anadromous fish that occupy low gradient rivers and coastal streams (CDFW). The anadromous salmonids return to these watersheds in the fall and early winter to spawn in gravel substrate, after the first major rains (Moyle et al. 2008). Coho require cool, clear perennial streams and rivers with structural complexity for cover and low suspended sediment (Moyle et al. 2008). Juveniles are most abundant in well-shaded, deep pools with many structural elements that provide cover (Moyle et al. 2008). Sedimentation is a major threat to salmonids in their early life stages.
Status within the Project Area: No coho salmon bearing streams or watercourses are present in or adjacent to the project area. No habitat present. The nearest coho salmon habitat is the Mad River over three miles south of the property.
Potential Impact/Mitigation: The project does not impact coho salmon habitat. Current and future development will not impact coho salmon or their habitat.

2. **Coast cutthroat trout (*Oncorhynchus clarkii*)**
Special Status: American Fisheries Society "Vulnerable"; CDFW "Species of Special Concern"; U.S. Forest Service "Sensitive"; NatureServe Ranks: G5T4, S3
Family: Salmonidae

Habitat/Life-history Requirements: Coastal cutthroat trout have a complex life history in which they depend on freshwater streams and rivers for spawning and rearing. Coastal cutthroat trout require cool, clean, and well oxygenated water. In California, spawning is reported to begin in November, with peak spawning in late December in larger river basins and late January and February in the smaller coastal rivers and streams. Redds are primarily built in the tails of pools in streams with low stream gradient and low flows, usually less than 0.3 m3/s during the summer (Johnson et al. 1999).
Status within the Project Area: No coastal cutthroat trout bearing streams or watercourses are present in or adjacent to the project area. No habitat present. The nearest coastal cutthroat trout habitat is Widow White Creek less than one mile south of the property as per CNDDB 2025.
Potential Impact/Mitigation: The project does not impact coastal cutthroat trout habitat. Current and future development will not impact coastal cutthroat trout or their habitat.

3. **Steelhead – northern California DPS winter-run (*Oncorhynchus mykiss irideus* pop. 49)**
Special Status: Federally Threatened; CDFW "Species of Special Concern"; NatureServe Ranks: G5T3Q, S3
Family: Salmonidae
Habitat/Life-history Requirements: Steelhead are anadromous rainbow trout that migrate to the ocean as juveniles and return to freshwater habitats to spawn. The Northern California Distinct Population Segment (DPS) ranges from Redwood Creek to just south of the Gualala River, and includes the Eel River watershed (Moyle et al. 2008). Salmonids, including steelhead, require cool, clear perennial streams and rivers with structural complexity for cover and low suspended sediment. Steelhead may swim upstream during the winter to spawn in stream segments that are not accessible to other salmonids during low flows (Moyle et al. 2008). Sedimentation is a major threat to salmonids in their early life stages.
Status within the Project Area: No streams or watercourses are present in or adjacent to the project area. Potential steelhead habitat exists in both Norton creek and Widow White Creek to the north and south of the property respectively. The project area is not hydrologically linked by surface flows to either watercourse.
Potential Impact/Mitigation: The project does not impact steelhead habitat. Current and future development will not significantly impact steelhead or their habitat.

4. **Eulachon (*Thaleichthys pacificus*)**
Special Status: Federally Threatened; CDFW "Species of Special Concern" NatureServe Ranks: G4, S1
Family: Osmeridae
Habitat/Life-history Requirements: The Southern distinct population segment of eulachon can be found in the northeastern Pacific Ocean from the Mad River in northern California to the Nass River in British Columbia. Many rivers within the range of eulachon have consistent yearly spawning runs; however, eulachon may appear in other rivers only on an irregular or occasional basis. The spawning migration typically begins when river temperatures are between 0 and 10º C. Milt and eggs are released over sand or coarse gravel (NOAA).
Status within the Project Area: No euchalon habitat is present on the property. The closest potential euchalon habitat is the Mad River over one mile from the project area. The project area is not hydrologically linked by surface flows to the Mad River.
Potential Impact/Mitigation: The project does not impact euchalon habitat. Current and future development will not significantly impact euchalon or their habitat.

5. **Pacific lamprey (*Entosphenus tridentatus*)**

Special Status: American Fisheries Society "Vulnerable"; Bureau of Land Management "Sensitive"; CDFW "Species of Special Concern"; U.S. Forest Service "Sensitive"; NatureServe Ranks: G4, S3
Family: Petromyzontidae
Habitat/Life-history Requirements: Pacific lamprey use different habitats during different life stages, and including both riverine and oceanic environments. Young, or larval, Pacific lamprey filter-feed from burrows in the river bottom. As adults in the marine environment, Pacific lampreys are parasitic and feed on a variety of fish. Pacific lampreys spawn in similar habitats to salmon; in gravel bottomed streams, at the upstream end of riffle habitat, typically above suitable young larvae habitat. Larval lamprey drift downstream to areas of low velocity and fine substrates where they burrow, grow and live as filter feeders for two to seven years (U.S. FWS).
Status within the Project Area: No pacific lamprey habitat is present on the property. The nearest lamprey presence was noted in 1994 in Jolly Giant Creek over five miles south of the project area as per CNDDB 2025. The project area is not hydrologically linked by surface flows to Jolly Giant Creek.
Potential Impact/Mitigation: The project does not impact pacific lamprey habitat. Current and future development will not significantly impact pacific lamprey or their habitat.

6. **Western brook lamprey (*Lampetra richardsoni*)**
Special Status: CDFW "Species of Special Concern"; U.S. Forest Service "Sensitive"; NatureServe Ranks: G4G5, S3S4
Family: Petromyzontidae
Habitat/Life-history Requirements: Spawning behavior is similar to that of Pacific lamprey (Schultz 1930, Morrow 1980). Spawning adult brook lamprey build nests in gravel riffles that are slightly smaller in diameter than their body lengths. Western brook lampreys have habitat requirements similar to those of salmonid species, with which they co-occur. They need clear, cold, water in little disturbed watersheds, as well as clean gravel near cover for spawning (Vladykov and Follet).
Status within the Project Area: No western brook lamprey habitat is present on the property. The nearest lamprey presence was noted in in Janes Creek over four miles south of the project area as per CNDDB 2025. The project area is not hydrologically linked by surface flows to Janes Creek.
Potential Impact/Mitigation: Current and future development will not significantly impact western brook lamprey or their habitat.

V. Invertebrates

1. **Behrens' snail-eating beetle (*Scaphinotus behrensi*)**
Special Status: CDFW Special Animals List; NatureServe Ranks: G2G4, S2S4
Family: Carabidae
Habitat/Life-history Requirements: Behrens snail-eating beetle can be found from lowlands to midlands, sea level- 1170 meters altitude, in temperate coniferous rainforests. Microsite requirements include shaded, moderately moist ground. Behrens' snail-eating beetle is nocturnal, taking cover in the day under old fallen trees and in leaf litter, sometimes in rotten tree trunks (GBIF).
Status within the Project Area: The property does not contain habitat suitable for Behrens' snail-eating beetle. The nearest observation of Behrens' snail-eating beetle was over five miles south as per CNDDB 2025.
Potential Impact/Mitigation: Current and future development on the property will not significantly impact Behrens' snail eating beetle or their habitat.

2. **Western bumble bee (*Bombus occidentalis*)**
Special Status: State Candidate Endangered, NatureServe Ranks: G3, S1

Family: Apidae
Habitat/Life-history Requirements: The western bumble bee is a generalist short-tongued forager that may be found in open habitats such as grassy areas, urban parks and gardens, chaparral and shrub areas, and mountain meadows (IUCN). Like many bumble bees, the western bumble bee nests underground in abandoned rodent holes (IUCN). The western bumble bee is threatened by disease, habitat loss and degradation, and insecticides.
Status within the Project Area: The property has the potential to support many native pollinators. Grassy openings dominated by invasive species are present or adjacent to the project area. Marginal habitat is currently present given the level of disturbance from annual mowing.
Potential Impact/Mitigation: Impacts to western bumble bees are limited and temporary. Replanting disturbed areas with native vegetation may increase foraging western bumble bee habitat.

VI. Plants

1. **Pacific gilia (*Gilia capitata* ssp. *pacifica*)**
Special Status: California Rare plant rank 1B.2; Heritage rank G5T3, S2
Family: Polemoniaceae
Habitat/Life-history Requirements: Pacific gilia habitats include coastalbluff scrub, chaparral, and coastal prairie, valley, and foothill grasslands, ranging in elevation from 5 to 1,345 meters above sea level.
Status within the Project Area: There is no Rarefind occurrence for this taxon within the nine-quad search. Although suitable habitat may exist within the project area for this species, it was not detected.
Potential Impact/Mitigation: The project does not significantly impact pacific gilia.

2. **Short-leaved evax (*Hesperevax sparsiflora* var. *brevifolia*)**
Special Status: California Rare plant rank 1B.2; Heritage rank G4T3, S2
Family: Asteraceae
Habitat/Life-history Requirements: Short-leaved evax habitats include coastal bluff scrub (sandy), coastal dunes, coastal prairie from 0 to 215 meters above sea level.
Status within the Project Area: There is no Rarefind occurrence for this taxon within the nine-quad search. Although suitable habitat may exist within the project area for this species, it was not detected.
Potential Impact/Mitigation: The project does not significantly impact short-leaved evax.

3. **Howell's montia (*Montia howellii*)**
Special Status: California Rare plant rank 2B.2; Heritage rank G3G4, S2
Family: Montiaceae
Habitat/Life-history Requirements: Howell's montia habitats include meadows/seeps, north coast coniferous forest, and wetlands. It occurs in vernally wet sites (often on compacted soil), ranging from 10 to 1,005 meters above sea-level.
Status within the Project Area: Within the nine-quad search, there are 110 Rarefind occurrences. Although suitable habitat may exist within the project area for this species, it was not detected.
Potential Impact/Mitigation: The project does not significantly impact Howell's montia. Proposed wetland mitigation may increase viable habitat.

4. **Wolf's evening-primrose (*Oenothera wolfii*)**
Special Status: California Rare plant rank 1B.1; Heritage rank G2, S1
Family: Onagraceae
Habitat/Life-history Requirements: Reported habitats include Coastal bluff scrub, coastal dunes and prairie, lower montane coniferous forest in sandy, usually mesic areas

Status within the Project Area: Within the nine-quad search, there are 29 occurrences. Although suitable habitat may exist within the project area for this species, it was not detected.
Potential Impact/Mitigation: The project does not significantly impact Wolf's evening-primrose.

5. **Maple-leaved checker-bloom (*Sidalcea malachroides*)**
Special Status: California Rare plant rank 4.2; Heritage rank G3, S3
Family: Malvaceae
Habitat/Life-history Requirements: Reported habitats include broadleaf upland forest, coastal prairie and scrub, north coast coniferous forest, riparian woodland, often in disturbed areas
Status within the Project Area: Within the nine-quad search, there are 136 occurrences. Although suitable habitat may exist within the project area for this species, it was not detected.
Potential Impact/Mitigation: The project does not significantly impact maple-leaved checker-bloom.

6. **Siskiyou checker-bloom (*Sidalcea malviflora* ssp. *patula*)**
Special Status: California Rare plant rank 1B.2; Heritage rank G5T2, S2
Family: Malvaceae
Habitat/Life-history Requirements: Reported habitats include coastal bluff scrub, coastal prairie, north coast coniferous forest, open coastal forest, and roadcuts from 5 to 1,255 meters above sea level.
Status within the Project Area: Within the nine-quad search, there are 49 occurrences. One noted occurrence is less than 100 feet south of the property as per CNDDB 2025. Although suitable habitat may exist within the project area for this species, presence is unlikely given the level of disturbance from annual mowing.
Potential Impact/Mitigation: The project does not significantly impact Siskiyou checker-bloom.

7. **Coast checker-bloom (*Sidalcea oregana* ssp. *exima*)**
Special Status: California Rare plant rank 1B.2; Heritage rank G5T2, S2
Family: Malvaceae
Habitat/Life-history Requirements: Reported habitats include north coast and lower montane coniferous forests, meadows and seeps, near meadows, and in gravelly soil from 5 to 1,805 meters above sea level.
Status within the Project Area: Within the nine-quad search, there are 19 occurrences. Although suitable habitat may exist within the project area for this species, it was not detected.
Potential Impact/Mitigation: The project does not significantly impact coast checker-bloom.

Four seasonally appropriate botanical surveys were conducted for this project; on May 8th 2019 and July 9th 2019. These surveys were conducted by SHN Engineering staff biologists. A subsequent two surveys were conducted on September 19th, 2025 and March 16, 2026 by Hohman and Associates staff botanists. A list of potential target special status species was compiled prior to botanical surveys. The list of potential target special status species was compiled from the Arcata North and all surrounding 7.5 minute quadrangles. 65 Special status plants were identified in the nine-quad search. Out of the 65 special status plants identified 7 species were identified to have a moderate or higher potential to occur in the project area. No plants considered sensitive, rare, threatened, or endangered (including candidate species) in the United States and/or The State of California were detected during botanical surveys within the subject parcels. A Sensitive Natural Vegetation Community was detected in prior surveys for this project. A sensitive vegetation community was observed within the study area in the palustrine emergent wetland consisting of an Argentina egedii Herbaceous Alliance (Pacific silverweed marsh [G4/S2]) (SHN 2019). Construction activities should be excluded from the Sensitive Vegetation Community. It is recommended that exclusionary fencing be erected with a minimum 50-foot buffer around the pacific silverweed marsh.

VII. Wetland

A 2.73-acre study area was surveyed on October 25, November 1 and 8, 2018 and August 22, 2019 (SHN 2020). Methods followed wetland delineation methods described in U.S. Army Corp of Engineers Wetlands Delineation Manual. 0.30 acres of 3-parameter wetland and 0.88 acres of 1-2 parameter wetland were identified on the property. Aquatic resources delineation conducted on December 5, 2025 (Naiad 2025) was recently conducted in the area not included in previous wetland delineation surveys. None of the test pits exhibited hydric soils, wetland hydrology, or a dominance of hydrophytic vegetation.

VIII. Results

No birds, mammals, reptiles, fishes or invertebrates considered sensitive, rare, threatened, or endangered, candidate species have the potential to be significantly affected by the project as planned. There is potential for a sensitive species of amphibian to be present on the property and for nesting birds to be present during nesting season (February 15 – August 15). It is recommended that pre-construction surveys for sensitive amphibians be conducted prior to vegetation removal or ground disturbing activities. Additionally, if construction activities or vegetation clearing is to occur during nesting season, surveys for nesting birds should be conducted by a qualified biologist no more than fourteen (14) days before construction commences. If sensitive species are found on the property CDFW should be consulted to determine any necessary mitigations measures.

No plants considered sensitive, rare, threatened, or endangered were detected during seasonally appropriate surveys within the subject parcels. The sensitive vegetation community of pacific silverweed marsh should be protected from construction activities. Prior to construction or ground disturbing activities, temporary fencing should be installed beyond the perimeter of the pacific silverweed marsh to avoid unintentional impacts. The pacific silverweed marsh should have permanent wildlife friendly fencing installed to serve as a long-term demarcation or transition from residential use and this sensitive vegetation community.

The project, as planned and mitigated, will avoid significant impacts to existing biological resources.

SITE PHOTOS



Southeast corner viewing northerly. *(photo date 09/19/2025)*



Southeast corner viewing westerly. *(photo date 09/19/2025)*



Central portion viewing northeast corner. *(photo date 09/19/2025)*



Central portion viewing northwesterly corner. *(photo date 09/19/2025)*

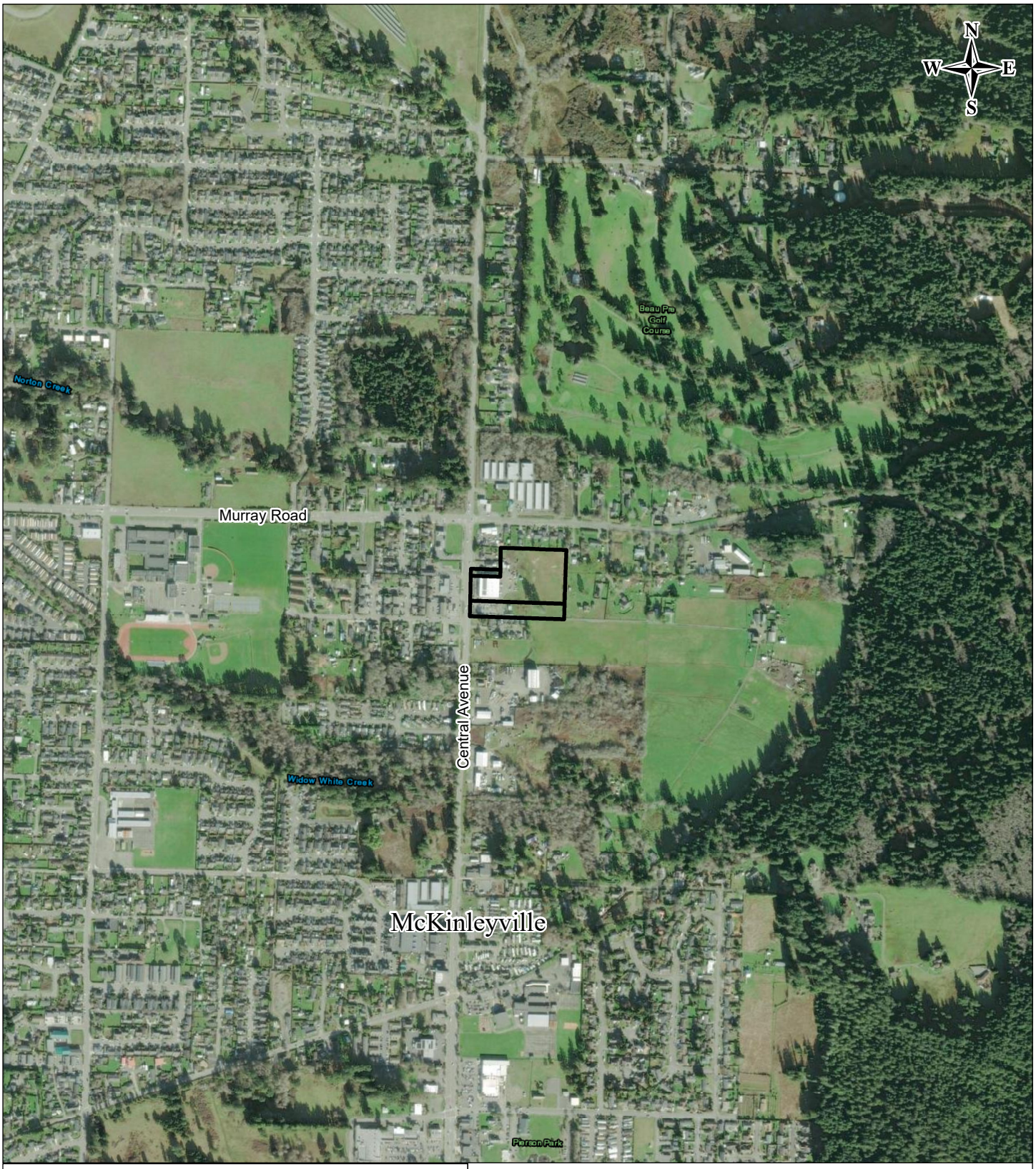


Silverweed wetland viewing southeasterly corner. *(photo date 09/19/2025)*



Silverweed wetland viewing northwesterly into back parking lot, Ace Hardware. *(photo date 09/19/2025)*

MAPS & CNDDB SUMMARY TABLE



Black Dog Residential Development
General Location Map
APNs: 510-081-001, 510-081-002, 510-081-003

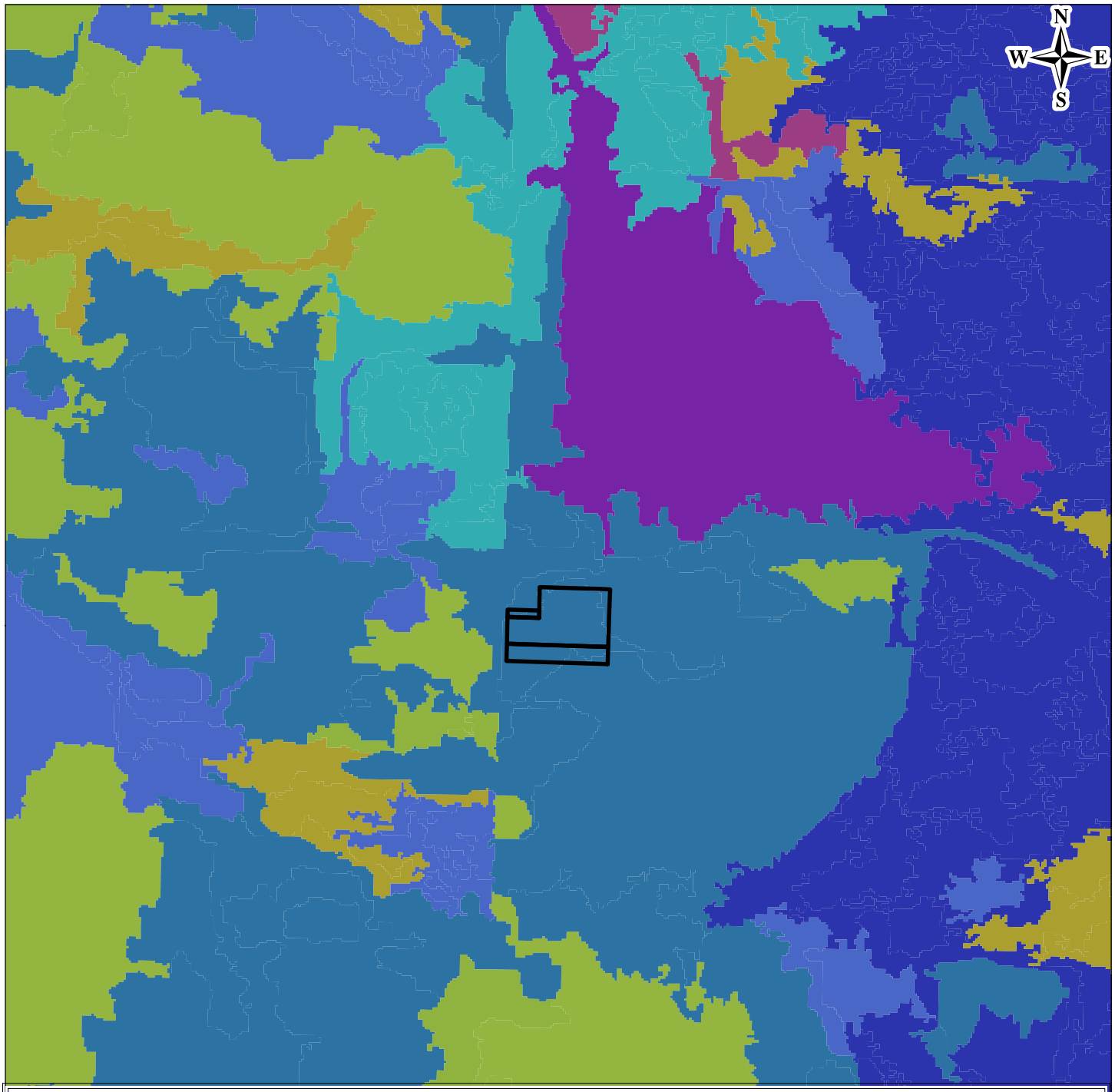
Section 32; T7N; R1E; HB&M; Humboldt County
Located on the Arcata North 7.5' USGS Quadrangle

Subject Parcels

0 500 1,000 2,000 Feet

Contour Interval: 40'
1 inch = 1,000 feet

Hohman And Associates Forestry Consultants
Date: 11/24/2025



Annual Grasses and Forbs
Coyote Brush
Non-Native/Ornamental Grass
North Coast Mixed Shrub
Red Alder
Sitka Spruce
Sitka Spruce - Redwood
Urban-related Bare Soil
Urban/Developed (General)

Black Dog Residential Development
CalVeg Cover Type
APNs: 510-081-001, 510-081-002, 510-081-003

Section 32; T7N; R1E; HB&M; Humboldt County
Located on the Arcata North 7.5' USGS Quadrangle

Subject Parcels

0 500 1,000 2,000 Feet

1 inch = 1,000 feet

Contour Interval: 40'

Hohman And Associates Forestry Consultants

Date: 11/24/2025



Black Dog Residential Development
CNDDB Map
APNs: 510-081-001, 510-081-002, 510-081-003

Section 32; T7N; R1E; HB&M; Humboldt County
Located on the Arcata North 7.5' USGS Quadrangle

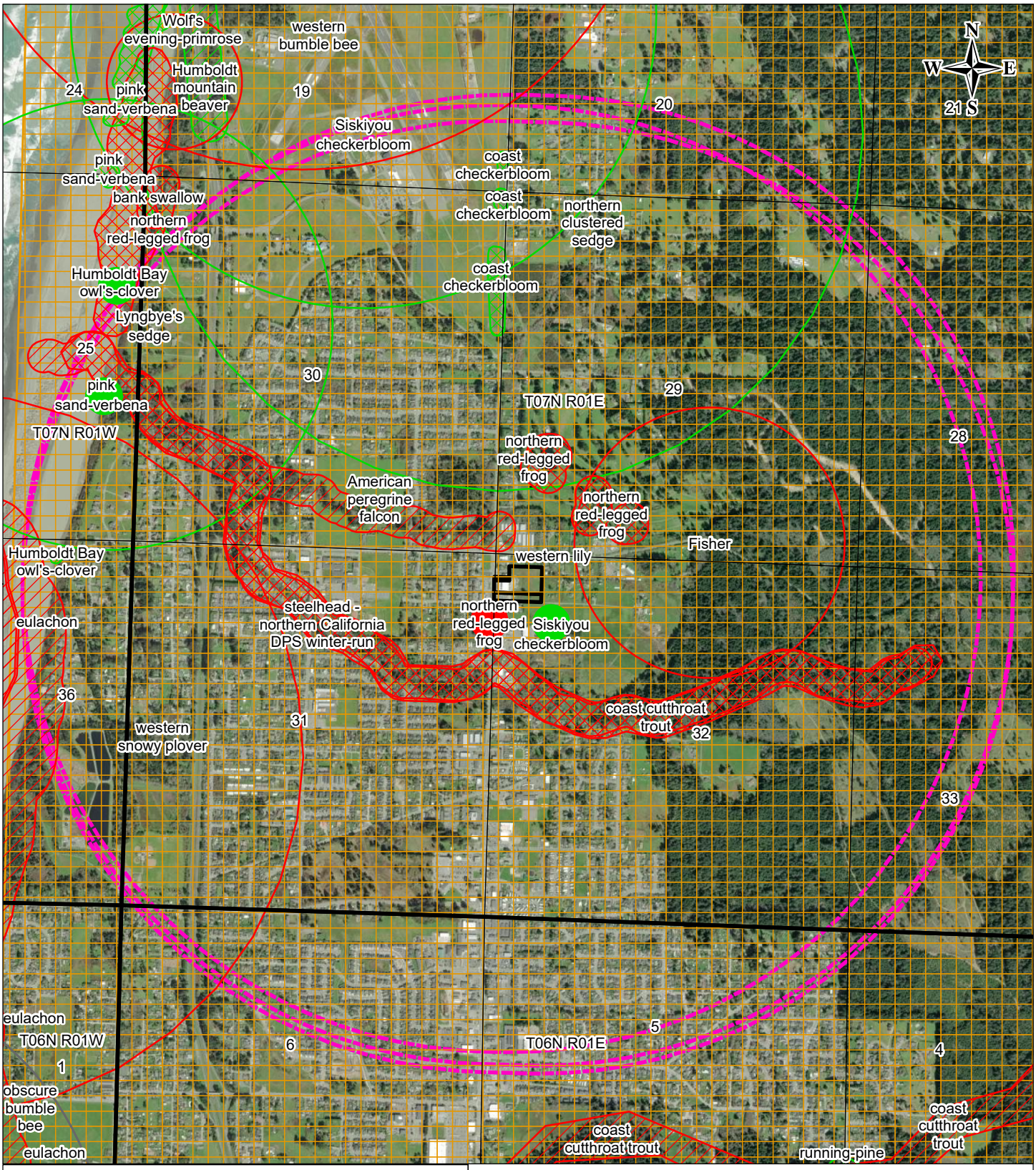
Subject Parcels

1.3MileAssessmentArea

0 1,000 2,000 4,000 Feet

Contour Interval: 40'
1 inch = 2,000 feet

Hohman And Associates Forestry Consultants
Date: 11/24/2025



Black Dog Residential Development
CNDDB Map
APNs: 510-081-001, 510-081-002, 510-081-003

Section 32; T7N; R1E; HB&M; Humboldt County
Located on the Arcata North 7.5' USGS Quadrangle

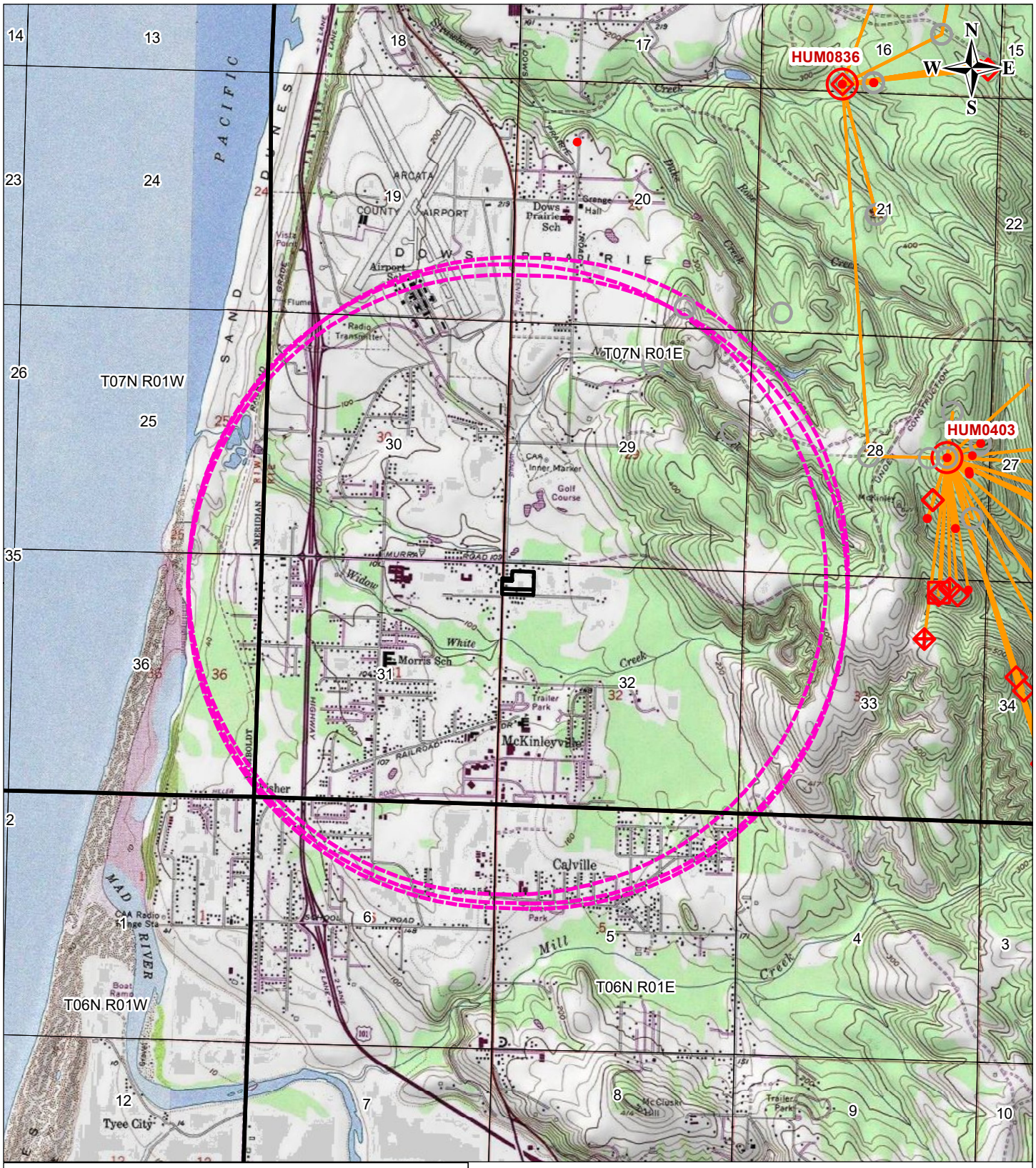
Subject Parcels

1.3MileAssessmentArea

0 1,000 2,000 4,000 Feet

Contour Interval: 40'
1 inch = 2,000 feet

Hohman And Associates Forestry Consultants
Date: 11/24/2025



Black Dog Residential Development
CDFW NSO Database
APNs: 510-081-001, 510-081-002, 510-081-003

Section 32; T7N; R1E; HB&M; Humboldt County
Located on the Arcata North 7.5' USGS Quadrangle

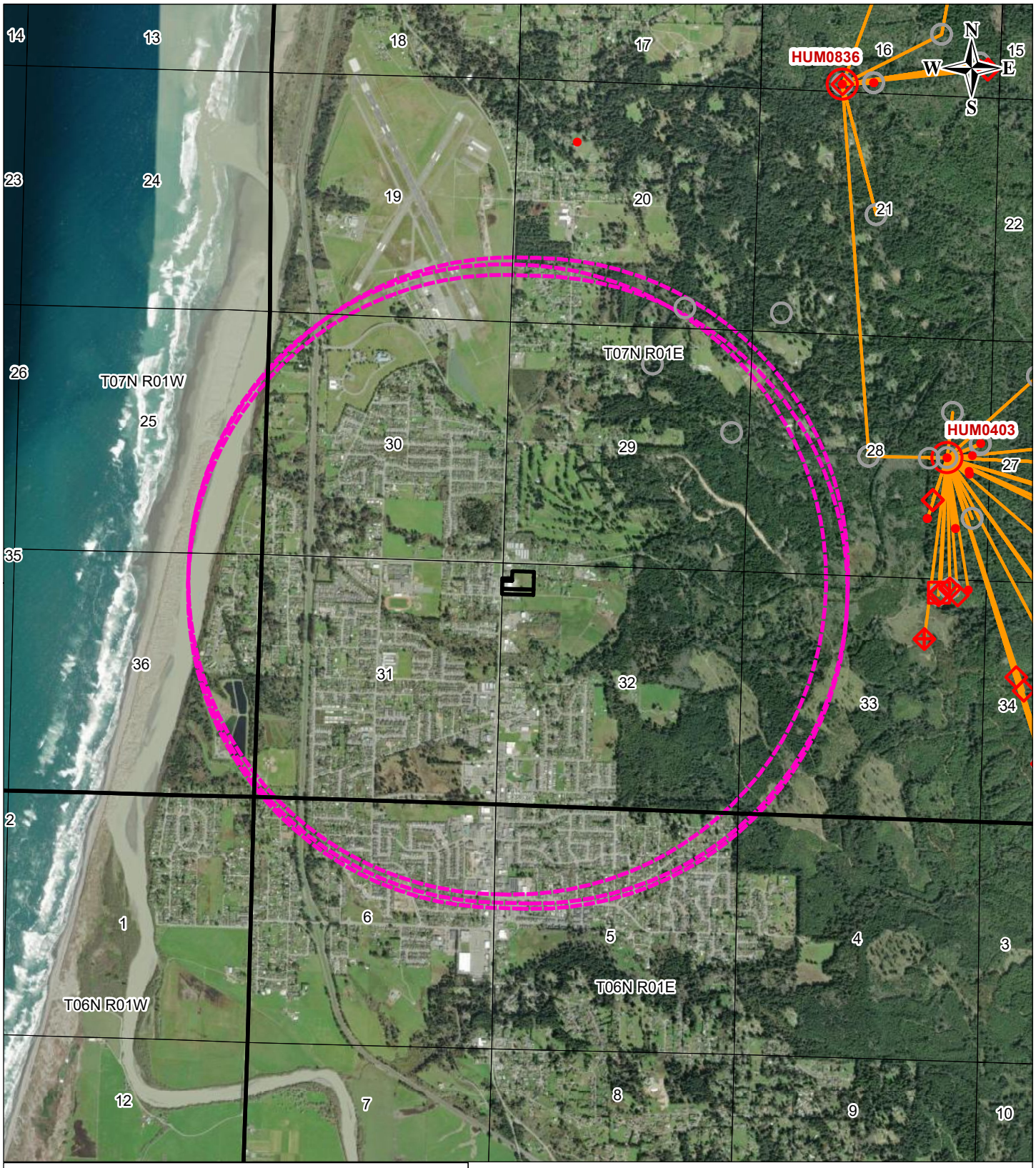
Subject Parcels

1.3MileAssessmentArea

0 1,550 3,100 6,200 Feet

Contour Interval: 40'
1 inch = 3,000 feet

Hohman And Associates Forestry Consultants
Date: 11/24/2025



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Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Arcata North (4012481))

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Abronia umbellata var. breviflora pink sand-verbena	G4G5T2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	10 40	61 S:3	0	2	1	0	0	0	1	2	3	0	0
Actinemys marmorata northwestern pond turtle	G2 SNR	Proposed Threatened None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable USFS_S-Sensitive	24 400	1160 S:3	1	1	0	0	0	1	2	1	3	0	0
Anarhynchus nivosus nivosus western snowy plover	G3T3 S3	Threatened None	CDFW_SSC-Species of Special Concern	10 10	140 S:1	0	0	0	0	0	1	1	0	1	0	0
Aplodontia rufa humboldtiana Humboldt mountain beaver	G5TNR SNR	None None		50 350	28 S:7	0	0	0	0	0	7	6	1	7	0	0
Arborimus pomo Sonoma tree vole	G3 S3	None None	CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened	400 400	222 S:1	0	0	0	0	0	1	1	0	1	0	0
Ardea herodias great blue heron	G5 S4	None None	CDF_S-Sensitive IUCN_LC-Least Concern	80 450	156 S:4	3	0	0	0	0	1	4	0	4	0	0
Ascaphus truei Pacific tailed frog	G4 S3S4	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	135 135	491 S:1	0	0	0	0	0	1	0	1	1	0	0
Bombus caliginosus obscure bumble bee	G2G3 S1S2	None None	IUCN_VU-Vulnerable	10 100	181 S:3	0	0	0	0	0	3	3	0	3	0	0
Bombus crotchii Crotch's bumble bee	G2 S2	None Candidate Endangered	IUCN_EN-Endangered	10 10	880 S:1	0	0	0	0	0	1	1	0	1	0	0
Bombus occidentalis western bumble bee	G3 S1	None Candidate Endangered	IUCN_VU-Vulnerable USFS_S-Sensitive	10 100	306 S:3	0	0	0	0	0	3	3	0	3	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Carex arcta northern clustered sedge	G5 S1	None None	Rare Plant Rank - 2B.2 IUCN_LC-Least Concern	200 200	13 S:1	0	0	0	0	0	1	1	0	1	0	0
Carex lyngbyei Lyngbye's sedge	G5 S3	None None	Rare Plant Rank - 2B.2 IUCN_LC-Least Concern		37 S:1	0	0	0	0	0	1	1	0	1	0	0
Castilleja ambigua var. humboldtiensis Humboldt Bay owl's-clover	G5T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_UCBG-UC Botanical Garden at Berkeley	22 65	31 S:2	0	2	0	0	0	0	1	1	2	0	0
Elanus leucurus white-tailed kite	G5 S3S4	None None	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern	23 23	190 S:1	0	1	0	0	0	0	0	1	1	0	0
Entosphenus tridentatus Pacific lamprey	G4 S3	None None	AFS_VU-Vulnerable BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive	43 43	9 S:1	0	0	0	0	0	1	1	0	1	0	0
Erethizon dorsatum North American porcupine	G5 S3	None None	IUCN_LC-Least Concern	53 53	523 S:1	0	0	0	0	0	1	1	0	1	0	0
Falco peregrinus anatum American peregrine falcon	G4T4 S3S4	Delisted Delisted	CDF_S-Sensitive	902 902	77 S:1	0	0	0	0	0	1	1	0	1	0	0
Fissidens pauperculus minute pocket moss	G3? S2	None None	Rare Plant Rank - 1B.2 USFS_S-Sensitive	650 650	22 S:2	0	0	0	0	0	2	2	0	2	0	0
Lampetra richardsoni western brook lamprey	G4G5 S3S4	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive	236 236	4 S:1	0	0	0	0	0	1	1	0	1	0	0
Lathyrus japonicus seaside pea	G5 S2	None None	Rare Plant Rank - 2B.1 IUCN_LC-Least Concern	5 5	24 S:1	0	0	0	0	0	1	1	0	1	0	0
Lilium occidentale western lily	G1G2 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_BerrySB-Berry Seed Bank	60 60	16 S:1	0	0	1	0	0	0	0	1	1	0	0

Summary Table Report

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Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Lycopodium clavatum running-pine	G5 S3	None None	Rare Plant Rank - 4.1	160 1,500	120 S:14	0	3	4	1	0	6	14	0	14	0	0
Margaritifera falcata western pearlshell	G3G4 S1S2	None None	IUCN_NT-Near Threatened	317 317	78 S:1	0	0	0	0	0	1	1	0	1	0	0
Montia howellii Howell's montia	G3G4 S2	None None	Rare Plant Rank - 2B.2	39 90	123 S:2	0	1	1	0	0	0	0	2	2	0	0
Myotis evotis long-eared myotis	G5 S3	None None	BLM_S-Sensitive IUCN_LC-Least Concern	429 429	139 S:1	0	0	0	0	0	1	1	0	1	0	0
Oenothera wolfii Wolf's evening-primrose	G2 S1	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_BerrySB-Berry Seed Bank	25 25	29 S:1	0	0	0	0	0	1	1	0	1	0	0
Oncorhynchus clarkii coast cutthroat trout	G4 S3	None None	AFS_VU-Vulnerable CDFW_SSC-Species of Special Concern USFS_S-Sensitive	20 317	45 S:7	0	0	0	0	0	7	7	0	7	0	0
Oncorhynchus kisutch pop. 2 coho salmon - southern Oregon / northern California ESU	G5T2Q S2	Threatened Threatened	AFS_TH-Threatened	40 42	10 S:2	0	0	1	0	0	1	1	1	2	0	0
Oncorhynchus mykiss irideus pop. 48 steelhead - northern California DPS summer-run	G5T2Q S2	Threatened Endangered	AFS_TH-Threatened	700 700	10 S:1	0	0	1	0	0	0	0	1	1	0	0
Oncorhynchus mykiss irideus pop. 49 steelhead - northern California DPS winter-run	G5T3Q S3	Threatened None	AFS_TH-Threatened CDFW_SSC-Species of Special Concern	78 279	96 S:4	0	0	2	0	0	2	2	2	4	0	0
Pandion haliaetus osprey	G5 S4	None None	CDF_S-Sensitive CDFW_WL-Watch List IUCN_LC-Least Concern	250 600	504 S:7	0	2	1	0	0	4	7	0	7	0	0
Pekania pennanti Fisher	G5 S2S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive	41 319	555 S:4	0	2	0	0	0	2	0	4	4	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Rana aurora northern red-legged frog	G4 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive	5 400	292 S:12	0	0	0	0	0	12	3	9	12	0	0
Rana boylii pop. 1 foothill yellow-legged frog - north coast DPS	G3T4 S4	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern USFS_S-Sensitive	20 400	1610 S:4	2	0	0	0	0	2	1	3	4	0	0
Rhyacotriton variegatus southern torrent salamander	G3? S2S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive	400 400	416 S:1	0	0	0	0	0	1	0	1	1	0	0
Riparia riparia bank swallow	G5 S3	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern	60 114	299 S:2	0	1	0	0	0	1	1	1	2	0	0
Scaphinotus behrensi Behrens' snail-eating beetle	G2G4 S2S4	None None		400 400	4 S:1	0	0	0	0	0	1	1	0	1	0	0
Sidalcea malachroides maple-leaved checkerbloom	G3 S3	None None	Rare Plant Rank - 4.2	100 100	136 S:1	0	0	0	0	0	1	1	0	1	0	0
Sidalcea malviflora ssp. patula Siskiyou checkerbloom	G4G5T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_UCSC-UC Santa Cruz	114 200	60 S:3	0	0	2	0	0	1	2	1	3	0	0
Sidalcea oregana ssp. eximia coast checkerbloom	G5T1 S1	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	200 200	19 S:1	0	0	1	0	0	0	1	0	1	0	0
Thaleichthys pacificus eulachon	G4 S1	Threatened None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern		10 S:2	0	0	0	0	1	1	2	0	1	1	0
Trichodon cylindricus cylindrical trichodon	G4G5 S2	None None	Rare Plant Rank - 2B.2		14 S:1	0	0	0	0	0	1	1	0	1	0	0

Hohman & Associates
FORESTRY CONSULTANTS
P.O. Box 733, Hydesville, CA 95547 . (707) 768-3743 . (707) 768-3747 fax

Wetland Mitigation and Monitoring Plan for:

General Plan Amendment, Zone Reclassification,

Lot Line Adjustment and Special Permit

APN: 510-081-001, 510-081-002, 510-081-003

Humboldt County

Prepared For:

Black Dog Partnership

Prepared By:

Hohman and Associates

1.0 Background and Methods

This Mitigation and Monitoring Plan has been prepared to address the compensatory mitigation as part of the Black Dog Partnership Improvements, Commercial Rezone, and Wetland Mitigation Project (Application No. 17029). Black Dog Partnership (Applicant) is proposing modifications to the existing McKinleyville Ace Hardware retail store to allow for retail infrastructure to be moved and to provide additional parking for employees on properties identified as Assessor's Parcel Numbers (APNs) 510-081-001, -002, and -003 located at 2707 and 2725 Central Avenue in McKinleyville. A General Plan Amendment, Zone Reclassification, and Lot Line Adjustment is also proposed for the two properties to adjust the boundaries of the properties' current land use and zoning designations and lot lines for consistency with the existing commercial development and proposed improvements on the subject properties. Also included is a Special Permit for relocation of an existing bioswale and associated fill and wetland restoration on APNs: 510-081-001 and 510-081-002. Collectively, the three parcels (APNs: 510-081-001, 510-081-002, and 510-081-003) represent the subject Site. Per the Applicant, the primary purpose of the project is to increase the functional commercial use of the Site with the opportunity for the residential portion to be developed as a secondary benefit at a future time.

The existing McKinleyville Ace Hardware retail store was constructed on the subject Site between the fall of 2014 and spring of 2015. During this time, approximately 1,000 square feet of gravel was pushed into the westernmost edge of a wetland located around the existing on-site barn1. The postconstruction runoff requirements were not met to the satisfaction of the North Coast Regional Water Quality Control Board (SWRCB).

Site restoration work was performed during February 2016, and included removal of fill materials within the wetland near the barn to the southeast of the existing retail store, and construction of an approximately 1,000-square-foot bioswale between the wetland and the retail store and parking area. The bioswale was designed to accommodate roof runoff from the southeast downspout from the store. A new drain line was installed, which runs underneath the gravel driveway and directly into the bioswale. The purpose of the bioswale was to retain and infiltrate stormwater before reaching the wetland area (Streamline, 2016). In April 2016, an after-the-fact Emergency Special Permit (SP-16 040E) was granted by the County under Humboldt County Code section 312-5 for the improvements.

The projected impact area is approximately 1.18 acres of 1, 2, and 3 parameter wetlands contained within open mown grassland adjacent to the commercial retail space. These wetlands were delineated prior to construction of the Ace Hardware retail space (Streamline 2014) and again after the restoration work performed in 2016 (SHN 2020).

Considering a range of impacts to the wetland, determinations were made according to the impact criteria specified below:

(1) Location and type of pre-impact wetlands.

(2) Temporal and permanent impacts to existing wetlands.
(3) Quantitative impact including acreage and total area.
(4) Potential compensatory mitigation offsets for adverse impacts and restoration strategies to adhere to the State's No Net Loss of wetlands Policy and the McKinleyville Community Plan's (MCCP) guidelines on wetland compensation.

2.0 Site Description and History

The site consists of native loam topsoil over sandy clay loam subsoils, on the coastal plain that makes up the community of McKinleyville. The grassland predominantly supports non-native grass and forb species, including perennial rye grass (*Festuca perennis*), sweet vanilla grass (*Anthoxanthum odoratum*), sheep sorrel (*Rumex acetosella*), hawkbit *(Leontodon saxatilis*), and wild radish (*Raphanus sativus*). Within the grassland area, there are localized depressions predominantly supporting pennyroyal (*Mentha pulegium*) and California golden eyed grass (*Sisyrinchium californicum*). The disturbed section of the graveled terrace adjacent to development supports perennial wild rye, toad rush (J*uncus bufonius*) and sweet vanilla grass. Vegetation management has disturbed this area. The palustrine emergent wetland predominantly supports creeping buttercup (*Ranunculus repens*), creeping bentgrass (*Agrostis stolonifera*), and silverweed (*Potentilla anserina ssp. pacificus*).

One soil unit has been mapped in the survey area (Natural Resources Conservation Service 2025). This soil map unit includes major components of Arcata (50%) and Candymountain Soils (35%) with minor components of Residential Urban Land (4%), Timmons (3%), Halbluff (3%), Megwil (3%), and Talawa (2%). Both major inclusions and all minor inclusions, except for Talawa soils, are not considered hydric soils.

Table 1. Soil Map Unit in the Project Area

Soil Map Unit	Name	Dominant Soil Texture	Landform	Depth to Restrictive Layer	Drainage Class	Hydric Soil?
225	Arcata and Candymountain (0-2% slopes)	Fine Sandy Loam	Marine Terraces	> 80 inches	Well Drained	No

Climate exerts an influence on soil, hydrology, and vegetation at regional, local, and micro scales. Regionally, cool, wet winters and nearly rainless summers characterize the climate of Humboldt County, California. Precipitation in the region follows a very strong seasonal pattern of a wet season (October to May) and a dry season (June to September).

The National Weather Service Cooperative Network weather station closest to the survey area is Eureka WFO Woodley Island (CA 042910) that has been active since 1886. The mean annual precipitation is approximately 39 inches of rain and up to 67 inches in any given year, average air temperature is 50-56 degrees Fahrenheit (Western Regional Climate Center 2025).

3.0 Onsite Activities

Prior to any development activities, wetlands on the subject property were delineated by Streamline Planning Consultants. Delineation occurred primarily in December 2013 with a follow up assessment in June 2014. During this time a 3-parameter wetland was located adjacent to the barn in the south west portion of the property. Additional site visits were conducted in September and October of 2014 to assess the eastern portions of the property. During these visits no additional wetlands were found on the property (Streamline, 2014).

The existing McKinleyville Ace Hardware was constructed on the subject site between fall 2014 and spring 2015. During this time, approximately 1,000 square feet of gravel was pushed into the westernmost edge of a wetland located around the existing on-site barn.

In November of 2015, three additional test pits were dug to check for the presence of wetlands in the north east portion of the property. No wetland parameters were found during the assessment and it was determined that the north eastern portion of the property is suitable for residential development (Streamline, 2015).

After construction of the retail space, it was found that postconstruction runoff requirements were not met to the satisfaction of the North Coast Regional Water Quality Control Board (SWRCB). Although two bioswales were installed on the western side of the property along Central Avenue per County Department of Public Works' direction, no post-construction runoff measures were installed to retain runoff in the eastern watershed. An on-site meeting with the NCRWQCB, California Department of Fish and Wildlife (CDFW) staff, the landowner, and several interested parties occurred in January 2016 to discuss and remediate these issues (Streamline, 2016).

Site restoration work was performed during February 2016, and included removal of fill materials within the wetland near the barn to the southeast of the existing retail store, and construction of an approximately 1,000-square-foot bioswale between the wetland and the retail store and parking area. The bioswale was designed to accommodate roof runoff from the southeast downspout from the store. A new drain line was installed, which runs underneath the gravel driveway and directly into the bioswale. The purpose of the bioswale was to retain and infiltrate stormwater before reaching the wetland area (Streamline, 2016). In April 2016, an after-the-fact Emergency Special Permit (SP-16 040E) was granted by the County.

During spring of 2019 an approximate three-acre section of the western portion of the property was assessed to determine the present biological resources. This study found that no special status species or critical habitat are present on the property. There is a sensitive vegetation community most similar to Pacific silverweed marsh that occupies the previously delineated 3-parameter wetland. Additionally, while no nesting birds were found during the study it is recommended if development activity is to occur during the nesting bird season that nesting bird surveys should be conducted prior to the start of work (SHN, 2019).

A larger wetland delineation was carried out directly east of the McKinleyville Ace Hardware between fall 2018 and summer 2019. 26 test pits were excavated over four separate site visits. It was determined from these test pits that there are 1, 2, and 3 parameter wetlands present on the property. The 1 to 2 parameter wetlands occupy an area of approximately 0.88 acres. A 3-parameter wetland approximately 0.3 acres in size is encompassed by the 1 to 2 parameter wetlands. The location of the 3-paramter wetland aligns with the 3-parameter wetland previously identified in 2014. In total 1.18 acres of 1 to 3 parameter wetlands were identified in the course of this study (SHN, 2020).

4.0 Objectives of the Mitigation and Monitoring Plan

The proposed development activities will result in excavation and discharging earthen fill into and the placement of earthen fill and other construction materials, and removal of native soil and vegetation of 1 to 3 parameter wetlands.

The objective of this plan is to provide an assessment of the impacts on wetlands on the property both before and after the proposed development activities, propose mitigation measures for impacts and incorporate best management practices (BMP) to be applied to all work associated with construction activities on the Property. The Wetland Mitigation and Monitoring Plan will provide the measures necessary to restore and protect water quality in accordance with TMCCP and State No Net Wetland Loss policy.

5.0 Impacted Feature Details

Referencing the proposed development plans and previous wetland delineations, impacts are will affect both the 1 to 2 and 3 parameter wetlands identified on the property. The *Wetland Delineation* dated May 2020 prepared by SHN, SHN 2020, will be considered the most up to date and best representation of on the ground features and referenced as such. Refer to Figure 2 from this report which describes the features.

Table 2 Wetland Delineation Results (SHN, 2020)

	Description	Test Pits	Cowardin Type	Centerpoint Latitude/Longitude	Approximate Area (acres)
3-Parameter Area	3-Parameter Area	3-9, 5-8, 5-9, 6-2b	PEM1C[1]	40.954483°/-124.099573°	0.30
1-2 Parameter Area	1 or 2 Parameters Present	1-5, 1-6, 2-7, 2-9, 3-8, 4-7, 4-8, 4-8B, 5-3, 5-7, 5-10, 6-1, 6-2A	NA	40.955061°/-124.099703°	0.88
Upland	Zero Parameters Present	1-1, 1-2, 1-3, 1-4, 1-7, 3-1, 3-4, 3-7, 5-1	NA	40.955130°/-124.099236°	1.55

1. PEM1C: Palustrine Emergent Persistent Seasonally Flooded

1 to 2 parameter wetlands:

Directly east of the current retail space is gently sloping wetland slightly higher in elevation than the 3-parameter wetland contained within its perimeter. The observed wetland parameters are the presence of hydrophytic vegetation and hydric soils. 1 to 2 parameter wetlands are primarily dominated by toad rush (*Juncus bufonia*), crimson clover (*Trifolium incarnatum*), creeping buttercup (*Ranunculus repens*), and velvet grass (*Holcus lanatus*). It has been noted by SHN in their 2020 delineation that these parameters are likely relics from previous ground disturbance, land uses, and the now removed swale that conducted water from north to south towards Martin Road. In total this wetland occupies an area of approximately 0.88 acres. Despite the wetlands creation resulting from surrounding development and past uses they are protected under the MCCP guidelines on wetlands and must be compensated for at a minimum 1:1 ratio if disturbed during development activities.

3 Parameter Wetland:

Adjacent to the eastern side of the barn exists an irregularly shaped geomorphic depression approximately 0.3 acres in area which exhibits all three wetland indicators. Dominant vegetation consists of silverweed (*Potentilla anserina ssp. pacifica*) and birdsfoot trefoil (*Lotus corniculatus*). The 3-parameter wetland is wholly within the boundaries of the delineated 1 to 2 parameter wetland. Both wetland delineations that examined the 3-parameter wetland agree that the depression was likely formed through agricultural machinery or livestock wallowing

(Streamline, 2014; SHN, 2020). This wetland is categorized as a Palustrine Emergent Persistent Seasonally Flooded wetland. While the wetland lacks a continuous surface connection to any Waters of the United States and therefore is not under jurisdiction of the United Stated Army Corp of Engineers (USACE), it is protected under state and local regulations. Any permanently disturbed portions of the wetland must be mitigated at a minimum 1:1 in kind mitigation ratio.

5.1 Proposed Impacts

Referencing the proposed development plans, a range of temporary and permanent impacts will affect the 1 to 2 parameter wetlands (Table 3) and 3 parameter wetlands (Table 4). Impacts will occur through the expansion and reconstruction of the retail parking area and the creation of a bioswale, vegetated buffer, and stormwater detention pond. Vegetation removal will be temporary in nature as graded areas will be replanted with wetland vegetation that is appropriate for the areas hydrology. In addition to the proposed development, previous unpermitted expansion of the parking area filled approximately 0.36 acres of 1 to 2 parameter wetland. The area of previous impacts has not been mitigated for and will be mitigated for accordingly in this plan.

Table 3 Impacts to 1 to 2 parameter wetlands.

Development Action	Impact Size - 1 to 2 parameter (acres)	Impact Type
Unpermitted Development	0.36	permanent - fill
Expanded parking area	0.61	permanent - fill
Bioswale	0.05	Permanent - conversion to 3 parameter
Vegetated buffer	0.08	Temporary - Removal of vegetation from grading
Retention pond	0.03	Permanent - conversion to 3 parameter
Positive grading	0.11	Temporary – Removal of vegetation from grading
Total (Permanent)	**1.05**	
Total (Temporary)	**0.19**	

Table 4 Impacts to 3 parameter wetland.

Development Action	Impact Size - 3 parameter (acres)	Impact Type
Unpermitted Development	0	None
Expanded parking area	0	None
Bioswale	0.13	Temporary-vegetation removal from grading
Vegetated buffer	0.09	Permanent - Conversion to 1 to 2 parameter
Retention pond	< 0.01	Temporary-vegetation removal from grading
Positive grading	0.08	Permanent - Conversion to 1 to 2 parameter
Total (Permanent)	**0.17**	
Total (Temporary)	**0.13**	

Unpermitted Development

During and following construction activities fill material was deposited in the 1 to 2 parameter wetlands. The fill was placed to create and expand the parking and storage area east of the retail space and resulted in approximately 0.36 acres of direct impacts to 1 to 2 parameter wetlands. Review of satellite imagery from 2014 – 2020 shows the expansion occurred between 2014 and 2019. To account for this 0.36 acres is being added to the existing 1 to 2 parameter wetlands for a total of 1.24 acres.

Expanded parking & storage area

As per the development plan, the parking area will be reconfigured and expanded on the eastern side of the retail space (LACO Conceptual Site Layout). Approximately 0.8 acres of new fill are proposed in the development plans. Of the 0.8 acres proposed for fill, approximately 0.61 acres of fill will be placed into 1 to 2 parameter wetlands. With the 0.36 acres of unpermitted parking area already developed this brings the total of filled 1 to 2 parameter wetlands to 0.97 acres for mitigation purposes. Impacts of fill to 1 to 2 parameter wetlands will be permanent. No direct placement of fill material into 3 parameter wetlands will occur as part of the expansion of the parking and storage area.

Bioswale

A bioswale approximately 0.4 acres in area is planned directly east of the expanded parking & storage area. The purpose of the bioswale is to capture surface flows and convey water south into the proposed detention pond. The majority of the bioswale will be constructed outside of the existing wetlands. An approximately 0.05 acre area of 1 to 2 parameter wetlands will be converted to 3 parameter wetland over time. The conversion will result from increased water conveyance and retention that will occur during and after rain events. Upland vegetation not adapted for extended periods of inundation will be replaced by wetland vegetation that is adapted to growing in periodic standing water. 3-parameter wetlands that will be incorporated into the bioswale will not be negatively impacted by the creation of the bioswale. An area of 0.13 acres 3 parameter wetland will be temporarily impacted by vegetation removal, following grading activities this area will be replanted with appropriate wetland vegetation,

Vegetated buffer

A vegetated buffer is planned around the entirety of the bioswale to filter sediment, slow stormwater flows, and stabilize soil around the bioswale. The buffer will impact both 1 to 2 parameter wetland and 3-parameter wetland. In 1 to 2 parameter wetlands the impact will temporarily affect 0.08 acres and will result from grading and removing vegetation and replanting with hydrophytic species. The 3-parameter wetland will be permanently impacted in an area of 0.09 acres. Impacts will occur from regrading to provide positive drainage towards the bioswale and detention pond. The area of 3-parameter wetland impacted will be converted to 1 to 2 parameter wetland after the hydrology has been altered to focus inundation in the bioswale and detention pond.

Retention pond

A 0.13 acre stormwater detention pond is planned to be constructed south east of the bioswale. The retention pond is designed to capture stormwater and slowly release it over time. The retention pond design is such that the post-development 100-year storm peak runoff will not exceed pre-development 2-year storm peak runoff (SHN, 2018). During construction a portion of 1 to 2 parameter and 3-parameter wetlands will be impacted. During construction, an area of approximately 0.03 acres of 1 to 2 parameter wetland will be cut to a lower elevation. This portion of 1 to 2 parameter wetland will be converted to 3-parameter wetland over time. A small portion of 3-parameter wetland less than 0.01 acres in area will be temporarily impacted through removal of vegetation. This area will be replanted with appropriate wetland vegetation as part of mitigation actions.

Positive grading

Areas adjacent to the vegetated buffer will be graded to provide positive drainage towards the bioswale and retention pond. On the southern end of the bioswale this positive grading will impact both 1 to 2 parameter and 3-parameter wetlands. Approximately 0.11 acres of 1 to 2 parameter wetlands will be temporarily impacted by grading activities, with replanting of appropriate wetland vegetation occurring after the work is completed. Permanent impacts will occur to approximately 0.08 acres of 3-parameter wetland. Impacted 3-parameter wetland will be converted to either 1 or 2 parameter wetland through development activities.

6.0 Compensatory Mitigation Plan

This section describes how impacts to 1 to 3 parameter wetlands will be mitigated through enhancement and creation of new wetlands. Through reconfiguration, creation, and ecological uplift there will be more area of wetlands on the property with a greater amount of 1 to 3 parameter wetland than was present prior to development activities (Table 5).

Table 5 Wetland mitigation area in acres. Plus sign (+) indicates area added to total while minus sign (−) indicates area subtracted from total.

	3-Parameter (acres)	1 to 2 Parameters (acres)	Total (acres)
Pre-development (+)	0.30	1.24	1.54
Filled (−)	0	0.97	0.97
Converted from (−)	0.17	0.08	0.25
Converted to (+)	0.08	0.17	0.25
Mitigation (+)	0.17	0.93	1.1
Total after mitigation	**0.38**	**1.29**	**1.67**

6.1 Impact Calculations

Impacts in acres of 1 to 3 parameter wetlands were identified in Section 5 (Table 3 and 4). Impacts were characterized according to the type of wetland affected and the permanence of loss of ecological function. A combination of onsite restoration, enhancement, and preservation will be used to achieve the goals of compensatory mitigation to ensure no-net loss from past impacts.

Bioswale

Creation of the proposed bioswale will result in a total of 0.15 acres of 1 to 2 parameter wetland and 0.25 acres of 3-parameter wetland. All wetland area of 1 to 2 parameters will be added without any impacts to currently present wetlands. Of the 0.25 acres of 3-parameter wetland, 0.07 acres will be new created wetland, 0.13 acres are currently present 3-parameter that will be temporarily impacted by grading activities, and 0.05 acres will be converted from existing 1 to 2 parameter wetland. The bioswale section of 1 to 2 parameters will be graded to slope gently from north to south to convey stormwater across the property towards the retention pond. The section of 3-parameter wetland will be graded into a shallow depression that will hold storm water and slow water velocities prior to entering the retention pond.

Vegetated Buffer

A variable width vegetated buffer is proposed around the bioswale. The originally planned 15-foot buffer was deemed insufficient for mitigation purposes. Creation of the variable width buffer will result in a total of 0.95 acres of 1 to 2 Parameter wetland. Of the 0.95 acres of 1 to 2 Parameter wetland, 0.78 acres will be newly created wetland, 0.09 acres will be converted from currently existing 3-Parameter wetland, and 0.08 acres is existing 1 to 2 parameter wetland. The entirety of the buffer will be graded to provide positive drainage towards the bioswale.

Positive Grading

A broad and gently sloping area is planned between the eastern side of the expanded parking area and the western edge of the vegetated buffer. This area will be graded to provide positive drainage to the bioswale and retention pond through the vegetated buffer. This area will result in a total of 0.19 acres of 1 parameter wetland. Of the 0.19 acres, 0.11 acres is existing 1 to 2 parameter wetland and the remaining 0.08 acres will be converted from existing 3-Parameter wetland**.**

Retention Pond

Creation of the 0.13 acre Retention Pond will be achieved through the conversion of 0.03 acres of existing 1 to 2 parameter wetlands and the creation of 0.1 acres of 3 parameter wetlands. The Retention pond will be planted with wetland vegetation while the parameters of hydrology and wetland soils will develop over time as water is conveyed into and contained within the pond.

6.2 Compensatory Mitigation Locations

To compensate the permanent loss of wetlands the following treatments are proposed for each of the four main work areas (Table 6).

Table 6 Mitigation treatments by feature.

Feature	Area (acres) 1-2 Parameter	Area (acres) 3 Parameter	Mitigation Measures	Monitoring
Bioswale	0.15	0.25	Revegetate with facultative or wetter species	85% (FAC-OBL), Stable Soils, surface hydrology
Vegetated Buffer	0.95	0	Same as above	85% (FAC-OBL), Stable Soils, surface hydrology
Positive Grading	0.19	0	Same as above	85% (FAC-OBL), Stable Soils, surface hydrology
Retention Pond	0	0.13	Revegetate with Facultative wet or wetter species	85% (FACW-OBL), Stable Soils, surface hydrology
Total	**1.29**	**0.38**		

Bioswale

Mitigation Plan:
Prior to any grading in any of the existing wetland areas, native plant species and potentially seeds will be harvested for transplanting. Following grading the entirety of the bioswale will be revegetated with hydrophytic species and straw mulched. In 1 to 2 parameter areas, planting will range from Facultative to Obligate wetland species. In the 3 parameter section plantings will be Facultative wetland to Obligate Wetland species. Wetland parameters that are not present immediately after revegetation are expected to develop over time from the altered hydrology, establishing wetland vegetation, and periodic inundation.

Monitoring Plan:
A 3-year monitoring period will be employed, to be extended if performance criteria are not met. Measures specific to this area:
• Monitoring and reporting using annual surveys and reports (Section 7).
• Reestablish the original hydrology regime of W 1-2 and ES-11.
• Graded slopes of the borrow area with shallow concave slopes reestablishing original contours.
• 85% (FAC – OBL) absolute cover of aquatic species with 3-5 graded optimal growth.
• Stable Soils and documented surface hydrology

Vegetated Buffer

Mitigation Plan:
Prior to any grading in any of the existing wetland areas, native plant species and potentially seeds will be harvested for transplanting. Following grading the buffer will be revegetated with hydrophytic species and straw mulched. Plantings will range from Facultative to Obligate wetland species. Wetland parameters that are not present immediately after revegetation are expected to develop over time from the altered hydrology and establishing wetland vegetation.

Monitoring Plan:
A 3-year monitoring period will be employed, to be extended if performance criteria are not met. Measures specific to this area:
• Monitoring and reporting using annual surveys and reports (Section 7).
• Reestablish the original hydrology regime of W 1-2 and ES-11.
• Graded slopes of the borrow area with shallow concave slopes reestablishing original contours.
• 85% (FAC – OBL) absolute cover of aquatic species with 3-5 graded optimal growth.
• Stable Soils and documented surface hydrology

Positive Grading

Mitigation Plan:
Following grading the area will be revegetated with hydrophytic species and straw mulched. Plantings will range from Facultative to Obligate wetland species. Dominance of Hydrophytic vegetation is the only wetland parameter that is expected to be in this area following the establishment of wetland vegetation.

Monitoring Plan:
A 3-year monitoring period will be employed, to be extended if performance criteria are not met. Measures specific to this area:
• Monitoring and reporting using annual surveys and reports (Section 7).
• Reestablish the original hydrology regime of W 1-2 and ES-11.
• Graded slopes of the borrow area with shallow concave slopes reestablishing original contours.
• 85% (FAC – OBL) absolute cover of aquatic species with 3-5 graded optimal growth.
• Stable Soils and documented surface hydrology

Retention Pond

Mitigation plan:
Prior to any grading in any of the existing wetland areas, native plant species and potentially seeds will be harvested for transplanting. Following grading the buffer will be revegetated with hydrophytic species and straw mulched. Plantings will range from Facultative to Obligate wetland species. Wetland parameters that are not present immediately after revegetation are expected to develop over time from the altered hydrology and establishing wetland vegetation. It is expected that all 3-parameters indicative of wetlands will develop over time.

Monitoring Plan:
A 3-year monitoring period will be employed, to be extended if performance criteria are not met. Measures specific to this area:
• Monitoring and reporting using annual surveys and reports (Section 7).
• Reestablish the original hydrology regime of W 1-2 and ES-11.
• Graded slopes of the borrow area with shallow concave slopes reestablishing original contours.
• 85% (FACW – OBL) absolute cover of aquatic species with 3-5 graded optimal growth.
• Stable Soils and documented surface hydrology

Future Development
Included in the Black Dog Partnership Improvements, Commercial Rezone, and Wetland Mitigation Project are conceptual plans for future residential development east of the proposed bioswale and retention pond. Future development would include the creation of two new roads. The first road, on the south property edge, would not impact any 1 to 3 parameter wetland. The second road, north of the existing McKinleyville Ace Hardware, would impact the 1 to 2 parameter wetland in the vegetated buffer. The proposed road will permanently remove approximately 0.04 acres of 1 to 2 parameter wetland. This reduction in wetland area will not result in a net reduction of wetland area relative to pre-mitigation levels.

6.3 Native Plant Restoration

Review of historic imagery, discussion of past land use and inventory of current plant community indicate the disturbed and undisturbed adjacent like-habitats are dominated by native and non-native grasslands. The *Natural Resource Assessment* dated August 2019 prepared by SHN, SHN 2019, will be considered the most up to date and best representation of vegetative communities on the property (Table 7).

Table 7 Plant Species Identified during Field Work (SHN 2019).

Botanical Species Observed 5/8/2019 and 7/9/2019 Ace Hardware, McKinleyville, CA			
Scientific Name	**Common Name**	**Family**	**Native ?**
Trees			
Alnus rubra	red alder	Betulaceae	Y
Pinus contorta ssp. contorta	shorepine	Pinaceae	Y
Pseudotsuga menziesii var. menziesii	Douglas fir	Pinaceae	Y
Salix hookeriana	Hooker's willow	Salicaceae	Y
Salix lasiolepis	arroyo willow	Salicaceae	Y
Shrubs			
Cotoneaster franchettii	Franchett's cotoneaster	Rosaceae	N
Cytisus scoparius	Scotch broom	Fabaceae	N
Erica lusitanica	Spanish heather	Ericaceae	N
Rosa spp.	cultivated rose	Rosaceae	N
Rubus armeniacus	Himalayan berry	Rosaceae	N
Sedges and Rushes			
Carex densa	dense sedge	Cyperaceae	Y
Carex exsiccate	western inflated sedge	Cyperaceae	Y
Carex obnupta	slough sedge	Cyperaceae	Y
Eleocharis macrostachya	common spikerush	Cyperaceae	Y
Juncus bolanderi	Bolander's rush	Juncaceae	Y
Juncus bufonius	toad rush	Juncaceae	Y
Juncus effusus ssp. pacificus	common rush	Juncaceae	Y
Juncus ensifolius	sword leaved rush	Juncaceae	Y
Luzula comosa var. comosa	woodrush	Juncaceae	Y
Scirpus microcarpus	panicled bullrush	Cyperaceae	Y
Grasses			
Agrostis stolonifera	creeping bentgrass	Poaceae	N
Aira caryophyllea	silver hairgrass	Poaceae	N
Alopecurus pratensis	meadow foxtail	Poaceae	N
Anthoxanthum odoratum	sweet vernal grass	Poaceae	N
Avena barbata	wild oat	Poaceae	N

Briza maxima	large quaking grass	Poaceae	N
Briza minor	small quaking grass	Poaceae	N
Bromus carinatus var. carinatus	California brome	Poaceae	Y
Bromus diandrus	rip-gut brome	Poaceae	N
Bromus hordeacus	soft chess	Poaceae	N

Scientific Name	**Common Name**	**Family**	**Native ?**
Dactylis glomeratum	orchard grass	Poaceae	N
Deschampsia caespitosa ssp. holciformis	tufted hair grass	Poaceae	Y
Festuca arundinacea	California oat-grass	Poaceae	Y
Festuca bromoides	brome fescue	Poaceae	N
Festuca microstachys	small fescue	Poaceae	Y
Festuca Perennis	perennial rye grass	Poaceae	N
Holcus lanatus	velvet grass	Poaceae	N
Phleum pretense	Timothy grass	Poaceae	N
Poa annua	annual grass	Poaceae	N
Poa pratensis	Kentucky bluegrass	Poaceae	N
Herbs			
Alectoria sarmentosa	agapanthus	Lilaceae	N
Allium triquetrum	three cornered leek	Alliaceae	N
Bellis perenne	English daisy	Asteraceae	N
Brassica rapa	common mustard	Brassicaceae	N
Callitriche heterophylla var. heterophylla	varied leaved water starwort	Plantaginaceae	Y
Cerastium glomeratum	mouse-ear chickweed	Carophyllaceae	N
Conium maculatum	poison hemlock	Apiaceae	N
Epilobium ciliatum	fringed willow herb	Onograceae	N
Erodium circutarium	heron's bill	Geraniaceae	N
Erodium moschatum	whitestem filaree	Geraniaceae	N
Euphorbia peplans	petty spurge	Euphoribaceae	N
Fragaria vesca	California strawberry	Rosaceae	Y
Galium aparine	cleaver plant	Rubiaceae	Y
Gamochaeta ustulata	featherweed	Asteraceae	Y
Geranium dissectum	cutleaf geranium	Geraniaceae	N
Geranium robertianum	Robert's geranium	Geraniaceae	N
Helminthotheca echioides	bristly ox-tounge	Asteraceae	N
Hypochaeris radicata	hairy cat's-eat	Asteraceae	N
Lathyrus latifolius	sweet pea	Fabaceae	N
Leontodon saxatilis	hawkbit	Asteraceae	N

Leucanthemum vulgare	oxeye daisy	Asteraceae	N
Linum bienne	flax	Linaceae	N
Lotus corniculatus	bird's-foor trefoil	Fabaceae	N
Lysimachia arvensis	scarlet pimpernel	Myrsinaceae	N
Matricaria discoidea	pineapple weed	Asteraceae	Y

Scientific Name	**Common Name**	**Family**	**Native ?**
Medicago polymorpha	bur clover	Fabaceae	N
Mentha pulegium	pennyroyal	Lamiaceae	N
Parentucellia viscosa	yellow glandweed	Orobanchaceae	N
Plantago lanceolata	English plantain	Plantaginaceae	N
Polygonum aviculare	prostrate knotweed	Polygonaceae	N
Potentilla anserine ssp. pacifica	silverweed	Rosaceae	Y
Prunella vulgaris var. lanceolata	self-heal	Lamiaceae	Y
Ranunculus repens	creeping buttercup	Ranunculaceae	N
Raphanus sativa	wild radish	Onograceae	N
Rumex acetosella	sheep sorrel	Polygonaceae	N
Rumex crispus	curly dock	Polygonaceae	N
Sisyrinchium californicum	California golden eyed grass	Iridaceae	Y
Sonchus olereacus	sow thistle	Asteraceae	N
Spergularia rubra	pig-a-back plant	Saxifragaceae	Y
Stachys ajugoides	bugle hedge-nettle	Lamiaceae	Y
Stachys chamissonis	hedge nettle	Lamiaceae	Y
Stellaria media	chickweed	Carophyllaceae	N
Taraxacum officinale	dandelion	Asteraceae	N
Trifolium dubium	shamrock clover	Fabaceae	N
Trifolium fragiferum	strawberry clover	Fabaceae	N
Trifolium incarnatum	crimson clover	Fabaceae	N
Trifolium repens	white clover	Fabaceae	N
Trifolium subterraneum	subterranean clover	Fabaceae	N
Triphysaria versicolor	yellow owl's clover	Orobanchaceae	Y
Veronica americana	American brooklime	Scrophulariaceae	Y
Veronica scutellata	marsh speedwell	Plantaginaceae	Y
Vicia hirsuta	tiny vetch	Fabaceae	N
Vicia sativa ssp. sativa	spring vetch	Fabaceae	N
Vines			
Convolvulus arvensis	field bindweed	Convolvulaceae	N
Lichens and Bryophytes			

Lobaria pulmonaria	tree lungwort	Lobariaceae	Y
Ramalina menziesii	California lace lichen	Ramalinaceae	Y
Parmelia sulcata	shield lichen	Parmeliaceae	Y

Native plants identified during fieldwork were assessed for their wetland indicator status, plants that are Facultative status or wetter and are native are proposed for purchasing and/or onsite harvesting for revegetation (Table 8). Plants may be selected, as available, at regional plant nurseries.

Table 8 Plant Species proposed for purchase and/or onsite harvesting.

Species	**Common Name**	**Wetland Indicator Status**
Alnus rubra	red alder	FAC
Salix hookeriana	Hooker's willow	FACW
Salix lasiolepis	arroyo willow	FACW
Carex densa	dense sedge	OBL
Carex exsiccate	western inflated sedge	OBL
Carex obnupta	slough sedge	OBL
Eleocharis macrostachya	common spikerush	OBL
Juncus bolanderi	Bolander's rush	OBL
Juncus bufonius	toad rush	FACW
Juncus effusus ssp. pacificus	common rush	FACW
Juncus ensifolius	sword leaved rush	FACW
Luzula comosa var. comosa	woodrush	FAC
Scirpus microcarpus	panicled bullrush	OBL
Callitriche heterophylla var. heterophylla	varied leaved water starwort	OBL
Potentilla anserine ssp. pacifica	silverweed	OBL
Spergularia rubra	pig-a-back plant	FAC
Stachys ajugoides	bugle hedge-nettle	OBL
Stachys chamissonis	hedge nettle	FACW
Veronica americana	American brooklime	OBL
Veronica scutellata	marsh speedwell	OBL

For all restoration areas, a species richness, optimal growth rating (1-5), should be 3 or greater. For all restoration areas species evenness should be quantified by looking at the distribution of relative abundance of species and ensuring that there is not an over-abundance of one species. Species should be planted at equal proportions unless the microhabitat requirements of the species indicate one particular species is anticipated to do better than others.

Native plant salvage may be sourced from the property, including areas of wetland that will be impacted and areas of non-wetland that will be disturbed during construction activities, and used for transplanting. Salvaged plants should be placed in a temporary nursery area.

- Plant salvage shall be conducted under the supervision of a qualified biologist.
- Salvaged native plant materials should be placed in shade and staged in standing water or moist soils.
- Plants should be checked frequently enough to ensure adequate plant moisture.

Containerized plantings should be planted during their dormant period and when soil moisture levels on site are high to prevent desiccation. The recommended spacing is approximately 5-feet. It is recommended that restoration plants be sourced from local native plant nurseries such as Samara Restoration, the Mattole Restoration Council, or the local CNPS Nursery at Freshwater Farms. Native grass seeding shall be applied to areas of exposed bare soils prior to November 15t, 2024, or within 30 days following completion of work. The recommended application rate of not less than 45-50 pounds per acre should be applied. As an example, but not endorsement, the Pacific Coast Seed company sells California native grass mixes and is available to order online. The recommended rate of application for the Pacific Coast Native Erosion Control Mix is 45 pounds per acre.

Weed-free straw mulching application shall be completed within 30 days after land disturbance activities. Mulching shall be applied following restoration planting and grass seeding. Mulch is typically available in the form of straw bales. Weed free and clean straw mulch shall be laid down to a minimum depth of 2 inches with minimum 90-100% coverage of bare mineral soil areas. Depending on how loose or tight a bale is packed, coverage ranges from 300 ft^2-500 ft^2.

Each spring, the site should be monitored by photo-documenting, recording the survival rate of restoration plantings, and by estimating percent vegetative cover of the restoration areas. If initial plantings are not successful and the project is not meeting performance standards, purchasing additional nursery stock and replanting may be needed. Document any new replacement plantings. Adaptive management should be employed throughout the monitoring period. Annual monitoring reports with photo-documentation, monitoring data, and progress toward restoration objectives shall be provided to state and county agencies for review. The final monitoring report should include an analysis of how project goals and objectives were or were not met.

6.7 Stormwater and BMPs

Post grading Best Management Practices (BMP) will be implemented to ensure slope stability, erosion and sedimentation is stable going into the wet season. As described above, straw mulching, seeding, and monitoring will be occurring to ensure the work areas are stabilized for stormwater and down gradient areas are protected.

7.0 Performance Standards

Performance standards for assessing the success of the restoration and enhancement project described in this Wetland Mitigation and Monitoring Plan are provided below. These standards are based on the best available scientific knowledge and utilize objective and quantitative metrics that can be evaluated across time periods and restoration sites. Monitoring the progress will be performed by qualified biologists in order to ensure that the project is meeting its performance standards and that construction is proceeding according to the specifications of this Wetland Mitigation and Monitoring Plan and engineered design plans and not creating additional impacts to sensitive species or habitats.

As described below, monitoring compliance with site plans and environmental regulations by contractors during construction, the qualified biologist will take measurements and collect data as necessary throughout the year, for the entire period of construction and subsequent monitoring period that shall be no less than 3 years post-construction. The biological monitor should collect all the data and observations that are required in order to ensure site protection, as well as calculate the performance standards listed below. An annual report should be prepared at the end of each calendar year to assess quantitatively using statistical methods, whether performance criteria are on track to being met or whether adaptive management steps should be taken as described below.

7.1 Mitigation & Monitoring Surveys and Reports

Wetland restoration and enhancement areas proposed will be delineated at least once per year using quantitative protocols as described in the U.S. Army Corps of Engineers manuals. Qualitative surveys for wetland functions will also be performed annually during the 3-year monitoring period. The success of the restoration of wetlands will be gauged by the following criteria:

(1) Annual surveys for the wetland restoration areas will include a visual assessment of hydrology, soils, and vegetation including.

(2) An 85% absolute cover of hydrophytic vegetation goal.

(3) A species optimum test of 3 or greater for over 50% of planted species:

a. 0 – Dead, no evidence of recovery
b. 1 – Main stem dead, but basal sprouts emerging
c. 2 – Low vitality with evidence of biomass loss
d. 3 – Plant apparently not growing
e. 4 – Vigorous, but not optimal growth
f. 5 – Optimal growth (budding, new leaf growth, flowering, seeding, etc.)

(4) By year 3, restored wetlands shall meet the three criteria for a wetland, as defined by the 1987 Corps of Engineers Wetland Delineation Manual and the 2010 Western Mountains, Valleys, and Coast Region Supplement and be well-functioning aquatic resource areas.

(5) Restored wetlands will be inundated for similar duration and depth as pre-impact wetlands.

Wetland and other plant species will also be monitored using methods specified by CDFW (CDFW 2018). General vegetation sampling shall be performed by quantitatively sampling all species present. Each species and the absolute percent cover will be recorded and analyzed statistically for trends through time. The restoration project area will be sampled to determine whether targets for native and wetland species composition are being met. The following criteria constitute successful vegetation restoration:

(1) Surveys will be conducted annually during the 3-year monitoring period and all plant species present documented to determine trends in species composition.

(2) Vegetation cover of wetland or hydrophytic species (species classified by the US Army Corps of Engineers National Wetland Plant List as obligate wetland, facultative wetland, or facultative) in restored wetland areas is 85% survival and growth.

7.2 Non-Native Invasive Species

To prevent the transfer of invasive species, all equipment will be cleaned before arriving and before leaving the site. Invasive species will be monitored for the duration of the 3-year monitoring period. Percent cover of native and non-native species will be assessed. Survey data should show increases in proportion of native species relative to non-native species for the duration of the 3-year monitoring period.

7.3 Adaptive Management

If any of the above success criteria are not likely to be met at the end of the 3-year monitoring period then adaptive management is recommended. Adaptive management treatments will be approved by a qualified project biologist (wetlands ecologist or botanist). A summary of treatments will be provided to the City of McKinleyville in the annual reports. Typical management efforts will likely include installing more plantings, increasing manual non-native weed removal efforts, and maintenance of BMPs.

8.0 References Cited

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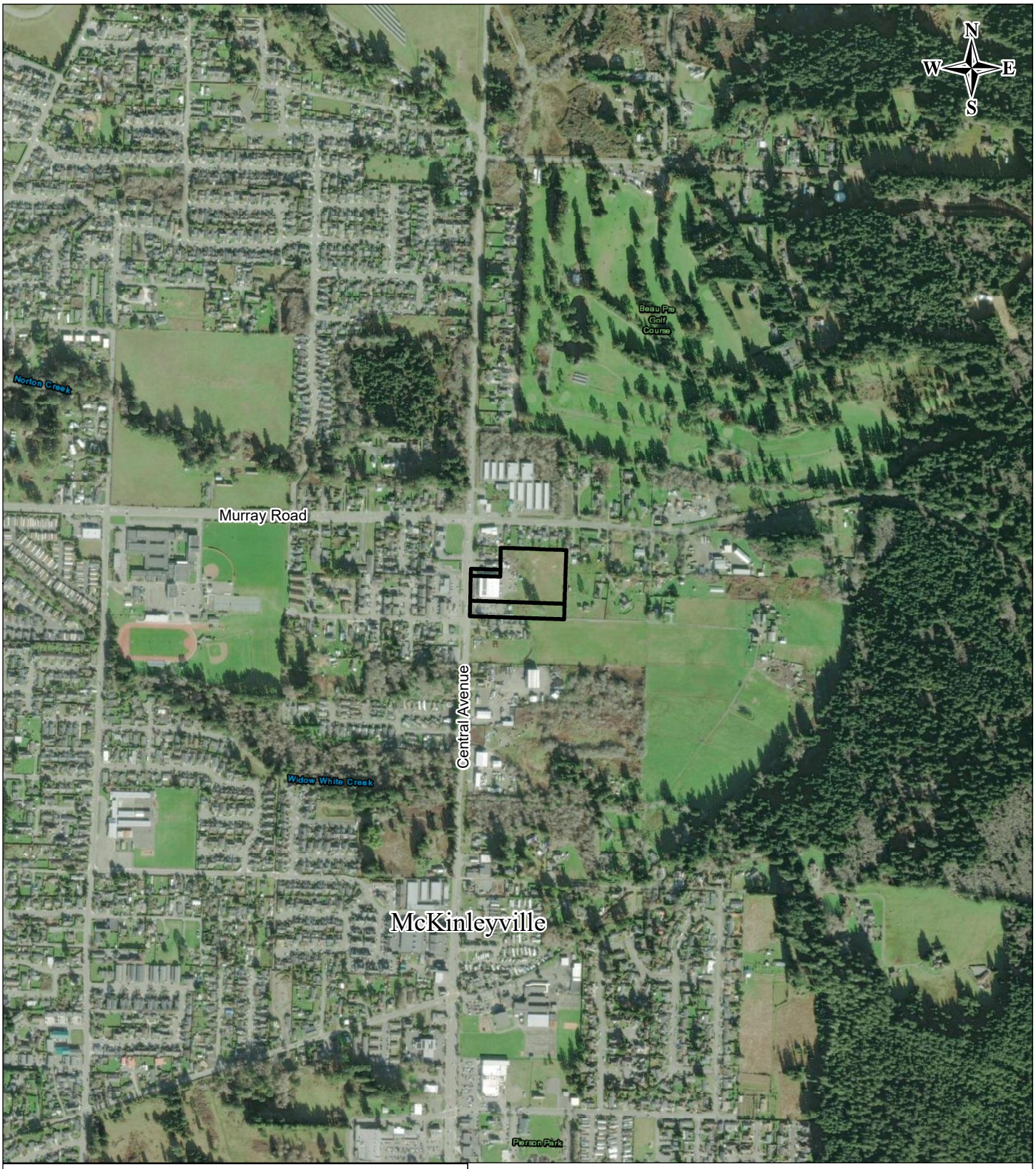
California Natural Resources Agency Department of Fish and Wildlife. March 2018. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities.

Appendix A: Project Area Maps



Black Dog Residential Development
General Location Map
APNs: 510-081-001, 510-081-002, 510-081-003

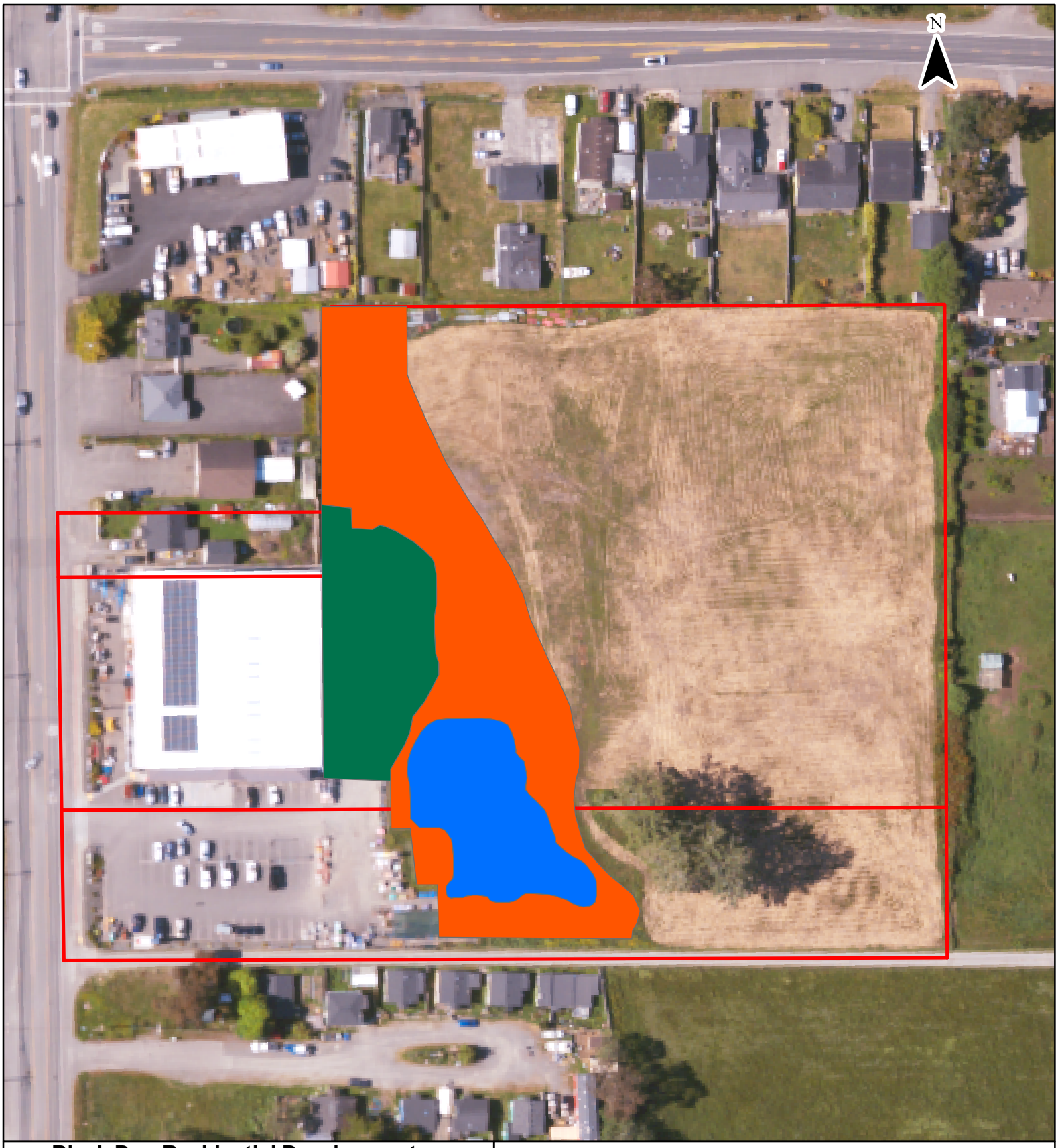
Section 32; T7N; R1E; HB&M; Humboldt County
Located on the Arcata North 7.5' USGS Quadrangle

Subject Parcels

0 500 1,000 2,000 Feet

Contour Interval: 40'
1 inch = 1,000 feet

Hohman And Associates Forestry Consultants
Date: 11/24/2025



Black Dog Residential Development
Existing Wetlands Map

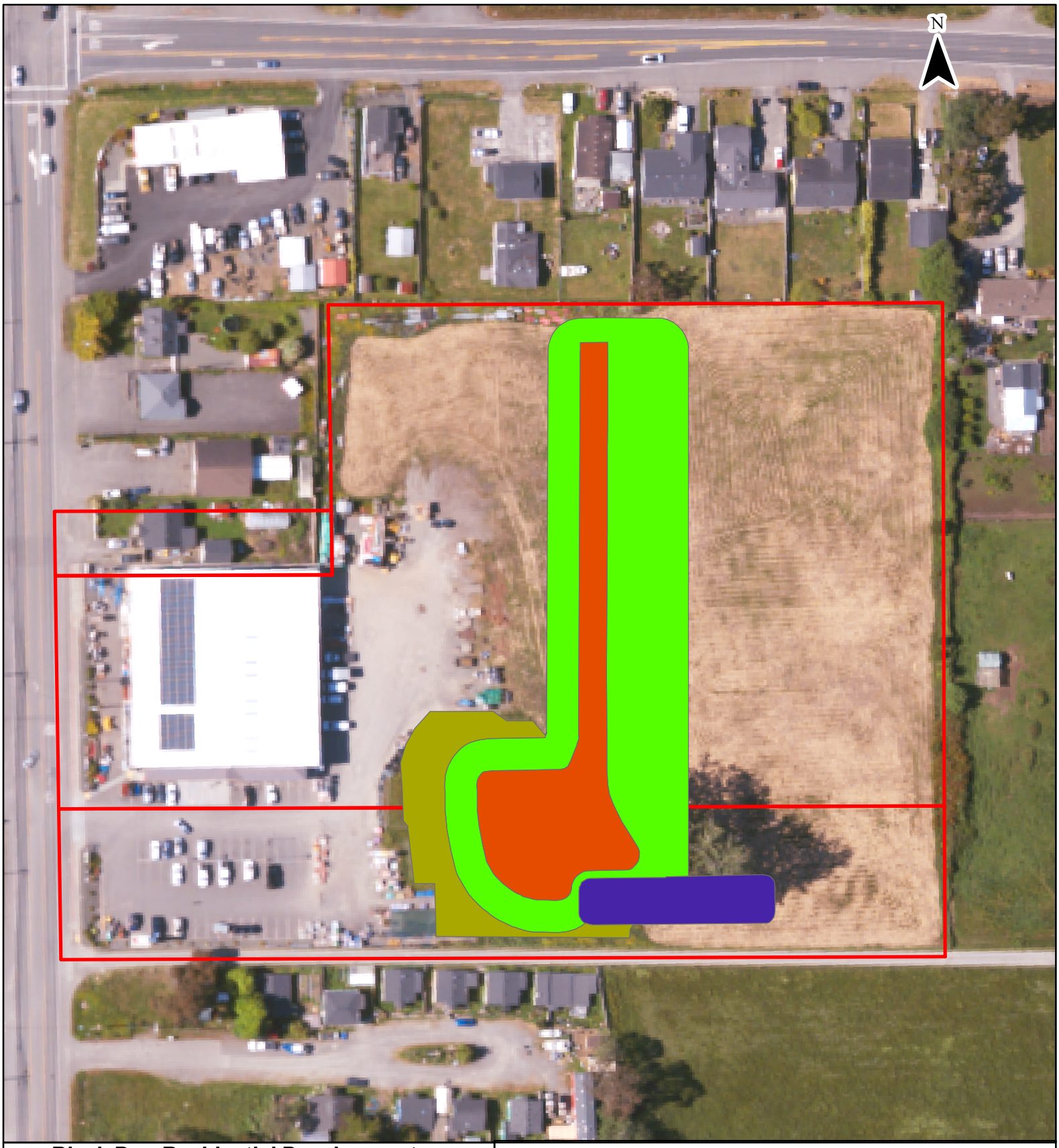
APNs: 510-081-001, 510-081-002, 510-081-003

Section 32; T7N; R1E; HB&M; Humboldt County
Located on the Arcata North 7.5' USGS Quadrangle

- Unpermitted Parking (Filled 1-2)
- 1 to 2 Parameter Wetland
- 3 Parameter Wetland

Feet
0 60 120 240
1:1,200
1 inch = 100 feet

Hohman and Associates Forestry Consultants
Date: 3/18/2026



Black Dog Residential Development
Mitigation Features Map

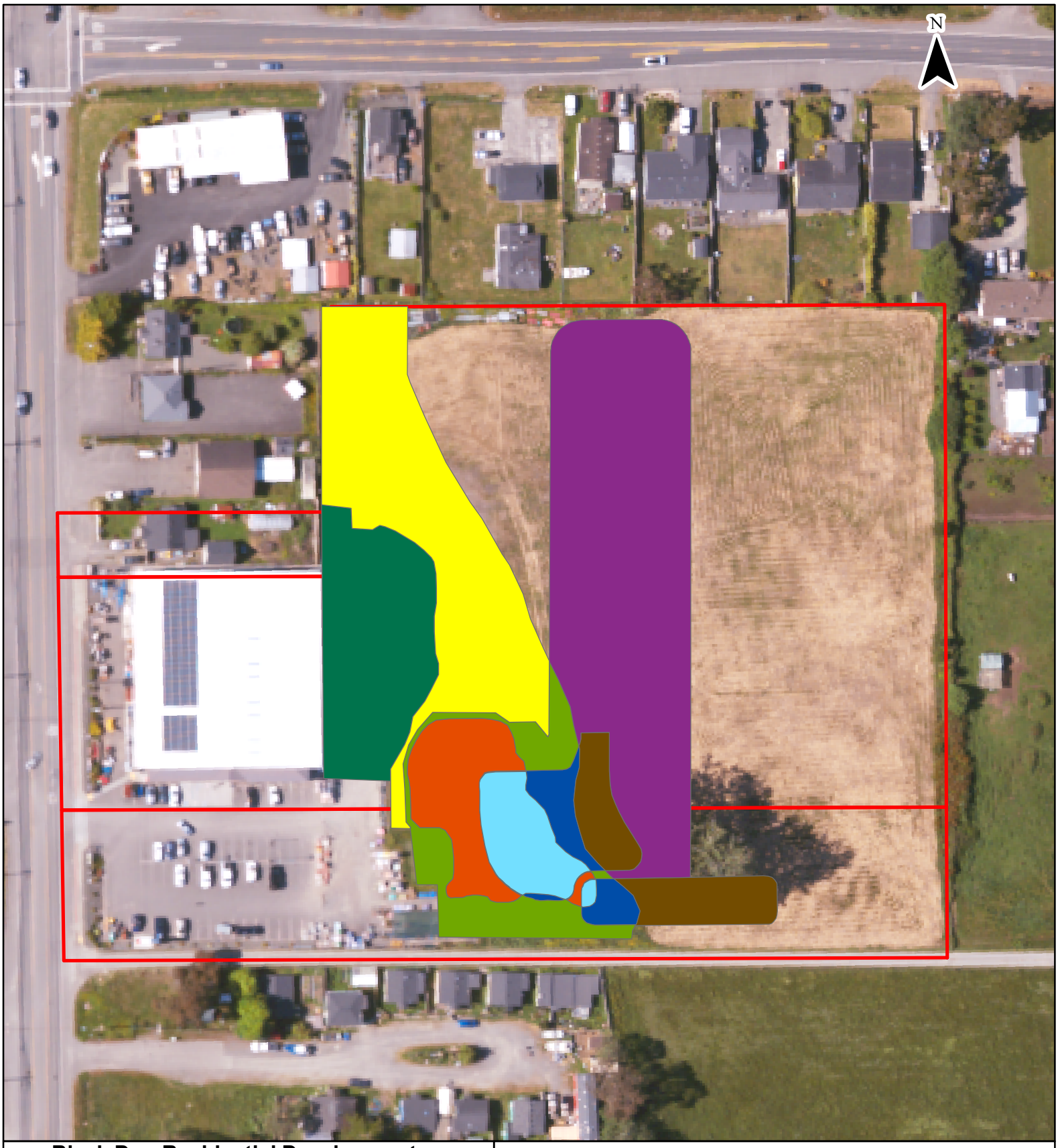
APNs: 510-081-001, 510-081-002, 510-081-003

Section 32; T7N; R1E; HB&M; Humboldt County
Located on the Arcata North 7.5' USGS Quadrangle

Buffer
Detention
Grade
Swale

Feet
0 60 120 240
1:1,200
1 inch = 100 feet

Hohman and Associates Forestry Consultants
Date: 3/19/2026



Black Dog Residential Development
Wetland Mitigation Map

APNs: 510-081-001, 510-081-002, 510-081-003

Section 32; T7N; R1E; HB&M; Humboldt County
Located on the Arcata North 7.5' USGS Quadrangle

- 1-2 to 3 Parameter
- 3 to 1-2 Parameter
- Keep 1-2 Parameter
- Keep 3 Parameter
- New 1-2 Parameter
- New 3 Parameter
- Remove 1-2 Parameter
- Unpermitted Parking (Filled 1-2)

Feet
0 60 120 240
1:1,200
1 inch = 100 feet

Hohman and Associates Forestry Consultants
Date: 3/18/2026



Black Dog Residential Development
Post Mitigation Map

APNs: 510-081-001, 510-081-002, 510-081-003

Section 32; T7N; R1E; HB&M; Humboldt County
Located on the Arcata North 7.5' USGS Quadrangle

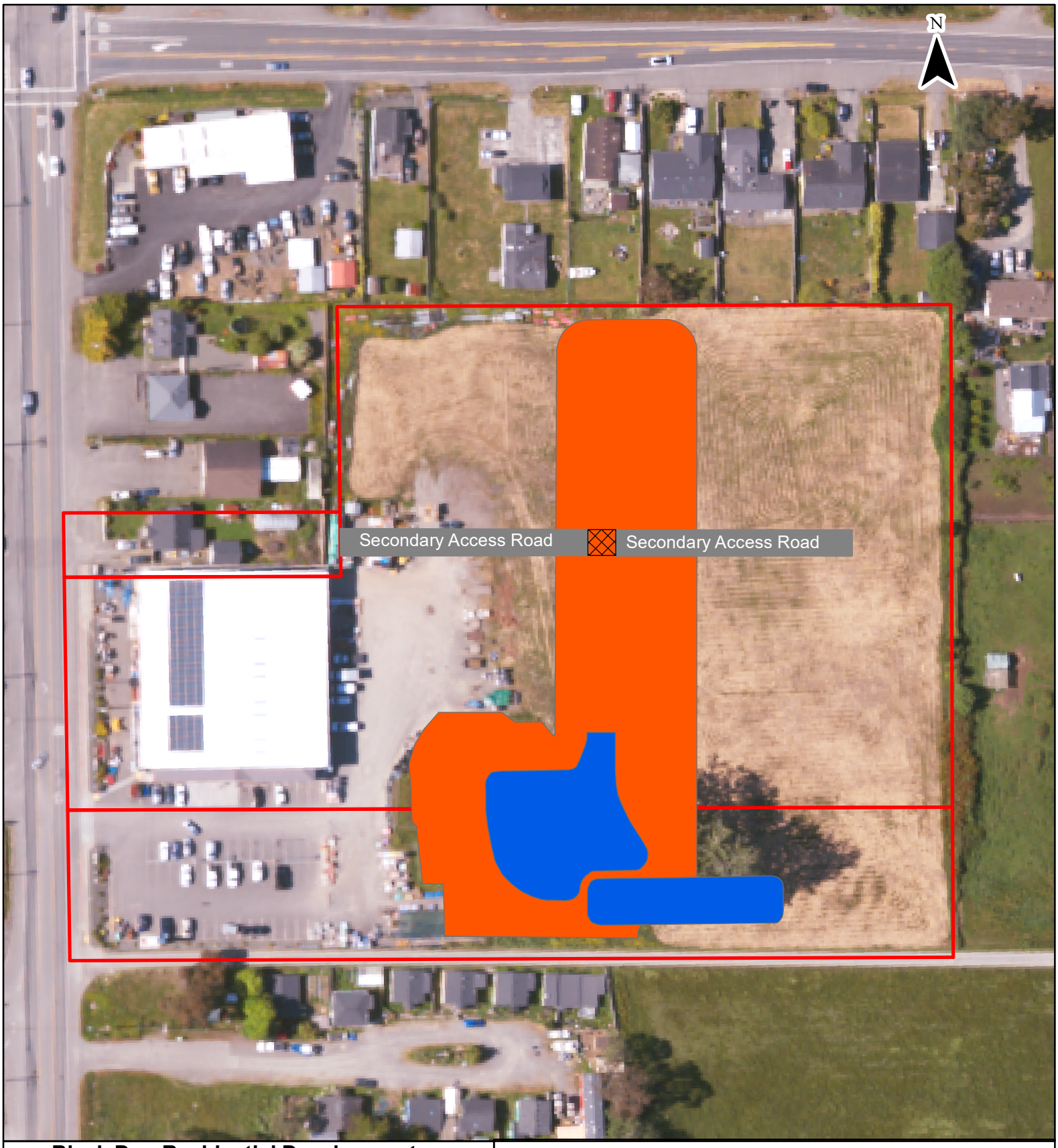
1-2 Parameter Wetland

3 Parameter Wetland

Feet
0 60 120 240

1:1,200
1 inch = 100 feet

Hohman and Associates Forestry Consultants
Date: 3/18/2026



Black Dog Residential Development
Secondary Access Road Map

APNs: 510-081-001, 510-081-002, 510-081-003

Section 32; T7N; R1E; HB&M; Humboldt County
Located on the Arcata North 7.5' USGS Quadrangle

- Bridge
- Secondary Access Road
- 1-2 Parameter Wetland
- 3 Parameter Wetland

Feet
0 60 120 240
1:1,200
1 inch = 100 feet

Hohman and Associates Forestry Consultants
Date: 3/18/2026

AQUATIC RESOURCES DELINEATION REPORT

2725 & 2707 Central Ave, McKinleyville, 95519, Humboldt County, CA

Assessor Parcel Number (APN):

510-081-002-000 & 510-081-001-000



Prepared For:

Black Dog Partnership

Central Ave

McKinleyville CA, 955

Prepared By:

Naiad Biological Consulting

www.naiadbiological.com

PO Box 121

Samoa, CA 95564

Date Prepared:

January 7th, 2026

Certification I certify that the information and conclusions presented in this wetland delineation and aquatic resources report are based on my direct observations, data collection, and professional analysis, and are true and correct to the best of my knowledge, judgment, and belief.

X _____.

Mason London, MSc Biology

Naiad Biological Consulting Principal Biologist

Table of Contents

Section 1 Executive Summary 3
Section 2 Introduction, Background, and Project Understanding 4
2.1 Purpose and Need 4
2.2 Delineator's Qualifications 4
2.3 Study Area Description and Geographic Setting 5
Section 3 Regulatory Framework 8
3.1 Federal Regulatory Framework 8
3.2 California State and Regional Regulatory Framework 8
3.2.1 California Department of Fish and Wildlife 8
3.2.2 North Coast Regional Water Quality Control Board 9
3.3 Local Regulatory Framework and One-Parameter Wetlands 9
Section 4 Methods 10
4.1 Pre-Site Visit Data Compilation and Preparation 10
4.2 Field Survey 11
4.2.1 Soils 12
4.2.2 Hydrology 12
4.2.3 Vegetation 13
Section 5 Results 14
5.1 Aquatic Resources 14
5.1.1 Watercourses 14
5.1.2 Wetlands 16
5.1.2.1 Soils 16
5.1.2.2 Hydrology 17
5.1.2.3 Vegetation 17
Section 6 Conclusions, Discussion, and Recommendations 19
6.1 Conclusions 19
6.2 Discussion 19
6.3 Recommendations 20
6.4 Conditions and Limitations 20
Section 7 References 22

Appendices:

Appendix A – Web Soil Survey Map and Report
Appendix B – National Wetland Mapper
Appendix C – Antecedent Precipitation Tool Graph
Appendix D – Wetland Determination Data Forms
Appendix E – Prior Wetland Delineation Data

FIGURES

Figure 1. Study Area Locator Map 6

Figure 2. Wetland and aquatic resources delineation overview for the Black Dog Residential Development, McKinleyville, Humboldt County, California. The map depicts areas previously evaluated by Streamline Planning (2015) and SHN (2020), as well as the portion of the Study Area requiring additional delineation effort that was evaluated as part of the current study (December 5, 2025). 7

Figure 3. Aerial view of the Study Area showing Assessor's Parcel Numbers 510-081-001-000 and 510-081-002-000 in McKinleyville, Humboldt County, California. The map depicts parcel boundaries, locations of four wetland delineation plots (P1–P4), and areas evaluated as part of the current delineation effort. All delineation plots shown were determined to be non-wetland based on field observations conducted on December 5, 2025. 15

TABLES

Table 1. WETS Table Analysis for the December 5th, 2025 Survey 11

Table 2. Wetland Plot Summary (Datasheets Provided in Appendix D) 16

PHOTOS

Photo 1. P1 Location 23

Photo 2. P1 Soil Profile. 23

Photo 3. P2 Location 24

Photo 4. P2 Soil Profile. 24

Photo 5. P3 Location 25

Photo 6. P3 Soil Profile. 25

Photo 7. P4 Location 26

Photo 8. P4 Soil Profile. 26

Section 1 Executive Summary

Naiad Biological Consulting (NBC) conducted a wetland and aquatic resources delineation for portions of a multi-parcel property located in McKinleyville, Humboldt County, California, consisting of Assessor's Parcel Numbers 510-081-001, and 510-081-002. This delineation was requested to supplement prior biological and wetland studies and to evaluate areas of the site that had not been fully assessed during earlier investigations, in support of ongoing County of Humboldt planning and development review.

The purpose of this delineation was to determine whether wetlands or other jurisdictional aquatic features are present within the portion of the Study Area requiring additional delineation effort, specifically the eastern portion of APN 510-081-001 and a small portion of the southeastern area of APN 510-081-002. Wetland indicators were evaluated using the U.S. Army Corps of Engineers (USACE) three-parameter methodology (hydrophytic vegetation, hydric soils, and wetland hydrology), as well as local County land use policies that apply a one-parameter wetland definition within the McKinleyville area.

Fieldwork was conducted on December 5, 2025, under winter conditions. Four wetland delineation plots (P1–P4) were established within the delineation focus area to capture representative site conditions, including flat pasture areas and subtle topographic variation. The site has been historically managed as pasture, and the landowner indicated that the area has been periodically mowed, tilled, and seeded with a commercial pasture mix. Observed vegetation composition and site conditions were consistent with this land management history.

None of the delineation plots exhibited hydric soils, wetland hydrology, or a dominance of hydrophytic vegetation. Although individual facultative species were present, vegetation across the site was dominated by upland and facultative upland pasture species, and prevalence metrics did not meet hydrophytic thresholds. Soil profiles were consistent with mapped well-drained, non-hydric soils, and no indicators of prolonged saturation or surface water were observed, despite seasonal timing when hydrologic expression would be most likely if wetlands were present.

Based on the results of the field investigation and supporting desktop review, no wetlands or other jurisdictional aquatic features were identified within the portion of the Study Area requiring additional delineation effort. These findings indicate that the evaluated areas do not qualify as wetlands under federal, state, or County one-parameter wetland criteria. The results of this delineation are intended to support County planning review and inform project design and permitting considerations. Final determinations regarding regulatory jurisdiction remain the responsibility of the appropriate agencies.

Section 2 Introduction, Background, and Project Understanding

2.1 Purpose and Need

The purpose of this wetland and aquatic resources delineation is to identify and map wetland features and other waters of the United States and/or waters of the State of California that may occur within the boundaries of Assessor's Parcel Numbers 510-081-001, 510-081-002, and 510-081-003, located in McKinleyville, Humboldt County, California. This delineation was conducted to supplement prior biological and wetland studies completed for the site and to support ongoing land use and development planning review by the County of Humboldt.

Previous site evaluations include an upland clearance assessment completed by Streamline Planning in 2015 and a wetland delineation conducted by SHN in 2020 (Appendix E). Review of these prior studies indicates that a portion of the southeastern area of the project site was not previously evaluated for wetland resources (Figure 2). The current delineation effort was undertaken to assess this remaining area, fill the identified data gap, and provide a more complete and continuous characterization of wetland and non-wetland features across the project site.

The delineation is intended to determine whether any wetlands or other regulated aquatic features are present within the study area and to document their extent and regulatory status pursuant to applicable federal, state, and local regulations, including the Clean Water Act (Sections 401 and 404), the Porter-Cologne Water Quality Control Act, and County of Humboldt wetland protection policies. Based on site conditions and regulatory context, wetlands meeting one-parameter criteria under state and local jurisdiction were anticipated and evaluated as part of this effort.

Fieldwork for this delineation was conducted outside of the typical flowering season for many plant species. Accordingly, the delineation relies on observable site conditions present at the time of the site visit, including hydrology, soil characteristics, geomorphic setting, and available vegetation indicators. Potential limitations associated with seasonal timing are acknowledged, and appropriate caveats are included where relevant. The results of this delineation are intended to inform County review, project feasibility, and identification of any required avoidance, setback, or mitigation measures associated with future development of the site.

2.2 Delineator's Qualifications

The aquatic resource delineation described in this report was conducted by Mason London. Mr. London holds an M.Sc. in Biology with a specialization in aquatic ecology from Cal Poly Humboldt (formerly Humboldt State University) and serves as the Principal Biologist at Naiad Biological Consulting (NBC). He has over 18 years of professional experience spanning wildlife biology, botany, aquatic ecology, and university-level instruction. His prior roles include wildlife biologist with The Nature Conservancy, botanist with the Bureau of Land Management in Medford, Oregon, and aquatic research scientist with the HSU River Institute. Mr. London has worked extensively on CEQA and NEPA projects, conducting protocol-level surveys for special-status species such as willow flycatcher, Swainson's hawk, California red-legged frog, foothill yellow-legged frog, and western pond turtle, as well as botanical surveys across a variety of upland and aquatic habitats. He also has significant experience in pre-construction and compliance monitoring surveys focused on amphibians, reptiles, nesting birds, and mammals throughout California. In addition, Mr. London has over five years of experience conducting wetland delineations and has

completed a 40-hour Introduction to Wetland Delineation course taught by Joe Seney, a Certified Professional Soil Scientist (#243) and retired USDA-NRCS and USDI-NPS Soil Scientist. Mr. London is currently an instructor with the Wetland Training Institute and assistants with leading wetland delineations courses in Northern California.

2.3 Study Area Description and Geographic Setting

The Study Area encompasses two contiguous parcels identified as Assessor's Parcel Numbers (APN) 510-081-001, and 510-081-002, located in the community of McKinleyville, an unincorporated area of Humboldt County, California. The parcels are situated south of Murray Road and east of Central Avenue, within a developed residential and commercial setting. The Study Area is associated with the proposed Black Dog Residential Development and includes areas previously evaluated by Streamline Planning (2015) and SHN (2020), as well as portions that had not been formally delineated prior to the current effort (Figure 1 and Figure 2; Appendix E).

The parcels comprising the Study Area total approximately 6.84 acres. APN 510-081-001 encompasses approximately 1.84 acres, and APN 510-081-002 encompasses approximately 5.00 acres, based on assessor and GIS mapping data. Review of prior studies indicates that the area requiring additional delineation effort includes approximately the eastern 30% of APN 510-081-001, as well as a small section along the southeastern portion of APN 510-081-002 (Figure 2). These areas were not fully evaluated during previous site assessments and are the focus of the current delineation effort to address the identified gap in coverage.

Topography across the Study Area is generally low relief, with subtle elevation changes and a gradual rise toward the northeastern portion of the site. Land cover consists primarily of disturbed grassland and ruderal vegetation, with localized landscaped or maintained areas. The Study Area is bordered by residential development along the northern and eastern margins and commercial development to the west. Portions of the site exhibit evidence of historic grading, drainage alteration, and prior land use associated with agricultural or commercial activities.

Regionally, the Study Area is located within the Luffenholtz Creek–Frontal Pacific Ocean subwatershed (Hydrologic Unit Code [HUC] 180101020503), which encompasses small, coastal-draining catchments that discharge directly to the Pacific Ocean. Surface hydrology within the Study Area is characterized by shallow swales, low-gradient drainage features, and areas of seasonal saturation consistent with local precipitation patterns and shallow groundwater conditions. No perennial streams are present within the Study Area; however, wetlands meeting one-parameter criteria under state and local jurisdiction were anticipated and evaluated.

The Study Area occurs within Land Resource Region A (LRR-A) and a Major Land Resource Area representative of the Northern California coastal plain and foothills. The region is characterized by a cool, maritime climate with winter-dominated precipitation, frequent soil saturation during the wet season, and soils derived from coastal sedimentary and alluvial deposits. These conditions contribute to the potential presence of wetlands and other aquatic resources subject to regulation under federal, state, and local frameworks, necessitating a site-specific delineation to inform land use planning and regulatory review.

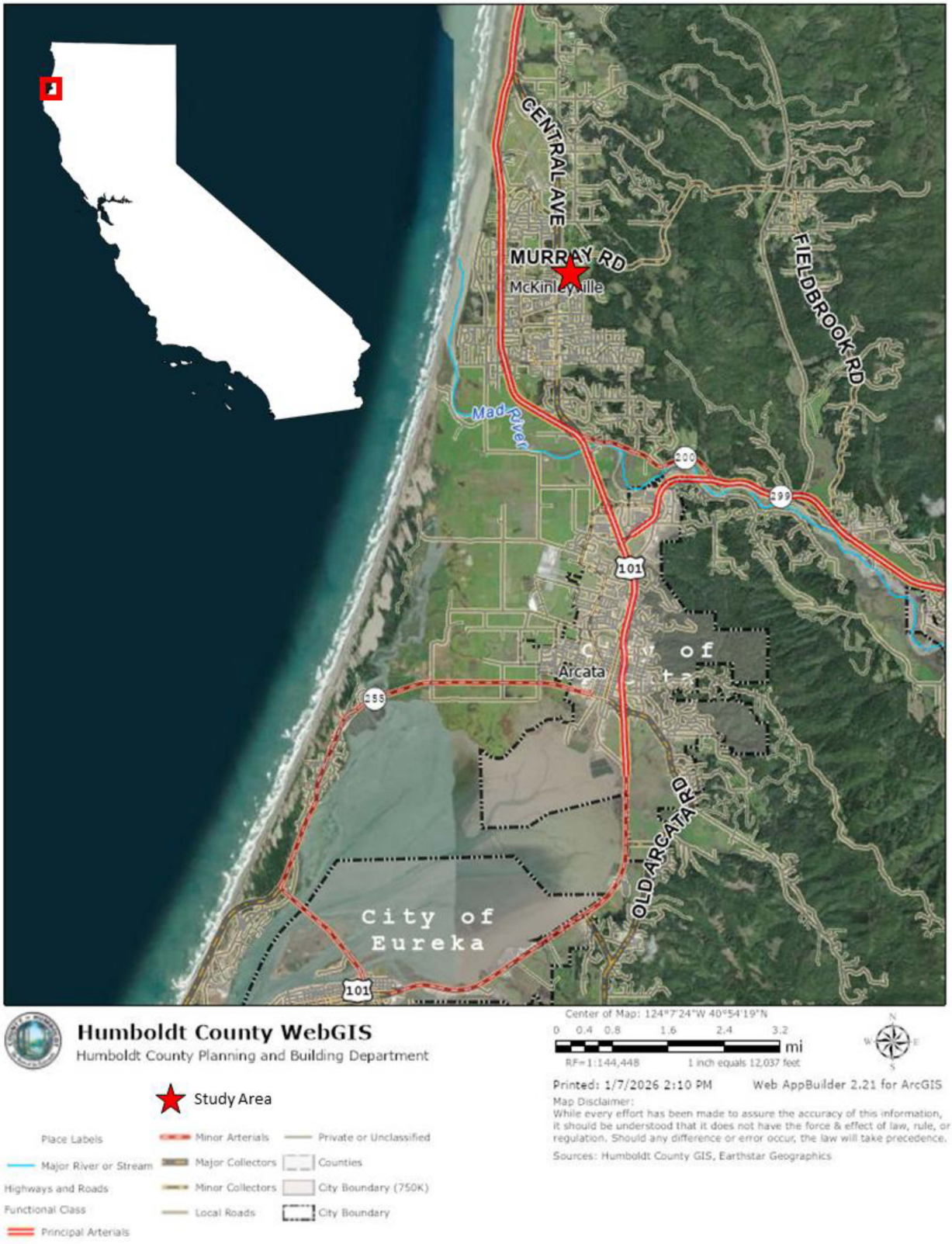


Figure 1. Study Area Locator Map

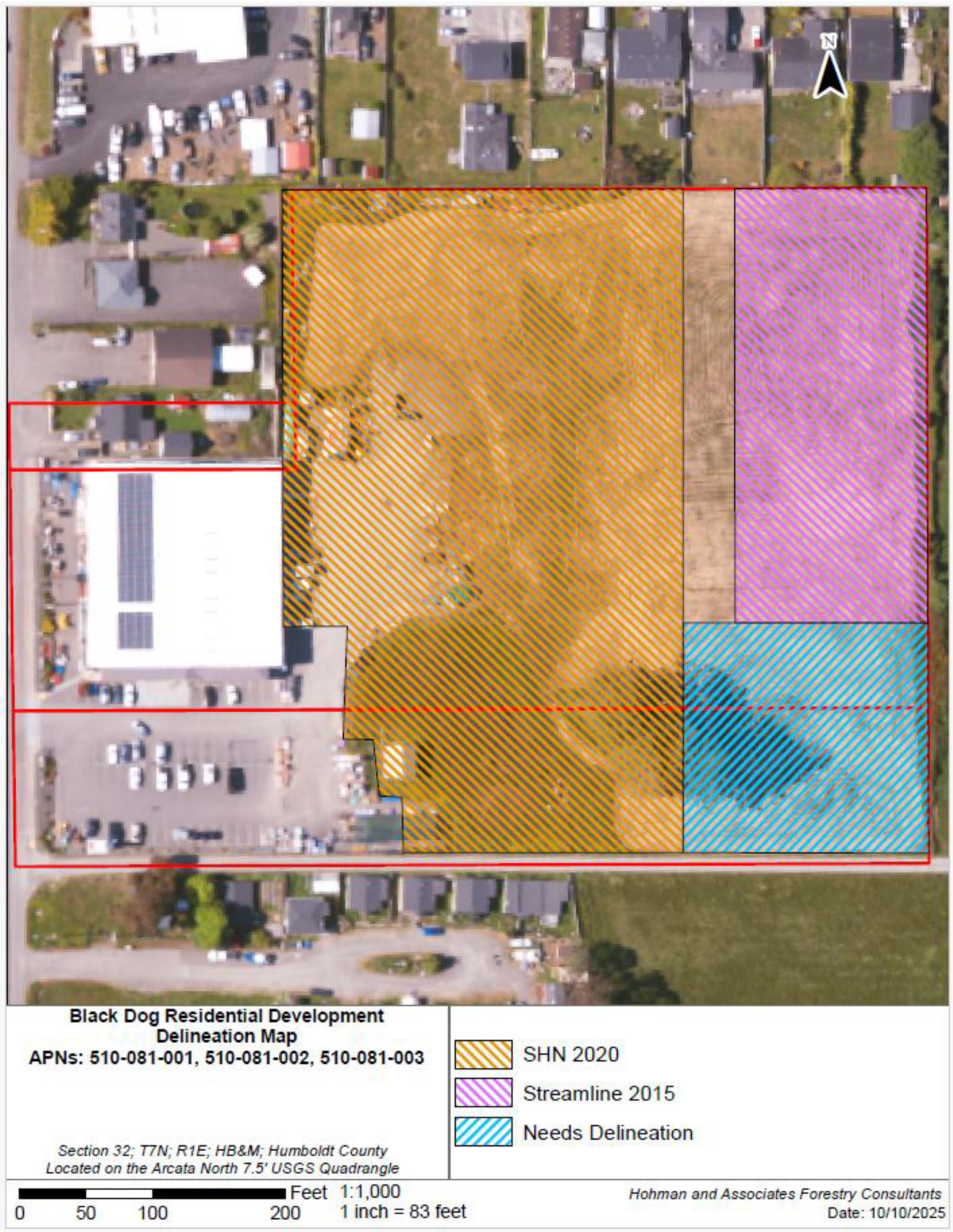


Figure 2. Wetland and aquatic resources delineation overview for the Black Dog Residential Development, McKinleyville, Humboldt County, California. The map depicts areas previously evaluated by Streamline Planning (2015) and SHN (2020), as well as the portion of the Study Area requiring additional delineation effort that was evaluated as part of the current study (December 5, 2025).

Section 3 Regulatory Framework

This section summarizes the federal, state, and local regulatory framework applicable to wetland and aquatic resource delineation for the Study Area located in McKinleyville, Humboldt County, California. Although the property is located outside of the California Coastal Zone, wetland identification and regulation are subject to federal and state water quality laws as well as local County policies, including the use of one-parameter wetland criteria for land use planning purposes.

3.1 Federal Regulatory Framework

At the federal level, regulation of Waters of the United States (WOTUS) is governed primarily by Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act (RHA). These regulations apply to certain aquatic features, including traditional navigable waters, their tributaries, impoundments, and wetlands that meet the definition of federal jurisdiction.

The U.S. Army Corps of Engineers (USACE) administers the Section 404 permitting program and is responsible for conducting Jurisdictional Determinations (JDs) to identify whether aquatic features qualify as WOTUS. The U.S. Environmental Protection Agency (EPA) provides regulatory oversight and enforcement authority under the CWA.

Federal jurisdiction is currently evaluated under the Revised Definition of Waters of the United States, which became effective on September 8, 2023. Under this framework, wetlands and other aquatic features must meet the three-parameter criteria—hydrophytic vegetation, hydric soils, and wetland hydrology—and demonstrate a continuous surface connection to a traditional navigable water or other qualifying jurisdictional waterbody. Certain features, such as isolated depressions, ephemeral drainages lacking a continuous surface connection, or artificial conveyances, may be excluded from federal jurisdiction depending on site-specific conditions.

Any project proposing the discharge of dredged or fill material into federally jurisdictional waters would require authorization from the USACE, typically through a Nationwide Permit or an Individual Permit, depending on the nature and extent of impacts. A formal wetland delineation and, where applicable, a jurisdictional determination are used to support this regulatory process.

3.2 California State and Regional Regulatory Framework

3.2.1 California Department of Fish and Wildlife

The California Department of Fish and Wildlife (CDFW) regulates activities that may substantially alter the bed, bank, or channel of rivers, streams, or lakes pursuant to Sections 1600–1607 of the California Fish and Game Code. This authority applies to perennial, intermittent, and ephemeral watercourses, as well as associated riparian habitats.

Projects that may result in such alterations require the submittal of a Lake and Streambed Alteration (LSA) Notification to CDFW. If CDFW determines that the activity may adversely affect fish or wildlife resources, an LSA Agreement must be executed prior to construction. CDFW also administers the California Endangered Species Act (CESA), which regulates the take of state-listed threatened and endangered species.

3.2.2 North Coast Regional Water Quality Control Board

The Study Area lies within the jurisdiction of the North Coast Regional Water Quality Control Board (RWQCB), Region 1, which enforces the Porter-Cologne Water Quality Control Act. Under Porter-Cologne, the RWQCB regulates discharges to "Waters of the State," defined broadly to include all surface and groundwater, including wetlands, regardless of whether they are subject to federal jurisdiction.

Discharges of dredged or fill material into waters of the State may require Waste Discharge Requirements (WDRs) or water quality certification under Section 401 of the Clean Water Act. The State Water Resources Control Board's State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (effective May 28, 2020) establishes standardized procedures for wetland delineation, impact assessment, and permitting. While the State Wetland Definition relies on the three-parameter method, it allows the State to assert jurisdiction over aquatic features that may not qualify as WOTUS.

3.3 Local Regulatory Framework and One-Parameter Wetlands

Although the Study Area is located outside the California Coastal Zone, wetlands within the McKinleyville area are subject to Humboldt County land use policies that apply a one-parameter wetland definition for planning and development review. Under this approach, the presence of any single wetland indicator—hydrophytic vegetation, hydric soils, or wetland hydrology—may be sufficient to classify an area as a wetland for local regulatory purposes.

As a result, features that may not meet federal or state three-parameter wetland criteria may still be considered wetlands under County jurisdiction and subject to development setbacks, avoidance requirements, or mitigation. Accordingly, this delineation evaluates wetland indicators using both federal and state methodologies, while also identifying areas that meet one-parameter wetland criteria relevant to County review.

The results of this delineation are intended to inform Humboldt County Planning review, identify potential regulatory constraints, and support future permitting and project design decisions.

Section 4 Methods

4.1 Pre-Site Visit Data Compilation and Preparation

Prior to conducting the field delineation, Mason London conducted a comprehensive desktop review to characterize existing site conditions and inform the scope and focus of the field investigation. Desktop review materials included recent and historic aerial imagery, topographic mapping, watershed boundaries, and Natural Resources Conservation Service (NRCS) soil survey data for the Study Area and surrounding landscape (Appendix A and Appendix B). In addition, available background information from prior site assessments, including the 2015 Streamline Planning upland clearance assessment and the 2020 SHN wetland delineation, was reviewed to identify areas previously evaluated and to define the portions of the site requiring additional delineation effort.

This review was used to identify areas with the potential to support wetlands or other aquatic resources based on geomorphic position, soil mapping units, drainage patterns, and land use history, with particular attention given to the eastern portion of APN 510-081-001 and the southeastern portion of APN 510-081-002 where prior delineation coverage was incomplete. The desktop analysis also informed expectations regarding the likely presence of one-parameter wetlands subject to local jurisdiction.

Prior to the site visit, the Study Area boundary and relevant background imagery were uploaded into the Avenza Maps mobile application and used in conjunction with a Skadi Global Navigation Satellite System (GNSS) receiver to facilitate navigation, data collection, and feature mapping during fieldwork.

Antecedent hydrologic conditions were evaluated prior to the field visit using the Wetland Ecosystem Technical Standard (WETS) table generated through the Antecedent Precipitation Tool (APT) version 2.0.0, developed jointly by the NRCS and the U.S. Army Corps of Engineers (Appendix C). The APT evaluates historical precipitation data from nearby weather stations to determine whether conditions during the period preceding the site visit were drier than normal, normal, or wetter than normal relative to long-term precipitation averages. This analysis provides important context for interpreting hydrologic indicators observed in the field. The region exhibits a strongly seasonal precipitation pattern, with the majority of annual rainfall occurring during the wet season (approximately October through April) and minimal precipitation during the dry season (approximately May through September).

Table 1. WETS Table Analysis for the December 5th, 2025 Survey

Precipitation Data from the Last 30 Years (1995 – 2025) [1]			Recent Field Conditions Compared to Precipitation Data from the Last 30 Years, and Analysis [1]					
Date	**30th Percentile (inches)**	**70th Percentile (inches)**	**Date**	**Recorded Rainfall (inches)**	**Rainfall Condition Compared to Previous 30 years [2]**	**Numeric Condition Value [3]**	**Weighting Factor [4]**	**Product of Condition Value and Weighting Factor [5]**
Dec	4.173228	7.682677	Dec 5 2025	3.334646	Dry	1	3	3
Nov	1.942913	3.940945	Nov 5 2025	5.401575	Wet	3	2	6
Oct	0.582283	1.180315	Oct 6 2025	1.708661	Wet	3	1	3
[1] All precipitation data is obtained from Weather Station: Arcata Eureka AP, McKinleyville 1.5 NE, McKinleyville 1.7 NE, McKinleyville 2.3 NE, Eureka WFO Woodley IS [2] Below 30th percentile = dry; between 30th and 70th percentile = normal; above 70th percentile = wet. [3] Relative rainfall conditions are then translated to a numeric condition value, as follows: dry = 1, normal = 2, wet = 3. [4] Greater weight is given to the most recent month as this would most likely influence what hydrologic or vegetative characteristics are observed. [5] The numeric condition value is then multiplied by the weighting factor, then the subtotals are added to get the total value. Total value equivalents: 6-9 = dry; 10-14 = normal; 15-18 = wet						**TOTAL [5]**	12, or Normal

4.2 Field Survey

A wetland and aquatic resources delineation of the Study Area was conducted on December 5, 2025, beginning at approximately 12:00 p.m., by NBC Principal Biologist Mason London. Weather conditions during the site visit were overcast, with an ambient temperature of approximately 56 degrees Fahrenheit. Field conditions were suitable for evaluating hydrologic indicators, soils, and general site characteristics.

During the site visit, Mr. London traversed accessible portions of the Study Area, with particular focus on the eastern portion of APN 510-081-001 and the southeastern portion of APN 510-081-002, which had not been fully evaluated during prior assessments. Field observations included evaluation of vegetation communities, soil characteristics, geomorphic setting, and hydrologic indicators consistent with established wetland delineation practices.

Wetland indicators were evaluated using the three-parameter approach outlined in the U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual (Environmental Laboratory, 1987) and the Western Mountains, Valleys, and Coast Regional Supplement (Version 2.0). In addition, because the Study Area is subject to local land use policies within McKinleyville that apply a one-parameter wetland definition, areas exhibiting hydrophytic vegetation, hydric soils, or wetland hydrology were also identified and documented for purposes of County review, regardless of federal jurisdiction.

Multiple delineation data points were established in representative locations across the Study Area to document site conditions. A total of four wetland delineation plots (P-1 through P-4) were evaluated to characterize vegetation, soils, hydrology, and geomorphic setting within areas of interest. These plots

were placed to capture variability in site conditions, particularly within portions of the Study Area that had not been previously delineated. Representative photographs were taken at each plot location to document observed habitat features, soils, and hydrologic indicators. Spatial data were collected using the Avenza Maps mobile application in conjunction with a Skadi Global Navigation Satellite System (GNSS) receiver to document the location and extent of observed wetland indicators and other aquatic features.

The delineation was conducted outside the typical flowering period for many plant species. As a result, vegetation assessments relied on observable structural characteristics, species that were identifiable at the time of the site visit, and supporting soil and hydrologic indicators. Where applicable, limitations related to seasonal timing are acknowledged, and delineation conclusions are based on the best available field evidence observed during the December site visit.

4.2.1 Soils

At each data point, soil profile pits were excavated using a rounded drain spade shovel, and an examination was conducted to identify positive hydric soil indicators. These indicators are characteristic features resulting from anaerobic conditions and persist in the soil during both saturated (reduced) and dry (oxidized) states within the upper 12 inches of soil. Examples include mottled color patterns from iron or manganese reduction and reoxidation, and the accumulation of organic matter due to saturated environments promoting slow decomposition rates. Hydric soil field indicators exhibit distinct morphologies due to the accumulation or loss of iron, manganese, sulfur, or carbon compounds in anaerobic conditions. These indicators include assessing features such as low matrix chromas, redox features, gleys, and the presence of iron and manganese concretions. Detailed records of soil color and texture encountered at each layer were documented on delineation forms. Soil color was determined using a Munsell soil color chart (Kollmorgen, 2000), while soil texture was assessed using a standardized chart endorsed by the California Native Plant Society (CNPS), adapted from Brewer and McCann (1982). Prior to assessment, all soil samples were moistened. Soil map units were cross-referenced with both the California hydric soils list (SCS, 1993) and the national hydric soils list (SCS, 1991). Determination of whether the hydric soil criterion was met followed guidelines outlined by the National Technical Committee for Hydric Soils and the 2010 Regional Supplement: Western Mountains, Valleys, and Coast Region (Version 2.0) (USACE, 2010). Typically, soils with a matrix chroma of 1, and mottled soils with a matrix chroma of 2 or less, are considered to meet hydric soil criteria. Additionally, soils not exhibiting low matrix chromas but experiencing inundation or saturation within 12 inches of the surface for at least 5 percent of the growing season (14 consecutive days) are also classified as hydric.

4.2.2 Hydrology

Indicators of wetland hydrology were noted at each data point, such as the presence of surface water, surface soil cracks, saturated soil, water-stained vegetation, drainage patterns, and sediment deposits. Hydrological connectivity was investigated throughout the study area and surrounding habitats. Although wetland hydrology indicators are important in delineating wetlands, they are the least credible compared to soil and vegetation indicators due to variability of seasonal and local weather patterns that influence hydrology. Wetland hydrology exists at a site when it is flooded (A1), ponded (A1), or has groundwater within 12 inches of the ground surface (A2) for 14 or more consecutive days during the growing season in at least 5 out of 10 years. Wetland hydrology is the most seasonal and transitory of the three

parameters. The USACE manual describes primary and secondary wetland hydrology "Indicators" that allow delineators to evaluate hydrology throughout the growing season, even late in the dry season when saturation in the upper part of the soil may no longer be present. Examples of primary indicators include surface water (A1), a high-water table (A2) (groundwater within 12 inches of soil surface), saturated soil (A3), oxidized iron along live root channels or on live root surfaces (C3), sparsely vegetated concave surfaces (B8), water-stained leaves (B9), sediment deposits (B2), stunted vegetation or stressed plants (D1) or drainage patterns (B10). Examples of secondary indicators include presence of a "dry season water table" between 12 and 24 inches below the ground surface (C2), a shallow aquitard (D3), a dense layer within 24 inches of the soil surface, the FAC Neutral Test (D5), and "geomorphic position" (D2) of the site (e.g., toe slopes, drainageways, depressions, and swales). The presence of one primary or two secondary indicators confirms wetland hydrology.

The delineation was conducted during and throughout the wet season with "normal" precipitation and therefore normal potential wetland conditions (Table 1).

4.2.3 Vegetation

At each delineation data point, all herbaceous plant species within a five-foot radius were identified and a visual estimate of percent coverage for each species was recorded. Additionally, shrub species, when present, were identified within a five-foot radius, and trees species, when present, were identified within a twenty-five-foot radius at all delineation data points. Plant species cover estimations were calibrated using CNPS percent cover templates – see the following website:

http://www.cnps.org/cnps/vegetation/pdf/percent_cover_diag-cnps.pdf.

The indicator status of each species was then checked using the most recent USACE National Wetland Plant List—Version 3.5 (USACE, 2020).

Indicator status categories are as follows:

- OBL = obligate wetland; >99% probability of occurring in a wetland
- FACW = facultative wetland; 67%-99% probability of occurring in a wetland
- FAC = facultative; 33%-67% probability of occurring in a wetland
- FACU = facultative upland; 1%-33% probability of occurring in a wetland
- UPL = obligate upland; <1% probability of occurring in a wetland
- NI = no indicator (plants not listed in the 2020 ACOE National Wetland Plant List—Version 3.5)

The wetland vegetation criterion is met when the dominant plants pass the dominance test, showing that over 50 percent of these species are designated as OBL, FACW, or FAC wetland indicators. Dominant plant species collectively account for 50 percent of the total cover within their stratum (tree, sapling/shrub/subshrub, herb, or woody vine), listed in descending order of percent cover. Additionally, any species with at least 20 percent coverage within a stratum are always considered dominant. Plant names follow Baldwin et al. (2012) and/or the Calflora database (2019). If the dominance test is not met, vegetation may still be considered hydrophytic if it meets the prevalence index, morphological adaptations, or addresses problematic wetland situations (USACE 2008).

Section 5 Results

5.1 Aquatic Resources

A wetland and aquatic resources delineation was conducted on December 5, 2025, by Principal Biologist Mason London of Naiad Biological Consulting. Four delineation plots (P1–P4) were established within the Study Area to evaluate the presence or absence of wetlands and other aquatic resources potentially subject to federal, state, or local jurisdiction (Figure 3; Photos 1–8; Appendix D). The delineation was conducted using the Routine Determination Method outlined in the 1987 U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual and the Western Mountains, Valleys, and Coast Regional Supplement (Version 2.0).

Plot sizes were stratified by vegetation layer and selected to be appropriate for site conditions and vegetation structure observed in the field. The herbaceous stratum was evaluated within 5-meter radius plots, and shrub cover was documented where present. No tree stratum was present within most plots due to the pasture setting. These plot dimensions allowed for representative sampling of site conditions while avoiding inclusion of adjacent, uncharacteristic habitat.

Several species observed during the delineation, including *Spergula arvensis* and other non-native pasture species, were assigned appropriate indicator statuses based on the current National Wetland Plant List for the Western Mountains, Valleys, and Coast Region. Species not listed were evaluated based on regional ecology and site context and did not influence hydrophytic vegetation determinations.

5.1.1 Watercourses

No watercourses, springs, seeps, or other surface hydrology features were observed within the Study Area during the December 5, 2025 site visit. No defined channels, bed and bank features, sediment transport indicators, or scour features were present within the delineation area.

A shallow topographic low within the pasture was evaluated to determine whether it functioned as a watercourse or wetland feature. Field observations indicated no channel morphology, no evidence of concentrated flow, and no indicators of episodic or seasonal runoff. Vegetation within this area was consistent with surrounding pasture and showed no signs of hydrologic stress or disturbance.

Based on field indicators, no features within the Study Area met the criteria for a watercourse under California Department of Fish and Wildlife (CDFW) jurisdiction, the USACE definition of Waters of the United States, or County stream protection policies.



Figure 3. Aerial view of the Study Area showing Assessor's Parcel Numbers 510-081-001-000 and 510-081-002-000 in McKinleyville, Humboldt County, California. The map depicts parcel boundaries, locations of four wetland delineation plots (P1–P4), and areas evaluated as part of the current delineation effort. All delineation plots shown were determined to be non-wetland based on field observations conducted on December 5, 2025.

5.1.2 Wetlands

Four delineation plots (P1–P4) were established across the Study Area to evaluate the three wetland indicators: hydrophytic vegetation, hydric soils, and wetland hydrology (Photos 1–8). Plot locations were selected to capture representative site conditions across flat pasture areas and subtle topographic variation.

Plots P1, P2, and P3 were located within flat, historically mowed and lightly tilled pasture areas. Plot P4 was located in a pasture area containing limited shrub cover (in the form of encroaching and sprouting *Rosa californica* along the pastures edge) but otherwise similar soil and hydrologic conditions. None of the plots met the criteria for wetlands under the USACE three-parameter approach or under the County's one-parameter wetland definition.

Table 2. Wetland Plot Summary (Datasheets Provided in Appendix D)

Plot	Soils	Hydrology	Vegetation	Wetland Status
P1	-	-	-	Non-Wetland
P2	-	-	-	Non-Wetland
P3	-	-	-	Non-Wetland
P4	-	-	-	Non-Wetland

5.1.2.1 Soils

Soils within the Study Area are mapped by the Natural Resources Conservation Service (NRCS) as Soil Map Unit 225, consisting primarily of Arcata and Candy Mountain soils. These soils occur in low-relief coastal terrace and pasture settings and are classified as well-drained, non-hydric soils. Field observations at all delineation plots were consistent with the mapped soil conditions and did not indicate the presence of hydric soil components.

Soil profiles were examined at each delineation plot to depths of up to approximately 18 inches, where feasible, to evaluate the presence or absence of hydric soil indicators in accordance with U.S. Army Corps of Engineers wetland delineation methodology.

- **Plot P1** was located within a flat, actively managed pasture area exhibiting evidence of light tilling and mowing. Soils at this location consisted of loam in the upper approximately 11 inches, transitioning to loam and silty clay at depth. The surface horizon exhibited a dark matrix color (7.5YR 2.5/1); however, redoximorphic features were observed only below approximately 20 centimeters and did not occur within a depleted matrix. No gleying, oxidized rhizospheres, or saturation indicators were present within the upper soil profile. Based on these observations, no hydric soil indicators were met at P1.
- **Plot P2**, also located within a flat pasture setting, exhibited sandy loam soils throughout the profile to approximately 18 inches. The soil matrix was uniform (7.5YR 2.5/1) with no redox concentrations, depletions, or other hydric soil indicators observed. No restrictive layers or evidence of prolonged saturation were present.
- **Plot P3**, positioned within a subtle topographic low, was excavated to a depth of approximately 18 inches and exhibited a uniform sandy loam profile throughout. The soil matrix color remained consistent, with no gleying, depleted matrices, redoximorphic features, or saturation indicators

observed. Although this plot occupies a slightly lower geomorphic position, the absence of hydric soil indicators suggests that any hydrologic expression at this location is brief and insufficient to support hydric soil development.

- **Plot P4** was located on a gently sloping pasture area with limited shrub cover. Soils at this plot exhibited a dark surface horizon (7.5YR 2.5/1); however, no redoximorphic features were present within the upper portion of the profile, and the criteria for the F7 (Depleted Dark Surface) hydric soil indicator were not met. No other hydric soil indicators were observed.

In summary, none of the delineation plots (P1–P4) exhibited hydric soil indicators. Hydric soils were therefore determined to be absent within the Study Area.

5.1.2.2 Hydrology

No indicators of wetland hydrology were observed at any delineation plot during the December 5, 2025 site visit. Specifically, no surface water, soil saturation, water table, water-stained leaves, oxidized rhizospheres, iron deposits, or other primary or secondary hydrology indicators were present.

Antecedent precipitation conditions preceding the site visit were evaluated using the Antecedent Precipitation Tool (APT) and indicated seasonally appropriate conditions for the time of year. Despite winter timing, no hydrologic expression sufficient to support wetland conditions was observed.

As such, wetland hydrology was determined to be absent at all four delineation plots.

5.1.2.3 Vegetation

Vegetation across the Study Area consists of disturbed, non-native pasture dominated by upland and facultative upland herbaceous species. According to the landowner, the site has been historically managed as pasture and has been periodically mowed, tilled, and seeded with a commercial pasture seed mix (Bardenbrug Pasture Mix). Field observations during the December 5, 2025 site visit were consistent with this management history and seed composition.

Vegetation within all delineation plots (P1–P4) was characterized by dense, uniform herbaceous cover dominated by common pasture grasses and forbs, including *Schedonorus pratensis*, *Bromus* spp., *Agrostis stolonifera*, *Hypochaeris radicata*, *Rumex acetosella*, and *Lotus corniculatus*. These species are typical components of managed pasture systems and are well adapted to periodic disturbance, mowing, and soil turnover. The dominance of these species, coupled with the absence of wetland obligate or facultative wetland dominants, is indicative of upland pasture conditions rather than wetland plant communities.

The delineation was conducted outside of the peak growing and flowering season, which limited the ability to positively identify all species present within the Study Area. Vegetation assessments therefore focused on species that were identifiable at the time of the site visit, overall community composition, dominance structure, and supporting soil and hydrologic indicators. Despite these seasonal limitations, the observed species composition, dominance patterns, and prevalence metrics were sufficient to evaluate wetland indicators.

At all delineation plots (P1–P4), the Dominance Test was not met, and calculated Prevalence Index values ranged from approximately 3.7 to 4.1, exceeding the ≤3.01 threshold required to support a hydrophytic vegetation determination. Although individual facultative species such as *Agrostis stolonifera*

and *Ranunculus repens* were present, these species occurred in association with upland and facultative upland dominants and are commonly included in pasture seed mixes or occur as secondary species in managed grasslands. Their presence does not indicate hydrophytic vegetation in the absence of hydric soils or wetland hydrology.

Overall, the vegetation observed within the Study Area reflects a long-standing, actively managed pasture system. Based on species composition, dominance structure, and supporting field indicators, hydrophytic vegetation was determined to be absent across the Study Area, including under local one-parameter wetland evaluation criteria.

Section 6 Conclusions, Discussion, and Recommendations

6.1 Conclusions

Based on the results of the field survey conducted on December 5, 2025, and review of supporting desktop data, no wetlands or other jurisdictional aquatic features were identified within the portion of the Study Area requiring additional delineation effort, including the eastern portion of APN 510-081-001 and the southeastern portion of APN 510-081-002. Wetland indicators were evaluated using the U.S. Army Corps of Engineers (USACE) three-parameter methodology, as well as local County land use policies that apply a one-parameter wetland definition within the McKinleyville area.

All four delineation plots (P1–P4), which were strategically located within the areas not previously evaluated, failed to meet the minimum thresholds for wetland identification under both federal and local criteria (Figure 3):

- Hydrophytic vegetation was not present at any plot, based on Dominance Test results and Prevalence Index values exceeding hydrophytic thresholds.
- Hydric soils were absent across the delineation focus area, with no observed indicators such as depleted matrices, gleying, or redoximorphic features meeting hydric criteria.
- Wetland hydrology was not observed or inferred at any plot, and no primary or secondary hydrology indicators were present at the time of the survey.

Although the delineation was conducted outside of the peak growing and flowering season, sufficient vegetation, soil, and hydrologic indicators were observable to support a reliable wetland determination. The collective results indicate that no portion of the delineation focus area qualifies as a wetland under USACE criteria, state water quality regulations, or Humboldt County's one-parameter wetland evaluation approach.

6.2 Discussion

The results of this delineation address prior concerns regarding the potential presence of wetlands or aquatic features within portions of the site that had not been fully evaluated during earlier studies. The four delineation plots (P1 – P4) were strategically located to capture representative conditions across flat pasture areas, subtle topographic variation, and managed upland settings.

Vegetation throughout the Study Area reflects a long-standing history of pasture management. The landowner indicated that the site has been historically mowed, tilled, and seeded with a commercial pasture mix (Bardenbrug Pasture Mix). Observed species composition and dominance patterns were consistent with this management history and included common upland and facultative upland pasture species. While some facultative species were present, they occurred within a disturbed pasture matrix and did not form hydrophytic plant communities.

Soils across the Study Area were consistent with the mapped Arcata and Candy Mountain soil series, which are well drained and non-hydric. Field observations confirmed the absence of hydric soil development, even in lower topographic positions. Similarly, no indicators of wetland hydrology were observed, despite winter-season timing when hydrologic expression would be most likely if wetland conditions were present.

Taken together, the absence of hydrophytic vegetation, hydric soils, and wetland hydrology across all plots indicates that wetland conditions are not present within the Study Area. Based on site conditions, land use history, and field observations, it is unlikely that undetected wetlands occur elsewhere within the delineation area under existing conditions.

6.3 Recommendations

Based on the findings of this delineation, the following recommendations are provided:

1. **Proceed with County Planning Review:**

   The delineation confirms the absence of wetlands subject to federal, state, or County jurisdiction within the Study Area. This report should be provided to Humboldt County Planning to support project review and to document that no wetland setbacks, buffers, or mitigation measures are required.

2. **No Additional Delineation Recommended Under Current Conditions:**

   Provided that site conditions remain substantially unchanged, no further wetland delineation is recommended. If significant grading, drainage modification, or changes in vegetation management occur prior to project implementation, a supplemental site review may be warranted.

3. **Retain Delineation Documentation:**

   It is recommended that the applicant retain this delineation report, associated data forms, and mapping in project records to address any future questions related to wetland status or regulatory compliance.

4. **Monitor for Unanticipated Features:**

   If previously unobserved features such as persistent standing water, seeps, or saturated depressions are identified during future site activities, consultation with Humboldt County or a qualified biologist is recommended to determine whether additional evaluation is necessary.

6.4 Conditions and Limitations

This delineation report represents the professional judgment of the preparer based on site conditions observed on **December 5, 2025**, available background information, and applicable regulatory guidance in effect at the time of the survey. The delineation was conducted during the winter season, outside the peak growing and flowering period for many plant species. As a result, not all plant species present within the Study Area could be positively identified to species level at the time of the site visit. Vegetation determinations therefore relied on identifiable species, overall community composition, dominance structure, and supporting soil and hydrologic indicators.

Despite seasonal limitations, field conditions were adequate to evaluate wetland indicators, particularly soils and hydrology, which are less dependent on flowering phenology. The absence of hydric soils, wetland hydrology, and hydrophytic vegetation dominance across the delineation focus area supports the conclusions presented in this report. However, changes in vegetation, soils, hydrology, land use, or topography—whether due to natural processes or human activities—may affect the presence or expression of wetland indicators and could alter regulatory determinations.

This report does not constitute a formal jurisdictional determination by the U.S. Army Corps of Engineers or any other regulatory agency. Final determinations regarding wetland jurisdiction remain the responsibility of the appropriate permitting authorities. The applicant is responsible for submitting this delineation to relevant agencies as required and for ensuring compliance with all applicable local, state, and federal laws and regulations.

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Section 7 References

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U.S. Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers (USACE). 2008. *Compensatory Mitigation for Losses of Aquatic Resources; Final Rule*. Federal Register 73(70):19594–19705.

U.S. Geological Survey (USGS). 2024. *USGS National Map Viewer*. Available at: https://apps.nationalmap.gov.

Western Regional Climate Center (WRCC). 2025. *Antecedent Precipitation Tool (APT)*. U.S. Army Corps of Engineers Regulatory Program. Available at: https://www.wcc.nrcs.usda.gov. Accessed June 2025.

Photo Documentation



Photo 2. P1 Location.



Photo 1. P1 Soil Profile.



Photo 4. P2 Location.



Photo 3. P2 Soil Profile.

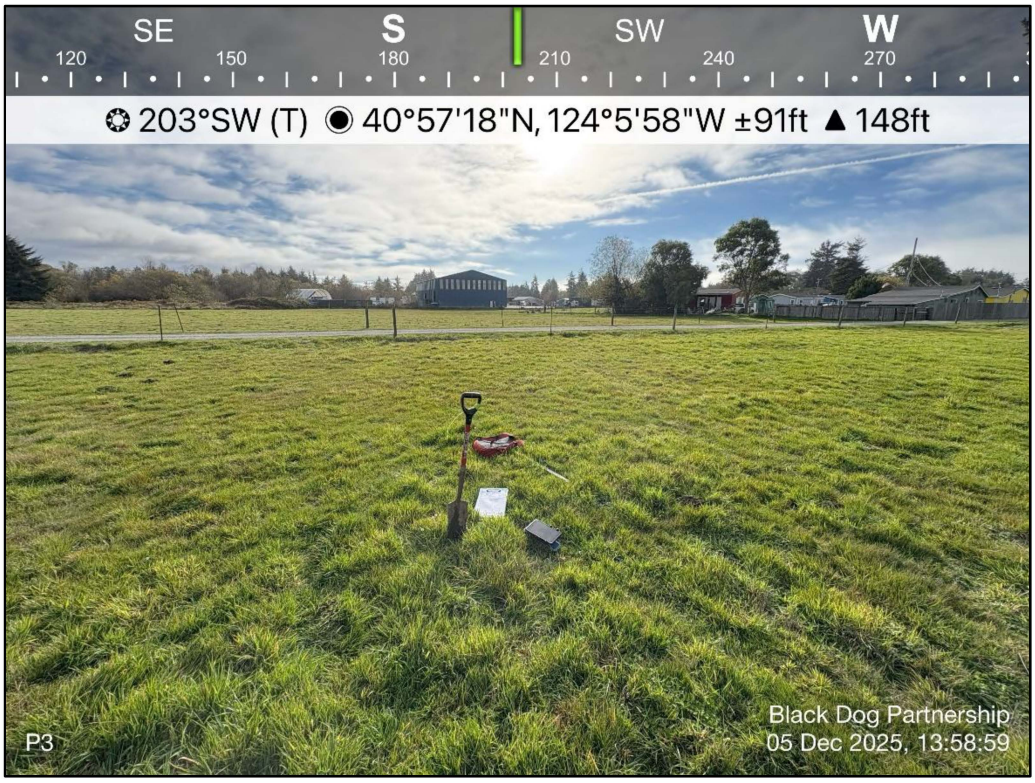


Photo 6. P3 Location.



Photo 5. P3 Soil Profile.



Photo 7. P4 Location.



Photo 8. P4 Soil Profile.

Appendix A

Web Soil Survey Map and Report

AQUATIC RESOURCES DELINEATION

2725 & 2707 Central Ave, McKinleyville, 95519, Humboldt County, CA

Assessor Parcel Number (APN):

510-081-002-000 & 510-081-001-000

January 2026

Naiad
Biological
Consulting



Map Scale: 1:1,350 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Humboldt County, Central Part, California
Survey Area Data: Version 12, Sep 5, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 1, 2022—Jun 19, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
225	Arcata and Candymountain soils, 0 to 2 percent slopes	8.1	100.0%
Totals for Area of Interest		**8.1**	**100.0%**

Humboldt County, Central Part, California

225—Arcata and Candymountain soils, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2lmt0
Elevation: 10 to 290 feet
Mean annual precipitation: 35 to 90 inches
Mean annual air temperature: 52 to 55 degrees F
Frost-free period: 275 to 325 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Arcata and similar soils: 50 percent
Candymountain and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Arcata

Setting

Landform: Marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Marine deposits derived from mixed

Typical profile

A - 0 to 23 inches: fine sandy loam
AB - 23 to 37 inches: very fine sandy loam
Bw - 37 to 51 inches: fine sandy loam
C - 51 to 67 inches: fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 2s

Hydrologic Soil Group: B
Ecological site: F004BX121CA - Redwood-Sitka spruce/salal-California huckleberry/western swordfern, marine terraces, marine deposits, sandy loam and loam
Hydric soil rating: No

Description of Candymountain

Setting

Landform: Marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Marine deposits derived from mixed

Typical profile

A1 - 0 to 11 inches: fine sandy loam
A2 - 11 to 19 inches: fine sandy loam
Bt1 - 19 to 38 inches: fine sandy loam
Bt2 - 38 to 48 inches: fine sandy loam
BCt - 48 to 55 inches: sandy loam
C - 55 to 63 inches: loamy fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: B
Ecological site: F004BX121CA - Redwood-Sitka spruce/salal-California huckleberry/western swordfern, marine terraces, marine deposits, sandy loam and loam
Hydric soil rating: No

Minor Components

Urban land, residential

Percent of map unit: 4 percent
Landform: Marine terraces
Hydric soil rating: No

Timmons

Percent of map unit: 3 percent
Landform: Marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F004BX121CA - Redwood-Sitka spruce/salal-California huckleberry/western swordfern, marine terraces, marine deposits, sandy loam and loam
Hydric soil rating: No

Halfbluff

Percent of map unit: 3 percent
Landform: Marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F004BX118CA - Sitka spruce-redwood/salal/western brackenfern, marine terraces, marine deposits, fine sandy loam
Hydric soil rating: No

Megwil,

Percent of map unit: 3 percent
Landform: Marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F004BX120CA - Redwood-Sitka spruce/California huckleberry-salmonberry/western swordfern-deer fern, marine terraces, loam
Hydric soil rating: No

Talawa

Percent of map unit: 2 percent
Landform: Marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Humboldt County, Central Part, California
Survey Area Data: Version 12, Sep 5, 2025

Appendix B

National Wetland Mapper

AQUATIC RESOURCES DELINEATION

2725 & 2707 Central Ave, McKinleyville, 95519, Humboldt County, CA

Assessor Parcel Number (APN):

510-081-002-000 & 510-081-001-000

January 2026

Naiad
Biological
Consulting

U.S. Fish and Wildlife Service
National Wetlands Inventory

Wetlands



January 7, 2026

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Appendix C

Antecedent Precipitation Tool Graph

AQUATIC RESOURCES DELINEATION

2725 & 2707 Central Ave, McKinleyville, 95519, Humboldt County, CA

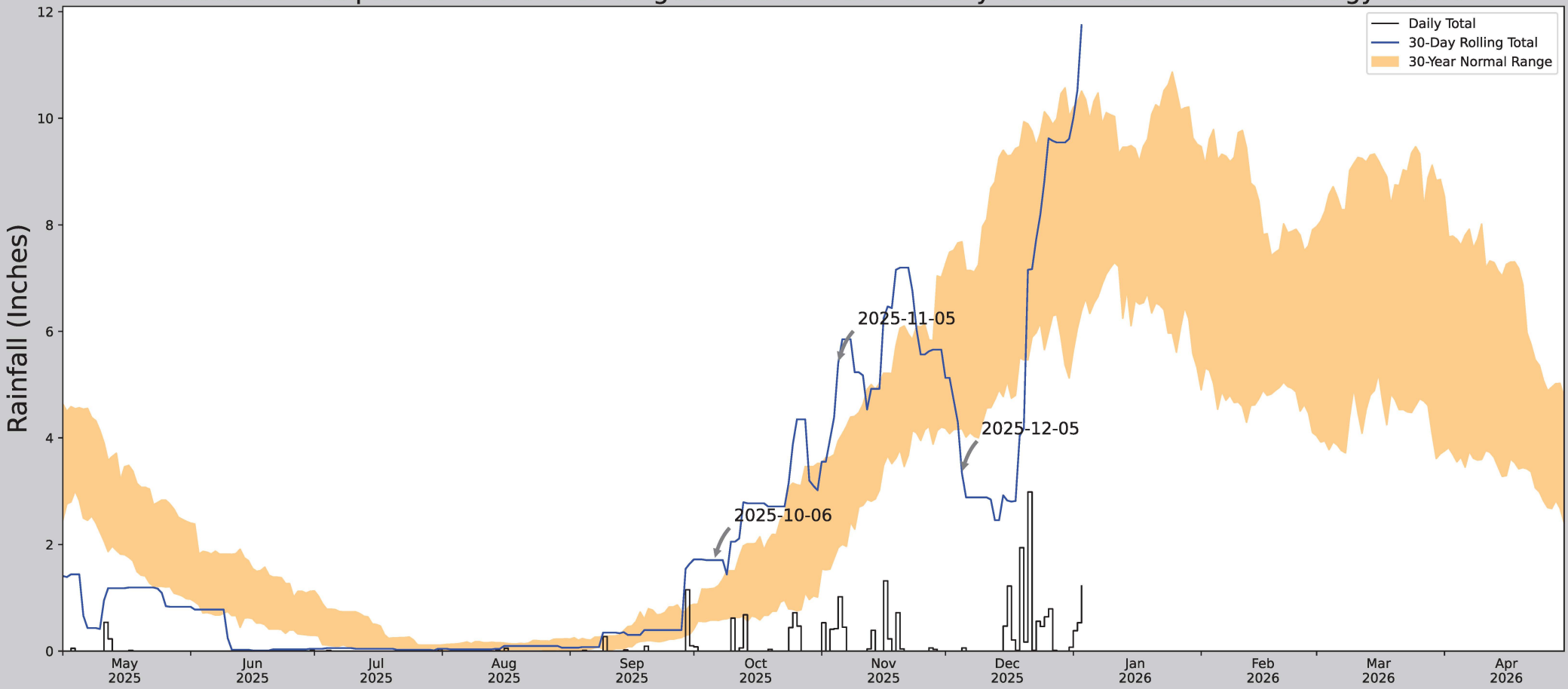
Assessor Parcel Number (APN):

510-081-002-000 & 510-081-001-000

January 2026

Naiad Biological Consulting

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	40.95443, -124.09858
Observation Date	2025-12-05
Elevation (ft)	114.953
Drought Index (PDSI)	Mild drought (2025-11)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2025-12-05	4.173228	7.682677	3.334646	Dry	1	3	3
2025-11-05	1.942913	3.940945	5.401575	Wet	3	2	6
2025-10-06	0.582283	1.180315	1.708661	Wet	3	1	3
Result							Normal Conditions - 12

Figures and tables made by the Antecedent Precipitation Tool Version 3.0

US Army Corps of Engineers.
ERDC

Developed by:
U.S. Army Corps of Engineers and
U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
ARCATA EUREKA AP	40.9783, -124.1047	210.958	1.68	96.005	0.917	10068	89
MCKINLEYVILLE 1.5 NE	40.9667, -124.0941	252.953	0.974	41.995	0.479	2	0
MCKINLEYVILLE 1.7 NE	40.9688, -124.0906	259.843	0.986	48.885	0.492	1	0
MCKINLEYVILLE 2.3 NE	40.9778, -124.086	270.013	0.976	59.055	0.497	2	1
EUREKA WFO WOODLEY IS	40.8097, -124.1603	20.013	12.006	190.945	7.695	1280	0

Appendix D

Wetland Determination Data Forms

AQUATIC RESOURCES DELINEATION

2725 & 2707 Central Ave, McKinleyville, 95519, Humboldt County, CA

Assessor Parcel Number (APN):

510-081-002-000 & 510-081-001-000

January 2026

Naiad
Biological
Consulting

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Black Dog Partnership City/County: Mckinleyville Hum Co. Sampling Date: 12/5/25

Applicant/Owner: Keith Jenkins State: CA Sampling Point: P1

Investigator(s): Mason London Section, Township, Range: S32, T7N, R1E HB&M

Landform (hillslope, terrace, etc.): Pasture Local relief (concave, convex, none): None Slope (%): —

Subregion (LRR): LRR-A Lat: 40.954694 Long: -124.098836 Datum: WGS84

Soil Map Unit Name: 225 - Arcata and Candy Mountain Soils NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil X, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: mowed & tilled historically.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5)			
1. Agrostis stolonifera	15	No	FAC
2. Schedonorus pratensis	25	Yes	FACU
3. Bromus inermis	25	Yes	UPL
4. Carex obnupta.	1	No	OBL
5. Hypochaeris radicata	20	Yes	FACU
6. Ranunculus repens	5	No	FAC
7. Rumex acetosella.	2	No	FACU
8. Lotus corniculatus	2	No	FAC
9.			
10.			
11.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1. Rubus bifrons	1	No	NI
2.			
	1 = Total Cover		

% Bare Ground in Herb Stratum: ~5

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0/3 = 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	1	x 1 =	1
FACW species		x 2 =	
FAC species	32	x 3 =	96
FACU species	47	x 4 =	188
UPL species	25	x 5 =	125
Column Totals:	95 (A)		355 (B)

Prevalence Index = B/A = 380/95 = 3.74

Hydrophytic Vegetation Indicators:

__ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ 5 - Wetland Non-Vascular Plants[1]

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: R. bifrons not dominate due to not enough. (ie <5%)

SOIL

Sampling Point: P1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-11	7.5YR 2.5/1	100%					Loam	
11-15	7.5YR 2.5/1	95%	10YR 5/6	5%	C	M	Loam	
15-18	7.5YR 2.5/1	50%	10YR 5/6	30%	C	M	Silty clay	
15-18	7.5YR 2.5/1	50%	10YR 6/8	20%	C	M	Silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: NA

Depth (inches): NA

Hydric Soil Present? Yes ___ No X

Remarks:

- Does not meet F6 because no redox occurs in the dark surface layer and redox appears only below 20 cm.
- A11 is not met because the layer beneath the dark surface lacks depleted matrix

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (LRR A)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (LRR A)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Black Dog Partnership City/County: McKinleyville HumCo Sampling Date: 12/5/25

Applicant/Owner: Kevin Jenkins State: CA Sampling Point: P2

Investigator(s): Mason London Section, Township, Range: S32, T7N, R1E, HB&M

Landform (hillslope, terrace, etc.): pasture Local relief (concave, convex, none): More Slope (%): —

Subregion (LRR): LRR-A Lat: 40.954641 Long: -124.098477 Datum: WGS84

Soil Map Unit Name: 225 - Arcata and Candy Mountain Soils NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil X, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	
Hydric Soil Present?	Yes ____	No X	Is the Sampled Area within a Wetland? Yes ____ No X
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

Mowed & tilled historically

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5)			
1. Schedonorus pratensis	30	Yes	FACU
2. Bromus inermis	30	Yes	UPL
3. Agrostis stolonifera	25	Yes	FAC
4. Lotus corniculatus	10	No	FAC
5. Rumex acetosella	5	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1/3 = 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	—	x 1 =	
FACW species	—	x 2 =	
FAC species	35	x 3 =	105
FACU species	35	x 4 =	140
UPL species	30	x 5 =	150
Column Totals:	100 (A)		395 (B)

Prevalence Index = B/A = 395/100 3.95

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

SOIL

Sampling Point: P2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	7.5YR 2.5/1	100					Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: NA

Depth (inches): NA

Hydric Soil Present? Yes _____ No X

Remarks:

No redox all dark sandy loam

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

NA

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Black Dog Partnership City/County: Mckville Humco. Sampling Date: 12/5/25
Applicant/Owner: Kevin Jenkins State: CA Sampling Point: P3
Investigator(s): Mason London Section, Township, Range: S32, T7N, R1E, HB&M
Landform (hillslope, terrace, etc.): pasture Local relief (concave, convex, none): None Slope (%): —
Subregion (LRR): LRR-A Lat: 40.954419 Long: -124.098667 Datum: WGS84
Soil Map Unit Name: 225- Arcata and Candy Mountain Soils. NWI classification: NA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation X, Soil X, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No X
Hydric Soil Present? Yes _____ No X
Wetland Hydrology Present? Yes _____ No X
Is the Sampled Area within a Wetland? Yes _____ No X

Remarks:
Mowed & tilled historically

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5)			
1. Schedonorus pratensis	40	Yes	FACU
2. Bromus inermis	30	Yes	UPL
3. Agrostis stolonifera	10	NO	FAC
4. Hypochaeris radicata	10	NO	FACU
5. Rumex acetosella	5	NO	FACU
6. Ranunculus repens	10	NO	FAC
7. Lotus corniculatus	2	NO	FAC
8. Spergula arvensis	1	NO	NI
9.			
10.			
11.			
	108 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	_____ = Total Cover		
% Bare Ground in Herb Stratum 0			

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0/2 = 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species 22	x 3 =	66
FACU species 55	x 4 =	220
UPL species 30	x 5 =	150
Column Totals: 107 (A)		436 (B)

Prevalence Index = B/A = 436/107 4.07

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:
NA

SOIL

Sampling Point: P3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	7.5YR 2.5/1	100					Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: NA

Depth (inches): NA

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

None

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Black Dog Partnership City/County: Melville Humco. Sampling Date: 12/5/25

Applicant/Owner: Kevin Tenkins State: CA Sampling Point: PY

Investigator(s): Mason London Section, Township, Range: S32, T7N, R1E HB&M

Landform (hillslope, terrace, etc.): Pasture Local relief (concave, convex, none): None. Slope (%): —

Subregion (LRR): LRR-A Lat: 40.954356 Long: -124.098442 Datum: WGS 84

Soil Map Unit Name: 225- Arcata and Candy Mountain Soils NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil X, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

Mowed & tilled historically

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	X = Total Cover		
Sapling/Shrub Stratum (Plot size: 30)			
1. Rosa California	10	Yes	FAC
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: 5)			
1. Schedonorus prantensis	50	Yes	FACU
2. Bromus inermis	25	Yes	UPL
3. Agrostis stolonifera.	15	NO	FAC
4. Ranunculus repens.	10	NO	FAC
5. Lotus corniculatus.	5	NO	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	105 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	X = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1/3 = 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species 40	x 3 = 120
FACU species 50	x 4 = 200
UPL species 25	x 5 = 125
Column Totals: 115 (A)	445 (B)

Prevalence Index = B/A = 445/115 3.8

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

NA

SOIL

Sampling Point: P4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	7.5YR 2.5/1	100					Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: NA

Depth (inches): NA

Hydric Soil Present? Yes ____ No X

Remarks:

—

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ____ No ____ Depth (inches): ____

Water Table Present? Yes ____ No ____ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No ____ Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

—

Appendix E

Prior Wetland Delineation Data

AQUATIC RESOURCES DELINEATION

2725 & 2707 Central Ave, McKinleyville, 95519, Humboldt County, CA

Assessor Parcel Number (APN):

510-081-002-000 & 510-081-001-000

January 2026

Naiad Biological Consulting

1. INTRODUCTION

The Ace Hardware property in McKinleyville, CA was traversed by Streamline Planning staff on November 4, 2015 to ascertain the presence of upland habitat (non-wetland) suitable for residential development. This assessment was performed to determine the feasibility of a lot line adjustment. The area traversed lies in the eastern portion of the parcel currently designated APN 510-081-002, which is the northern of the two parcels on the Ace property. The entire property is located south of Murray Road and east of Central Avenue.

While a wetland was previously mapped in the south-central portion of the property, an apparent upland was scouted for wetland and upland characteristics in November. After an initial walk around the northeastern corner by Streamline Consulting staff, a transect was run from north to south along the center of the apparent upland area to ensure buildable residential land exists onsite (See aerial photo, Attachment 1). Along this transect, a primary and two secondary pits were dug and examined using the Army Corps three parameter approach to ascertain the presence of hydrophytic vegetation, hydric soils or wetland hydrology.

2. RESULTS AND DISCUSSION

The entire parcel is surrounded by residential development on the northern and eastern boundaries. The overall site topography rises toward the northeast, where patches of upland Spanish Heather combined with the elevated topography to make a logical site to search for uplands. The entire elevated portion of the site examined during this analysis exhibited none of the three Army Corps parameters. This elevated area appears as an overall subtle convex hump on the property, with non-native pasture grasses and forbs characteristic of upland pastures. Soils were relatively deep topsoil underlain by brightly mottles subsoils, too bright to classify as hydric. No indication of wetland hydrology was present, even after significant rainfall that filled the wetland near the barn.

The Data Form from Pit #1R has been included in this Assessment to show the characteristics typical of the upland examined on this site (Attachment 2). The upland area represented by this Data Form is outlined in yellow on Attachment 1, encompassing 52,080 square feet or 1.2 acres. The north-south length of the rectangle is 336 feet long, while the west-east width is 155 feet. This rectangle appears to be approximately 120 feet from the delineated wetland to the southwest, providing adequate buffer space. If development occurs, a wetland delineation between this assessed rectangle and the wetland near the barn can occur to ensure wetlands with subtle Army Corps parameters do not exist, and to determine how far the current upland polygon can be expanded while maintaining appropriate buffer space for the wetland by the barn.



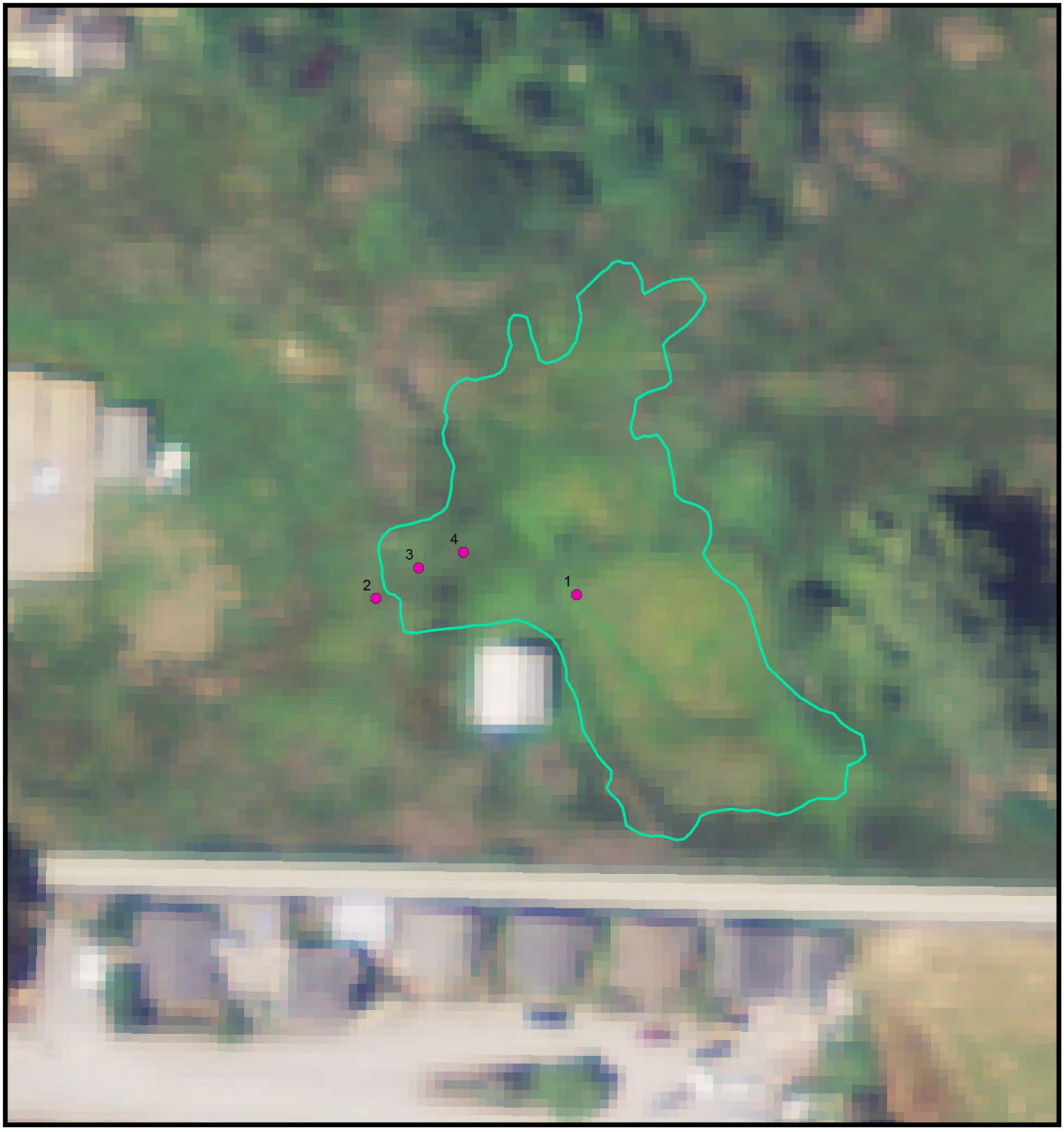
Google earth

feet 300
meters 100

Area delineated as upland for residential use

Secondary confirmation pit

Primary analysis pit



Pit Locations

Wetland Boundary

N

Map for display purposes only.
Caldwell 12/10/2013
Datum: NAD83 CA FIPS 1

ATTACHMENT 1

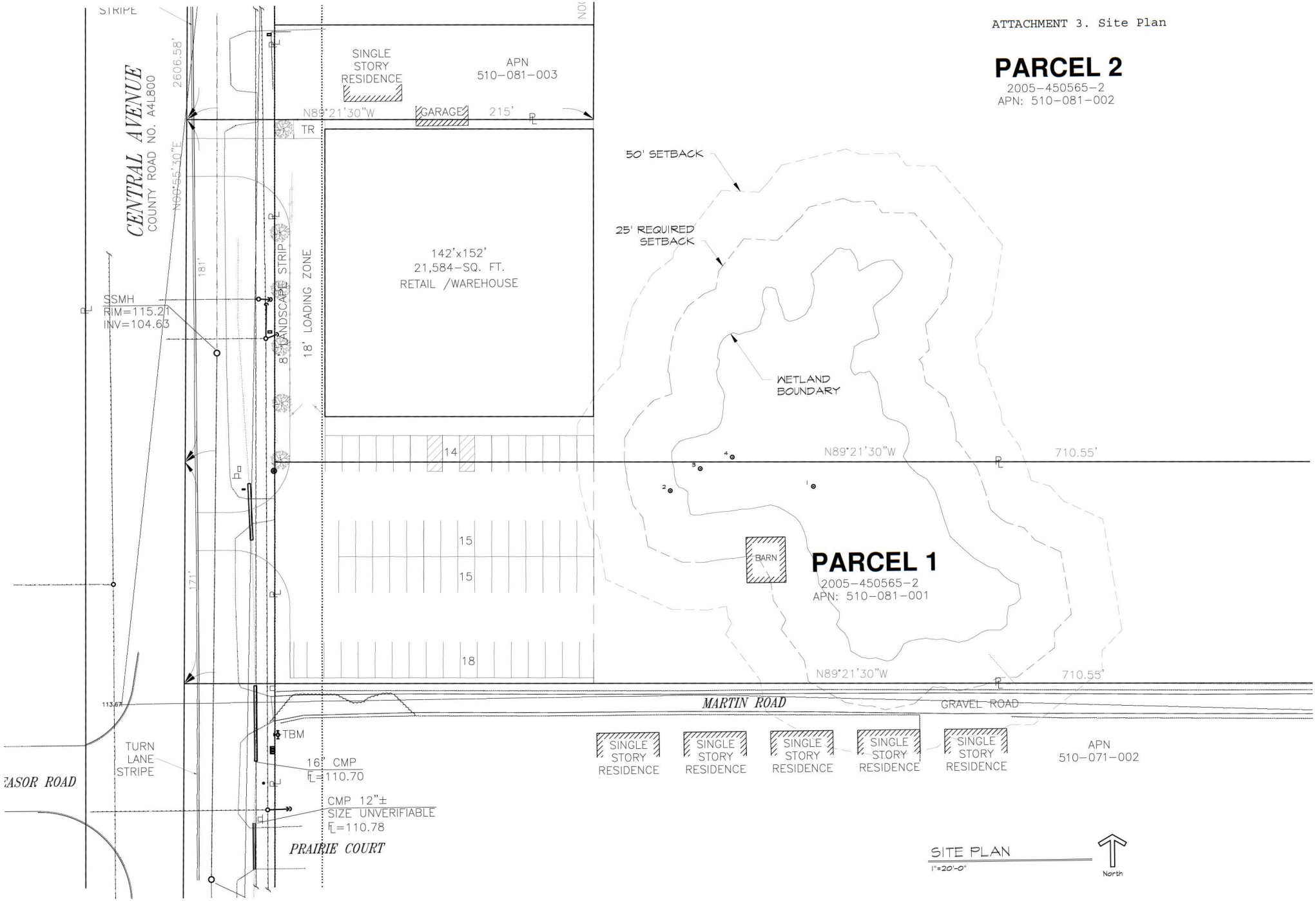
Jenkins Project
Wetland Delineation
2725 Central Avenue
McKinleyville, CA 95519

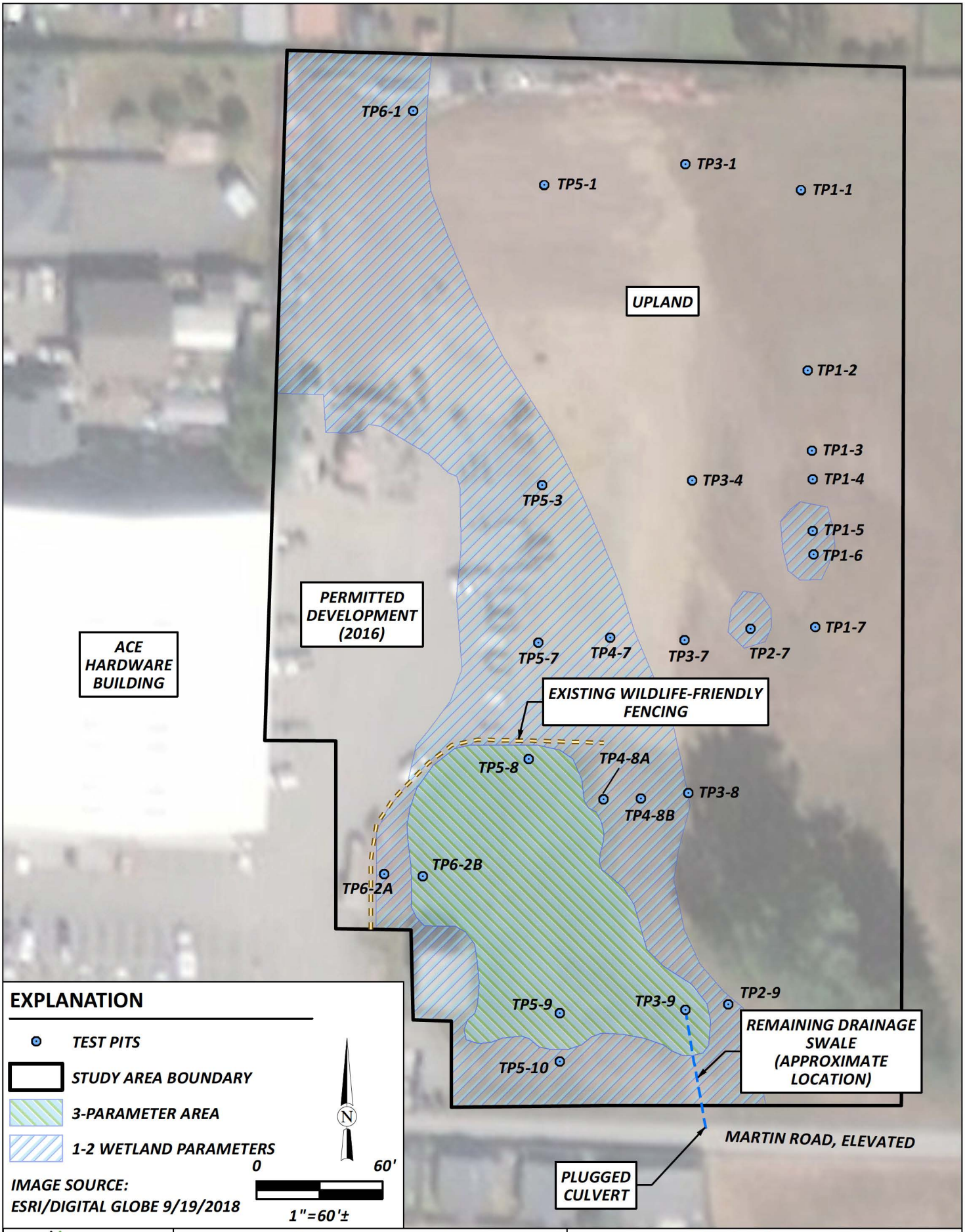
1 " = 50 ft

0 25 50

www.streamlineplanning.net
Streamline Planning Consultants
1062 G St. Suite I
Arcata, CA 95521
Tel: (707) 822-5785
Fax: (707) 822-5786

ATTACHMENT 3. Site Plan





Path: \\arcatasvr1\projects\GIS-Files\Eureka\2017\017257-Mknlyvlle-Ace\PROJ_MXD\WD_Fig2_WetlandDelineation.mxd User Name: hhummel DATE: 5/4/20, 1:12PM

SHN	Black Dog Partnership Wetland Delineation McKinleyville, California	Wetland Delineation Map APN 510-081-001 & 510-081-002 SHN 017257
	May 2020 | WD_Fig2_WetlandDelineation	Figure 2

Hohman & Associates
FORESTRY CONSULTANTS
P.O. Box 733, Hydesville, CA 95547 . (707) 768-3743 . (707) 768-3747 fax

Botanical Survey Report For:

General Plan Amendment, Zone Reclassification, Lot Line Adjustment and Special Permit

APN: 510-081-001, 510-081-002, 510-081-003
Humboldt County

Prepared for:
Black Dog Partnership

Prepared by:
Hohman and Associates

March 16th, 2026

Signature:  **Date: 03/16/2026**

Setting

The Black Dog Residential Development is located on APNs510-081-001, 510-081-002 & 510-081-003, located in Section 32, Township 7 North, Range 1 East; HB&M, approximately 400' south south-east of the Central Avenue and Murray Road intersection on the Arcata North USGS 7.5' Quad. The project area is in the Norton Creek Cal Watershed (1109.100200). There are no rivers, sloughs, creeks, springs on the property. The biogeographic region can be described using a three-tiered hierarchy of province, region and sub-region. This site lies within the California Floristic Province, Northwestern California region, and North Coast sub-region. The elevation of the project area is approximately 115 feet. The approximately 7.42 acre property is composed primarily of grassland dominated by non-native perennial and annual grasses such as orchard grass (*Dactylis glomerata*), velvet grass (*Holcus lanatus*), and sweet vanilla grass (*Anthoxanthum odoratum*). Additionally, 1.18 acres of wetland exist in the project area and are comprised of bentgrass (*Agrostis stolonifera*), Pacific cinquefoil (*Potentilla anserina*), and arroyo willow (*Salix lasiolepis*). The property contains one habitable structure, one commercial retail building, and two uninhabitable structures to be removed. The project area is predominately flat.

Methods

Late season botanical surveys were conducted by Mark Pera on September 19th, 2025, and early season botanical surveys were conducted by Mark Pera and Asher Budnik on March 16th, 2026.

Asher holds a B.S. in Forestry with and emphasis in Restoration from Humboldt State University. Asher has taken relevant courses in plant taxonomy, botany, soil science, as well as *Juncus* and *Carex* identification. Asher worked as a habitat restorationist in Humboldt County, conducting field inventories, writing restoration plans, and co-managing a seed collection program. He has 5 years of botany experience in the North Coast and Klamath Ecoregions. Mark has a B.S. in Forestry with a concentration in Resource Management from Cal Poly Humboldt. Mark has taken relevant courses including dendrology, general botany, and silviculture. Mark has 8 years of botany experience in Northern California.

The surveys were floristic in nature and seasonally appropriate, with a survey conducted during the spring to catch early blooming species and during the summer for late-blooming species. Surveys included systematic assessment of all potential habitats in the area based on maps, aerial photos, and visible environmental features such as canopy cover, slope, soil texture, aspect, hydrologic features, and associated vegetation. This survey protocol is based on the Protocol for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFW 2018). A list of potential threatened, endangered, rare, or limited distribution plants on CNPS lists 1 - 4 found within the 9 – quad area as listed in CNPS Rare Plant Inventory is available in Attachment A. Attachment B contains rare plant and habitat photos. Attachment C lists all plants identified from botanical surveys. Attachment D contains rare plant rank definitions. Attachment E contains multiple maps for reference, including a general location map, botanical survey map showing survey routes taken, a CALVEG map, as well as a CNDDB map showing proximity to historical rare plant populations. Attachment F contains a soil map of the project area.

Project Description

The Black Dog Residential Development is a proposed 0.8 acre expansion to parking and storage for the existing parking lot of Ace Hardware McKinleyville and associated mitigation measures as well as modification to lot line boundaries and zoning.

Results

No rare plants were observed during early and late season surveys of the project area. The property was composed of two primary habitats. The predominant habitat type located in the project area is best described as the *Holcus lanatus – Anthoxanthum odoratum* Herbaceous Semi-Natural Alliance (SNA), which comprises the majority of the field present in the site. Emergent Pacific blackberry (*Rubus ursinus*), English plantain (*Plantago lanceolata*), and sheepsorrel (*Rumex acetosella*) were present throughout the field. The wetland located in the Southwest corner of the project area is best described as the *Potentilla anserina – Eleocharis macrostachya* Association (S3). This wetland is characterized by the presence of silver cinquefoil (*Potentilla anserina*), bentgrass (*Agrostis stolonifera*), and common spikerush (*Eleocharis macrostachya*) with occurrences of smallfruit bullrush (*Scirpus microarpus*), arroyo willow (*Salix lasiolepis*), and soft rush (*Juncus effusus*) present throughout. A small stand of Sitka spruce (*Picea sitchensis*) is present in the southern half of the project area adjacent to the wetland as is best described as the *Picea sitchensis* Forest alliance (S2). The understory of this small stand is composed of Himalayan blackberry (*Rubus armeniacus*), Pacific blackberry, and non-native grasses and forbs present in the *Holcus lanatus – Anthoxanthum odoratum* Herbaceous Alliance.

All potential rare plant habitats were surveyed, and false negative surveys are unlikely.

Impacts

Project activities will result in the conversion of 0.8 acres of existing non-native grassland to a gravel parking lot. Through mitigation measures such as bioswales, vegetated buffers, and positive grading, impacts to surrounding wetlands and native vegetation will be minimal. No project activity that would impact the Sitka spruce Forest Alliance is planned.

Mitigations

No impact to listed species will occur due to project activities, so no relevant mitigation actions are recommended.

References

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California Department of Fish and Wildlife, Natural Diversity Database, BIOS. 2026. California Department of Fish and Wildlife, Biogeographic Data Branch, Sacramento, CA. [Accessed March 2026].

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Attachment A: List of Potentially Occurring Sensitive Plant Species

Scientific Name	Common Name	FESA	CESA	RplantRank	GRank	SRank	Potential Occur
Gilia capitata ssp. *pacifica*	pacific gilia	None	None	1B.2	G5T3	S2	Moderate
Hesperevax sparsiflora var. brevifolia	Short-leaved evax	None	None	1B.2	G4T3	S2	Moderate
Montia howellii	Howell's montia	None	None	2B.2	G3G4	S2	High
Oenothera wolfii	Wolf's evening-primrose	None	None	1B.1	G2	S1	Moderate
Sidalcea malachroides	maple-leaved checkerbloom	None	None	4.2	G3	S3	High
Sidalcea malviflora ssp. patula	Siskiyou checkerbloom	None	None	1B.2	G5T2	S2	Moderate
Sidalcea oregana ssp. *exima*	Coast checker-bloom	None	None	1B.2	G5T2	S2	Moderate
Trichodon cylindricus	cylindrical trichodon	None	None	2B.2	G4G5	S2	Low
Fissidens pauperculus	minute pocket moss	None	None	1B.2	G3?	S2	Low
Castilleja ambigua var. humboldtiensis	Humboldt Bay owl's-clover	None	None	1B.2	G5T2	S2	None
Abronia umbellata var. breviflora	pink sand-verbena	None	None	1B.1	G4G5T2	S2	None
Lathyrus japonicus	seaside pea	None	None	2B.1	G5	S3	None
Lycopodium clavatum	running-pine	None	None	4.1	G5	S3	Low
Carex lyngbyei	Lyngbye's sedge	None	None	2B.2	G5	S3	None
Carex arcta	northern clustered sedge	None	None	2B.2	G5	S1	None
Lilium occidentale	western lily	Endangered	Endangered	1B.1	G1G2	S1	Low

Rank Definitions
Global Conservation Status Definition

Listed below are definitions for interpreting NatureServe global (range-wide) conservation status ranks. These ranks are assigned by NatureServe scientists or by a designated lead office in the NatureServe network.

G1 **Critically Imperiled** – At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
G2 **Imperiled** – At high risk of extinction or elimination due to very restricted range, very few populations, steep declines, or other factors.
G3 **Vulnerable** – At moderate risk of extinction or elimination due to a restricted range, relatively few populations, recent and widespread declines, or other factors.
G4 **Apparently Secure** – Uncommon but not rare; some cause for long-term concern due to declines or other factors.
G5 **Secure** – Common; widespread and abundant.
G#G# **Range Rank** – A numeric range range (e.g. G2G3, G1G3) is used to indicate the range of uncertainty about the exact status of a taxon or ecosystem type. Ranges cannot skip more than two ranks (e.g., GU should be used rather than G1G4).

Infraspecific Taxon Conservation Status Ranks

T# **Infraspecific Taxon** (trimonial) – The status of infraspecific taxa (subspecies or varieties) are indicated by a "T-rank" following the species global rank. Rules for assigning T-ranks follow the same principles outlined above. For example, the global rank of a critically imperiled subspecies of an otherwise widespread and common species would be G5T1. A T subrank cannot imply the subspecies or variety is more abundant than the species. For example, a G1T2 subrank should not occur. A vertebrate animal population, (e.g., listed under the U.S. Endangered Species Act or assigned candidate status) may be tracked as an infraspecific taxon and given a T-rank; in such cases a Q is used after the T-rank to denote the taxon's informal taxonomic status.

Subnational (S) Conservation Status Ranks

S1 **Critically Imperiled** – Critically imperiled in the jurisdiction because of extreme rarity or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the jurisdiction.
S2 **Imperiled** – Imperiled in the jurisdiction because of rarity due to very restricted range, very few populations, steep declines, or other factors making it very vulnerable to extirpation from jurisdiction.
S3 **Vulnerable** – Vulnerable in the jurisdiction due to a restricted range, relatively few populations, recent and widespread declines, or other factors making it vulnerable to extirpation.
S4 **Apparently Secure** – Uncommon but not rare; some cause for long-term concern due to declines or other factors.
S5 **Secure** – Common, widespread, and abundant in the jurisdiction.
S#S# **Range Rank** – A numeric range rank (e.g., S2S3 or S1S3) is used to indicate any range of uncertainty about the status of the species or ecosystem. Ranges cannot skip more than two ranks (e.g., SU is used rather than S1S4).

Rank Qualifiers

? **Inexact Numeric Rank** – Denotes inexact numeric rank; this should not be used with any of the Variant Global Conservation Status
Q **Questionable taxonomy that may reduce conservation priority** – Distinctiveness of this entity as a taxon or ecosystem type at the current level is questionable; resolution of this uncertainty may result in change from a species to a subspecies or hybrid, or inclusion of this taxon or type in another taxon or type, with the resulting taxon having a lower-priority (numerically higher) conservation status rank. The "Q" modifier is only used at a global level and not at a national or subnational level.

The California Rare Plant Ranks

1A. Presumed extirpated in California and either rare or extinct elsewhere
1B. Rare or Endangered in California and elsewhere
2A. Presumed extirpated in California, but more common elsewhere
2B. Rare or Endangered in California, but more common elsewhere
3. Plants for which we need more information – Review list
4. Plants of limited distribution – Watch list

1A: Plants Presumed Extirpated in California and either rare or extinct elsewhere
The plants of Rank 1A are presumed extirpated because they have not been seen or collected in the wild in California for many years. This rank includes those plant taxa that are both presumed extinct, as well as those plants which are presumed extirpated in California and rare elsewhere. A plant is extinct if it no longer occurs anywhere. A plant that is extirpated from California has been eliminated from California, but may still occur elsewhere in its range.

1B: Plants Rare, Threatened or Endangered in California and Elsewhere
(Includes Rare Plant Ranks 1B.1, 1B.2, 1B.3)
The plants of Rank 1B are rare throughout their range with the majority of them endemic to California. Most of the plants that are ranked 1B have declined significantly over the last century. California Rare Plant Rank 1B plants constitute the majority of plant taxa tracked by the CNDDB, with more than 1,000 plants assigned to this category of rarity.

2A: Plants Presumed Extirpated in California, but more common elsewhere
The plants of Rank 2A are presumed extirpated because they have not been seen or collected in the wild in California for many years. This rank includes only those plant taxa that are presumed extirpated in California, but that are more common elsewhere in their range. Note: Plants of both Rank 1A and 2A are presumed extirpated in California; the only difference is the status of the plants outside of the state.

2B: Plants Rare, Threatened or Endangered in California, but More Common Elsewhere
(Includes Rare Plant Ranks 2B.1, 2B.2 2B.3)
The plants of Rank 2B are rare, threatened or endangered in California, but more common elsewhere. Plants common in other states or countries are not eligible for consideration under the provisions of the Federal Endangered Species Act; however they are eligible for consideration under the California Endangered Species Act. This rank is meant to highlight the importance of protecting the geographic range and genetic diversity of more widespread species by protecting those species whose ranges just extend into California. Note: Plants of both Rank 1B and 2B are rare, threatened or endangered in California; the only difference is the status of the plants outside of the state.

Threat Ranks:
The California Rare Plant Ranks (CRPR) use a decimal-style threat rank. The threat rank is an extension added onto the CRPR and designates the level of threats by a 1 to 3 ranking with 1 being the most threatened and 3 being the least threatened. So most CRPRs read as 1B.1, 1B.2, 1B. 3, etc. Note that some Rank 3 plants do not have a threat code extension since there are no known extant populations of the plants in California.
Threat Code extensions and their meanings:
.1 – Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 – Moderately threatened in California (20-80% of occurrences threatened / moderate degree and immediacy of threat)
.3 – Not very threatened in California (<20% of occurrences threatened / low degree of immediacy of threat or no current threats known)

Attachment B. Habitat Photos



Photo 1. The project area is composed of the *Pontentilla anserina – Eleocharis macrostachya* Association (S3, foreground), *Picea sitchensis* Forest Alliance (S2, middle right), and the *Holcus lanatus – Anthoxanthum odoratum* Alliance (SNA, background) in an open lot adjacent to residential and commercial structures. Photo credit 3/16/26, A. Budnik.

Attachment C. Plant Species Observed

Scientific Name	Common Name	Status	Family
Picea sitchensis	Sitka spruce	Native	Pinaceae
Anthoxanthum occidentale	vanilla grass	native	Poaceae
Baccharis pilularis	coyote brush	native	Asteraceae
Bellis perennis	common daisy	non-native	Asteraceae
Holcus lanatus	velvet grass	non-native, invasive	Poaceae
Hypochaeris radicata	hairy catsear	non-native, invasive	Asteraceae
Dactylis glomerata	orchard grass	non-native, invasive	Poaceae
Rumex cripsus	curly dock	non-native, invasive	Polygonaceae
Poa annua	annual bluegrass	non-native	Poaceae
Agrostsis stolonifera	bentgrass	non-native, invasive	Poaceae
Taraxacum officinale	dandelion	non-native	Asteraceae
Medicago polymorpha	bur clover	non-native, invasive	Fabaceae
Juncus bufonius	toad rush	native	Juncaceae
Lotus corniculatus	birdsfoot trefoil	non-native, invasive	Fabaceae
Salix lasiolepis	arroyo willow	native	Salicaceae
Juncus effusus	soft rush	native	Juncaceae
Potentilla anserina	silver cinquefoil	native	Rosaceae
Carex obnupta	slough sedge	native	Cyperaceae
Festuca arundinacea	tall fescue	non-native, invasive	Poaceae
Rubus armerniacus	Himalayan blackberry	non-native, invasive	Rosaceae
Rumex acetosella	sheepsorrel	non-native, invasive	Polygonaceae
Plantago lanceolata	English plantain	non-native, invasive	Plantaginaceae
Cytisus scoparius	Scotch broom	non-native, invasive	Fabaceae
Iris douglasiana	Douglas iris	native	Iridaceae
Fumaria capreolata	white fumitory	non-native	Papaveraceae
Cotoneaster pannosus	cotoneaster	non-native, invasive	Rosaceae
Raphanus sativus	wild radish	non-native, invasive	Brassicaceae
Eleocharis macrostachya	common spikerush	native	Cyperaceae
Symphiotrichum chilense	Chilean aster	native	Asteraceae
Rosa nutkana	Nootka rose	native	Rosaceae
Erica lusitanica	Spanish heather	non-native, invasive	Ericaceae
Pinus contorta	shore pine	native	Pinaceae
Spergula arvensis	corn spurry	non-native	Caryophyllaceae
Fragaria chiloense	coastal strawberry	native	Rosaceae
Prunella vulgaris	self-heal	native	Lamiaceae
Carex pachystachya	clustered sedge	native	Cyperaceae
Scirpus microcarpus	smallfruit bullrush	native	Cyperaceae
Trifolium repens	white clover	non-native	Fabaceae
Zantedeschia aethiopica	calla lily	non-native, invasive	Araceae

Alnus rubra	red alder	native	Betulaceae
Vicia sativa	common vetch	non-native	Fabaceae
Euphorbia helioscopa	sun spurge	non-native	Euphorbiaceae
Erodium cicutarium	storksbill	non-native, invasive	Geraniaceae
Geranium dissectum	dissected geranium	non-native, invasive	Geraniaceae
Lamium purpureum	purple hedgenettle	non-native	Lamiaceae
Narcissus pseudonarcissus	daffodil	non-native	Amaryllidaceae
Leucanthemum x superbum	Shasta daisy	non-native, invasive	Asteraceae
Galium aparine	cleavers	native	Rubiaceae
Crepis capillaris	smooth hawksbeard	non-native	Asteraceae
Conium maculatum	poison hemlock	non-native, invasive	Apiaceae
Hedera helix	English ivy	non-native, invasive	Araliaceae
Stellaria media	field chickweed	non-native	Caryophyllaceae
Ilex aquifolium	holly	non-native, invasive	Aquifoliaceae
Mentha pulegium	pennyroyal	non-native, invasive	Lamiaceae
Epilobium ciliatum	fringed willowherb	native	Onagraceae
Juncus ensifolius	swordleaf rush	native	Juncaceae

Attachment D: Rank Definitions

CONSERVATION STATUS DEFINITIONS

Fed List*
This field indicates the plant's legal status under the Federal Endangered Species Act (ESA).

FE **Federally Endangered**: The classification provided to a plant in danger of extinction within the foreseeable future throughout all or a significant portion of its range.
FT **Federally Threatened**: The classification provided to a plant which is likely to become an Endangered species within the foreseeable future throughout all or a significant portion of its range.
PE **Proposed Endangered**: The classification provided to a plant that is proposed for federal listing as Endangered in the Federal Register under Section 4 of the Endangered Species Act.
PT **Proposed Threatened**: The classification provided to a plant that is proposed for federal listing as Threatened in the Federal Register under Section 4 of the Endangered Species Act.
FC **Federal Candidate**: The classification provided to a plant that has been studied by the United States Fish and Wildlife Service, and the Service has concluded that it should be proposed for addition to the list of Federally Endangered and Threatened species.
None The plant has no federal listing status under ESA.
FD **Federally Delisted**: The plant was previously listed as Endangered or Threatened but is no longer on the list of Federally Endangered and Threatened species.

State List*
This field indicates the plant's legal status under the California Endangered Species Act (CESA).

CE **State Listed as Endangered**: The classification provided to a native species or subspecies in serious danger of becoming extinct throughout all or a significant portion of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.
CT **State Listed as Threatened**: The classification provided to a native species or subspecies that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of special protection and management efforts.

CR **State Listed as Rare**: The classification provided to a native plant species, subspecies, or variety when, although not presently threatened with extinction, it occurs in such small numbers throughout its range that it may become endangered if its present environment worsens. This designation stems from the Native Plant Protection Act of 1977.

CC **Candidate for State Listing**: The classification provided to a native species or subspecies that the Fish and Game Commission has formally noticed as being under review by the Department of Fish and Wildlife for addition to the list of endangered or threatened species, or a species for which the commission has published a notice of proposed regulation to add the species to the list of endangered or threatened species.

None The plant has no state listing status under CESA.

CD **State Delisted**: The plant was previously listed as Endangered, Threatened or Rare but is no longer listed by the State of California.

Global Rank*

The Global Rank (G-rank) is an indication of the overall condition and imperilment of an element throughout its global range. It is a letter+number score that reflects a combination of Rarity, Threat and Trend factors, with weighting being heavier on the rarity factors. The Global Ranks are assigned by NatureServe in coordination with the state program(s) where the element occurs.

GX **Presumed Extinct** — Not located despite intensive searches and virtually no likelihood of rediscovery.

GH **Possibly Extinct** — Known from only historical occurrences but still some hope of rediscovery. There is evidence that the species may be extinct or the ecosystem may be eliminated throughout its range, but not enough to state this with certainty. Examples of such evidence include 1) that a species has not been documented in approximately 20–40 years despite some searching or some evidence of significant habitat loss or degradation; 2) that a species or ecosystem has been searched for unsuccessfully, but not thoroughly enough to presume that it is extinct or eliminated throughout its range.

G1 **Critically Imperiled** — At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.

G2 **Imperiled** — At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.

G3 **Vulnerable** — At moderate risk of extinction or elimination due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.

G4 **Apparently Secure** — Uncommon but not rare; some cause for long-term concern due to declines or other factors.

G5 **Secure** — Common; widespread and abundant.

GNR **Unranked** — Global rank not yet assessed.

GU **Unrankable** — Currently unrankable due to a lack of information or due to substantially conflicting information about status or trends.

G#G# **Range Rank** — A numeric range rank (e.g., G2G3) is used to indicate the range of uncertainty about the exact status of a taxon or community.

G#T# **Infraspecific Taxon** — The status of infraspecific taxa (subspecies or varieties) are indicated by a "T-rank" following the species' Global Rank. Rules for assigning T-ranks follow the same principles as those for Global Ranks. However, a T-rank cannot imply the subspecies or variety is more abundant than the species. In such cases, the G-rank reflects the condition of the entire species, whereas the T-rank reflects the global situation of just the subspecies or variety.

? **Qualifier: Inexact Numeric Rank** — A question mark represents a rank qualifier, denoting an inexact or uncertain numeric rank.

Q **Qualifier: Questionable Taxonomy** — The distinctiveness of this entity as a taxon or community at the current level is questionable; resolution of this uncertainty may result in change from a species to a subspecies or hybrid, or inclusion of this taxon or type in another taxon or type, with the resulting taxon having a lower-priority (numerically higher) conservation status rank.

C **Qualifier: Captive or Cultivated Only** — The taxon or community at present is presumed or possibly extinct or eliminated in the wild across its entire native range but is extant in cultivation, in captivity, as a naturalized population (or populations) outside its native range, or as a reintroduced population or ecosystem restoration, not yet established.

State Rank*

The State Rank (S-rank) is an indication of the condition and imperilment of an element throughout its range within the state. As with the G-rank, it is a letter+number score that reflects a combination of Rarity, Threat and Trend factors, weighted more heavily on rarity. The State Ranks are assigned by the CNDDB biologists using standard natural heritage methodology.

SX **Presumed Extirpated** — Species is believed to be extirpated from the state. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.

SH **Possibly Extirpated (Historical)** — Species occurred historically in the state, and there is some possibility that it may be rediscovered. All sites are historical; the element has not been seen for at least 20 years, but suitable habitat still exists.

S1 **Critically Imperiled** — Critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.

S2 **Imperiled** — Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state.

S3 **Vulnerable** — Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.

S4 **Apparently Secure** — Uncommon but not rare; some cause for long-term concern due to declines or other factors.

S5 **Secure** — Common, widespread, and abundant in the state.

SNR **Unranked** — State conservation status not yet assessed.

SU **Unrankable** — Currently unrankable due to a lack of information or due to substantially conflicting information about status or trends.

S#S# **Range Rank** — A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.

? **Qualifier: Inexact or Uncertain** — A question mark represents a rank qualifier, denoting an inexact or uncertain numeric rank.

Note: References to older ranks may contain a decimal "threat" rank of .1, .2, or .3, where .1 indicates very threatened status, .2 indicates moderate threat, and .3 indicates few or no current known threats.

CA Rare Plant Rank (CRPR)

California Rare Plant Ranks (CRPRs) are a ranking system developed by the California Native Plant Society (CNPS) to define and categorize rarity in the California flora. All plants that are assigned to a California Rare Plant Rank category are tracked by the CNDDB; however, element occurrence (EO) information is only maintained for CRPR 1 and 2 plants, and some CRPR 3 plants. Most CRPR 3 and 4 plants that have EO information in this Inventory and the CNDDB were previously assigned to CRPR 1 or 2; their EO data reflect their prior rank and have generally not been updated since the date of their change to CRPR 3 or 4.

Major changes to California Rare Plant Ranks (e.g., additions, changes, and deletions) undergo the CNPS Rare Plant Status Review process. This is a joint effort by CNPS, the CNDDB, Regional Plant Status Review Groups, the Status Review Forum, and botanical experts throughout the world. Once consensus is reached, then additions, changes, or deletions in California Rare Plant Ranks are made to this Inventory and the CNDDB. For a flow chart of the status review process, see Rare Plant Data in California: The Cooperative Relationship between the California Natural Diversity Database and the California Native Plant Society.

1A **Presumed Extirpated or Extinct** — Plants presumed extirpated in California and either rare or extinct elsewhere. These plants have not been seen or collected in the wild in California for many years. A plant is extinct if it no longer occurs anywhere. A plant that is extirpated from California has been eliminated from California but may still occur elsewhere in its range.

All of the plants constituting California Rare Plant Rank 1A meet the definitions of the California Endangered Species Act of the California Department of Fish and Game Code and are eligible for state listing. Should these taxa be rediscovered, any impacts to individual plants or their habitat must be analyzed during preparation of environmental documents relating to the California Environmental Quality Act (CEQA), or those considered to be functionally equivalent to CEQA, as they meet the definition of Rare or Endangered under CEQA Guidelines §15125 (c) and/or §15380.

1B **Rare or Endangered — Plants rare, threatened, or endangered in California and elsewhere.** These plants are rare throughout their entire range with the majority also being endemic to California. Most of the plants that are ranked 1B have declined significantly over the last century. California Rare Plant Rank 1B plants constitute the majority of taxa in the CNPS Inventory, with more than 1,000 plants assigned to this category of rarity.

All of the plants constituting California Rare Plant Rank 1B meet the definitions of the California Endangered Species Act of the California Department of Fish and Game Code and are eligible for state listing. Impacts to these species or

their habitat must be analyzed during preparation of environmental documents relating to CEQA, or those considered to be functionally equivalent to CEQA, as they meet the definition of Rare or Endangered under CEQA Guidelines §15125 (c) and/or §15380.

2A **Extirpated in California — Plants presumed extirpated in California but common elsewhere**. These plants are presumed extirpated because they have not been observed or documented in California for many years. This list only includes plants that are presumed extirpated in California but are common elsewhere in their range outside of the state.

All of the plants constituting California Rare Plant Rank 2A meet the definitions of the California Endangered Species Act of the California Department of Fish and Game Code and are eligible for state listing. Should these species be rediscovered, any impacts proposed to individuals, or their habitat must be analyzed during preparation of environmental documents relating to CEQA, or those considered to be functionally equivalent to CEQA, as they meet the definition of Rare or Endangered under CEQA Guidelines §15125 (c) and/or §15380.

2B **Rare or Endangered in California — Plants rare, threatened, or endangered in California but common elsewhere.** Except for being common beyond the boundaries of California, 2B plants would have been ranked 1B. From the federal perspective, plants common in other states or countries are not eligible for consideration under the provisions of the Federal Endangered Species Act. With California Rare Plant Rank 2B, we recognize the importance of protecting the geographic range of widespread species. In this way we protect the diversity of our own state's flora and help maintain evolutionary processes and genetic diversity within species.

All of the plants constituting California Rare Plant Rank 2B meet the definitions of the California Endangered Species Act of the California Department of Fish and Game Code and are eligible for state listing. Impacts to these species or their habitat must be analyzed during preparation of environmental documents relating to CEQA, or those considered to be functionally equivalent to CEQA, as they meet the definition of Rare or Endangered under CEQA Guidelines §15125 (c) and/or §15380.

3 **Needs Review — Plants about which more information is needed.** These plants are united by one common theme—we lack the necessary information to assign them to one of the other ranks or to reject them. Nearly all of the plants constituting California Rare Plant Rank 3 are taxonomically problematic, yet if taxonomically valid would demonstrably qualify for rank 1B or 2B. For each California Rare Plant Rank 3 plant we have provided the known information and indicated in the "Notes" section of the Inventory record where assistance is needed. Data regarding distribution, endangerment, ecology, and taxonomic validity are welcomed and can be submitted by emailing the Rare Plant Program at rareplants@cnps.org.

Many of the plants constituting California Rare Plant Rank 3 meet the definitions of the California Endangered Species Act of the California Department of Fish and Game Code and are eligible for state listing. Impacts to these species or their habitat should be analyzed during preparation of environmental documents relating to CEQA, or those considered to be functionally equivalent to CEQA, as they may meet the definition of Rare or Endangered under CEQA Guidelines §15125 (c) and/or §15380.

4 **Uncommon in California — Plants of limited distribution, a watch list**. These plants are of limited distribution or infrequent throughout a broader area in California, and their status should be monitored regularly. Should the degree of endangerment or rarity of a California Rare Plant Rank 4 plant change, we will transfer it to a more appropriate rank.
Some of the plants constituting California Rare Plant Rank 4 meet the definitions of the California Endangered Species Act of the California Department of Fish and Game Code, and few, if any, are eligible for state listing. Nevertheless, many of them are significant locally, and we strongly recommend that California Rare Plant Rank 4 plants be evaluated for significant impacts during preparation of environmental documents relating to CEQA, or those considered to be functionally equivalent to CEQA, based on CEQA Guidelines §15125 (c) and/or §15380. This may be particularly appropriate for:

The type locality of a California Rare Plant Rank 4 taxon;
Occurrences at the periphery of a species' range;
Areas where the taxon is especially uncommon;
Areas where the taxon has sustained heavy losses (declining);
Occurrences exhibiting unusual morphology or occurring on unusual substrates;

Species maintained on BLM, USFWS, or USFS sensitive species lists; and
Taxa associated with a habitat that is declining in California at a significant rate.
To assist in evaluating CRPR 4 taxa for CEQA consideration, see the technical memorandum on Considerations for Including CRPR 4 Plant Taxa in CEQA Biological Resource Impact Analysis prepared by the Rare Plant Program Committee.

Threat Rank
California Rare Plant Ranks at each level also include a threat rank (e.g., CRPR 4.3) and are assigned as follows:

0.1 **Seriously threatened in California** — Over 80% of occurrences threatened / high degree and immediacy of threat.
0.2 **Moderately threatened in California** — 20-80% of occurrences threatened / moderate degree and immediacy of threat.
0.3 **Not very threatened in California** — Less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known.

Notes:

Threat ranks do not are provided for general research purposes only and do not indicate differences in conservation assessment. For example, a CRPR 1B.3 plant has the same conservation status as a CRPR 1B.1 plant, and it is mandatory that both be fully considered during preparation of environmental documents relating to CEQA.

The threat ranking criteria described above represent only the starting point for the assessment of threat level. Other factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are also considered in assigning threat ranks.
In many cases, the threat rank has not been reassessed since the date the taxon was first added to this Inventory or underwent its last Status Review. For these taxa, the assigned threat ranking may not accurately reflect the current level of threat.

Considered but Rejected
A category of Considered but Rejected (CBR) exists for plants that either previously had a CRPR, or that were considered for addition to this Inventory but were rejected for one or more reasons. Any plant that is deleted from a CRPR category in this Inventory is not fully removed and is instead changed to the CBR category. Rejected plants are searchable by selecting the "Considered But Rejected" button in the California Rare Plant Rank section of simple and advanced search. A brief description of the reason why the plant was rejected is included for each CBR entry.

Attachment E. General Location, Botanical Survey, CALVEG, and CNDDB Maps

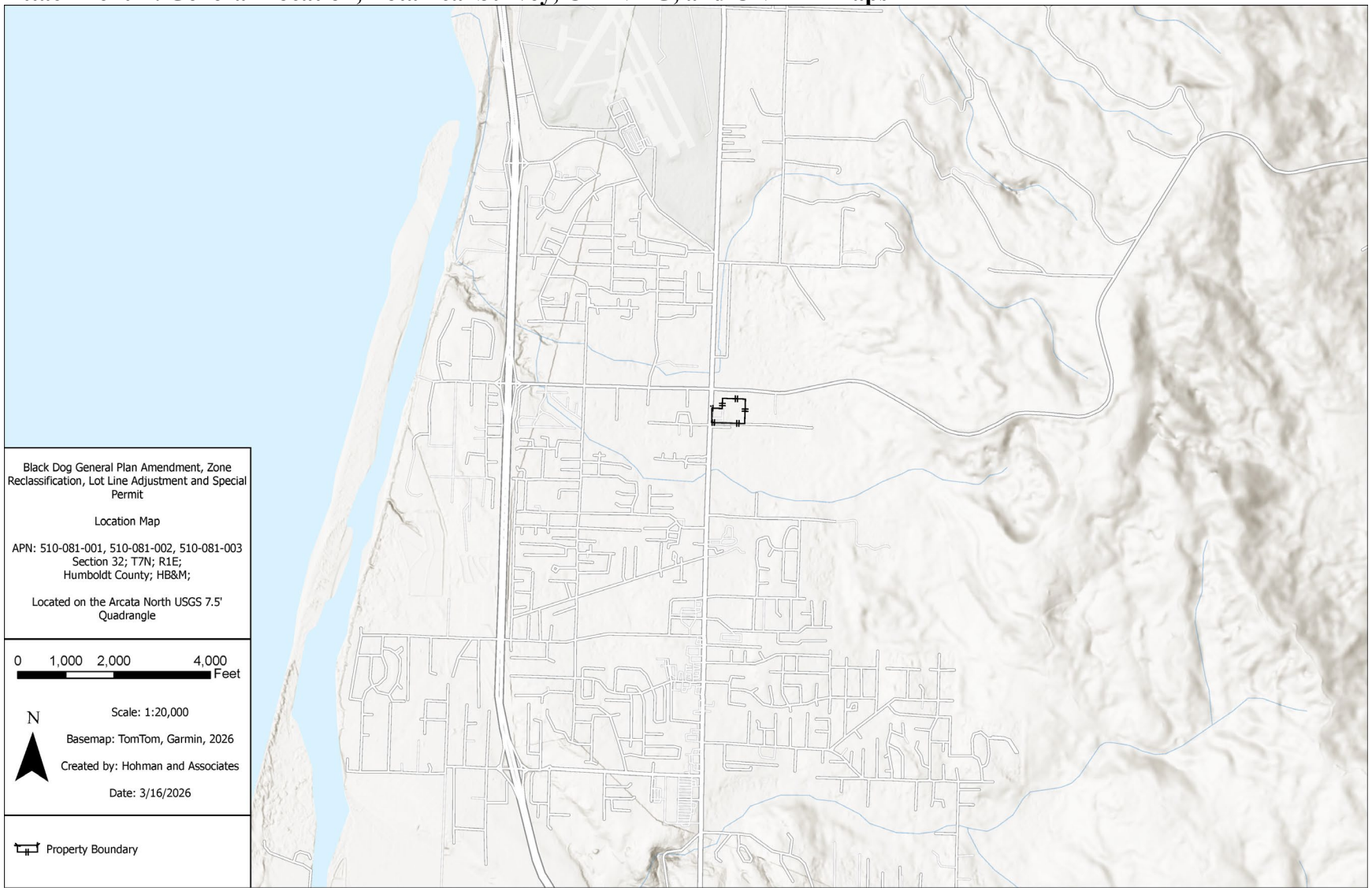

Figure 1. Location map of the project area

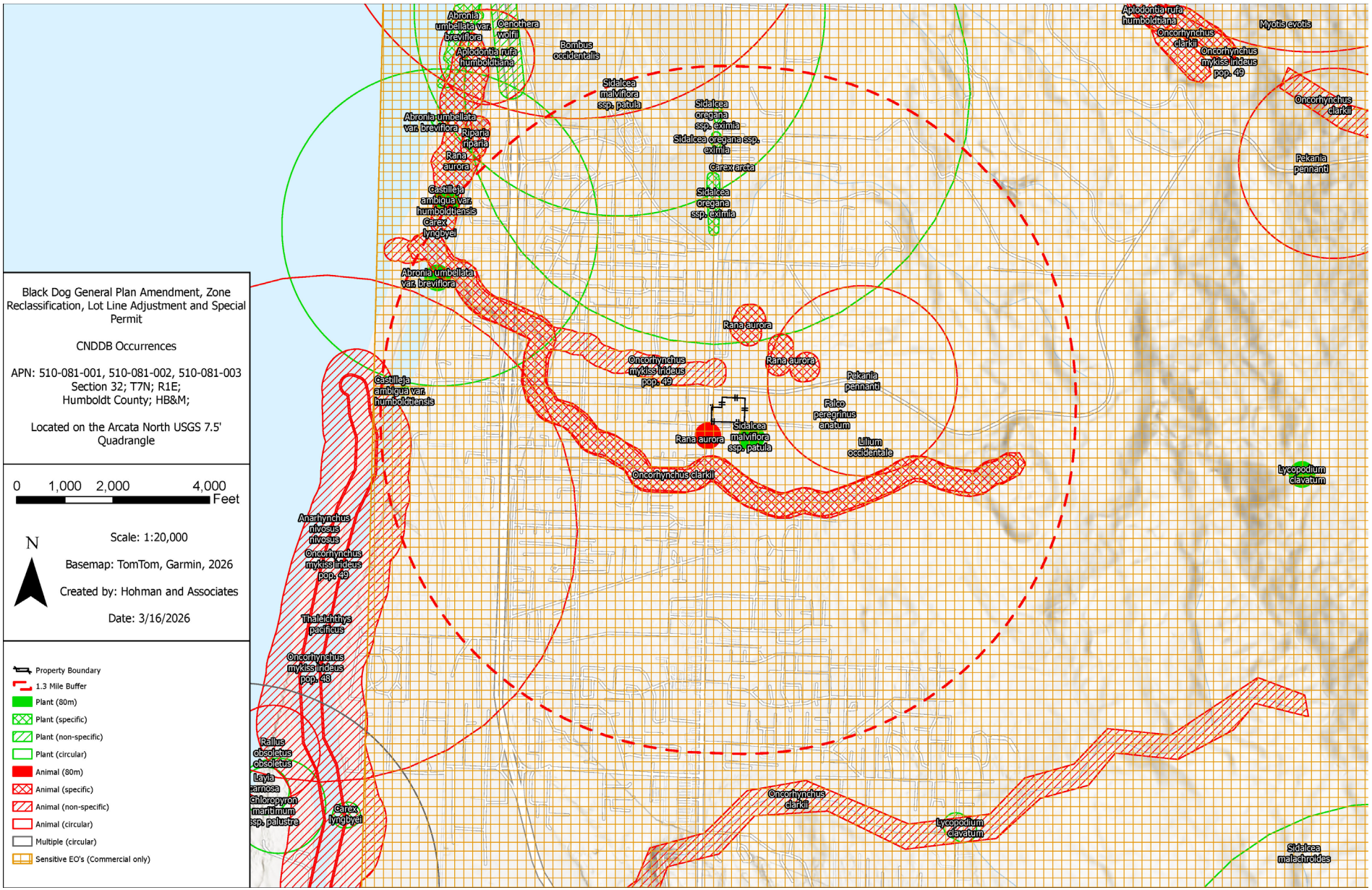

Figure 2. CNDDB occurrences around the project area

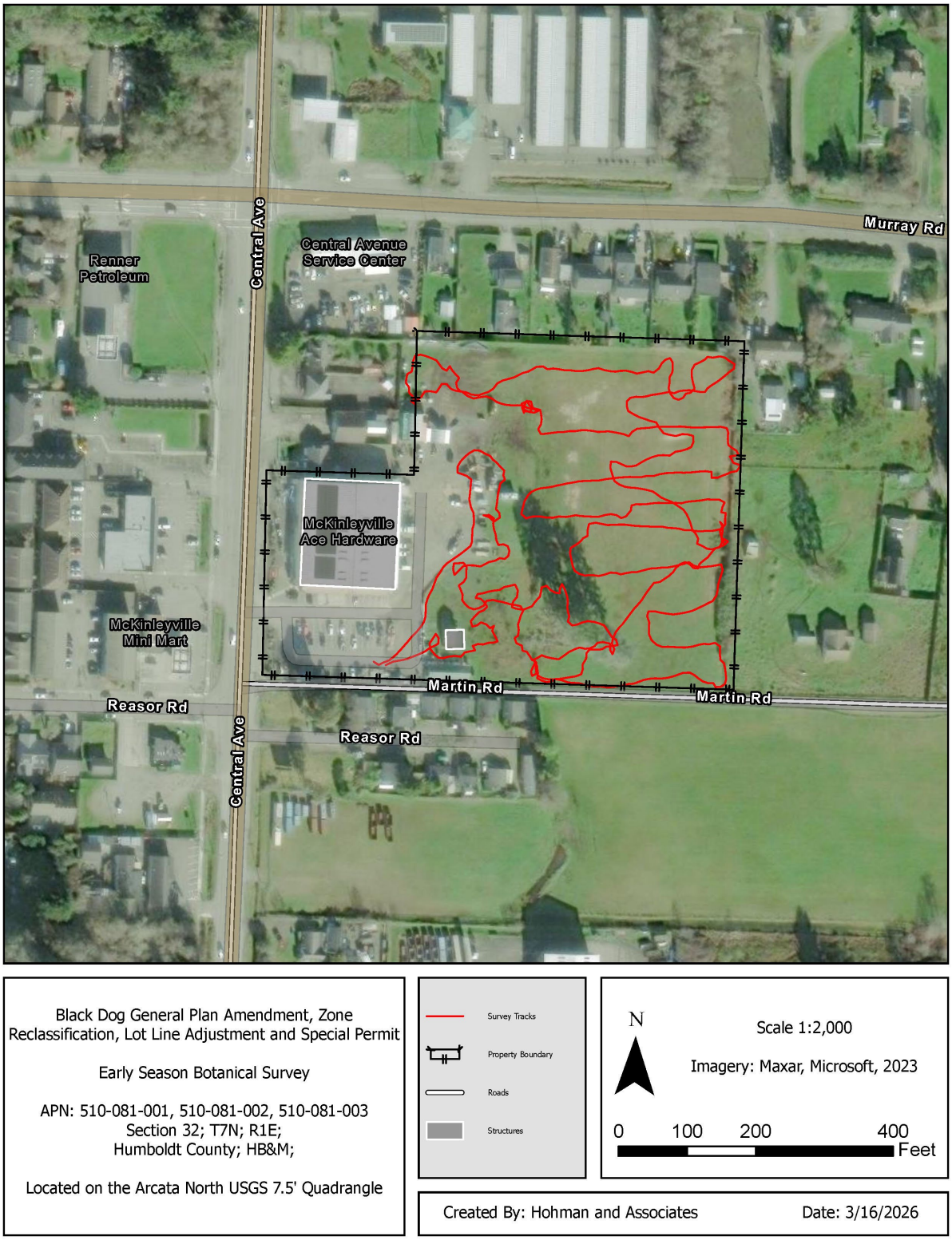

Figure 2. Early season botany survey tracks

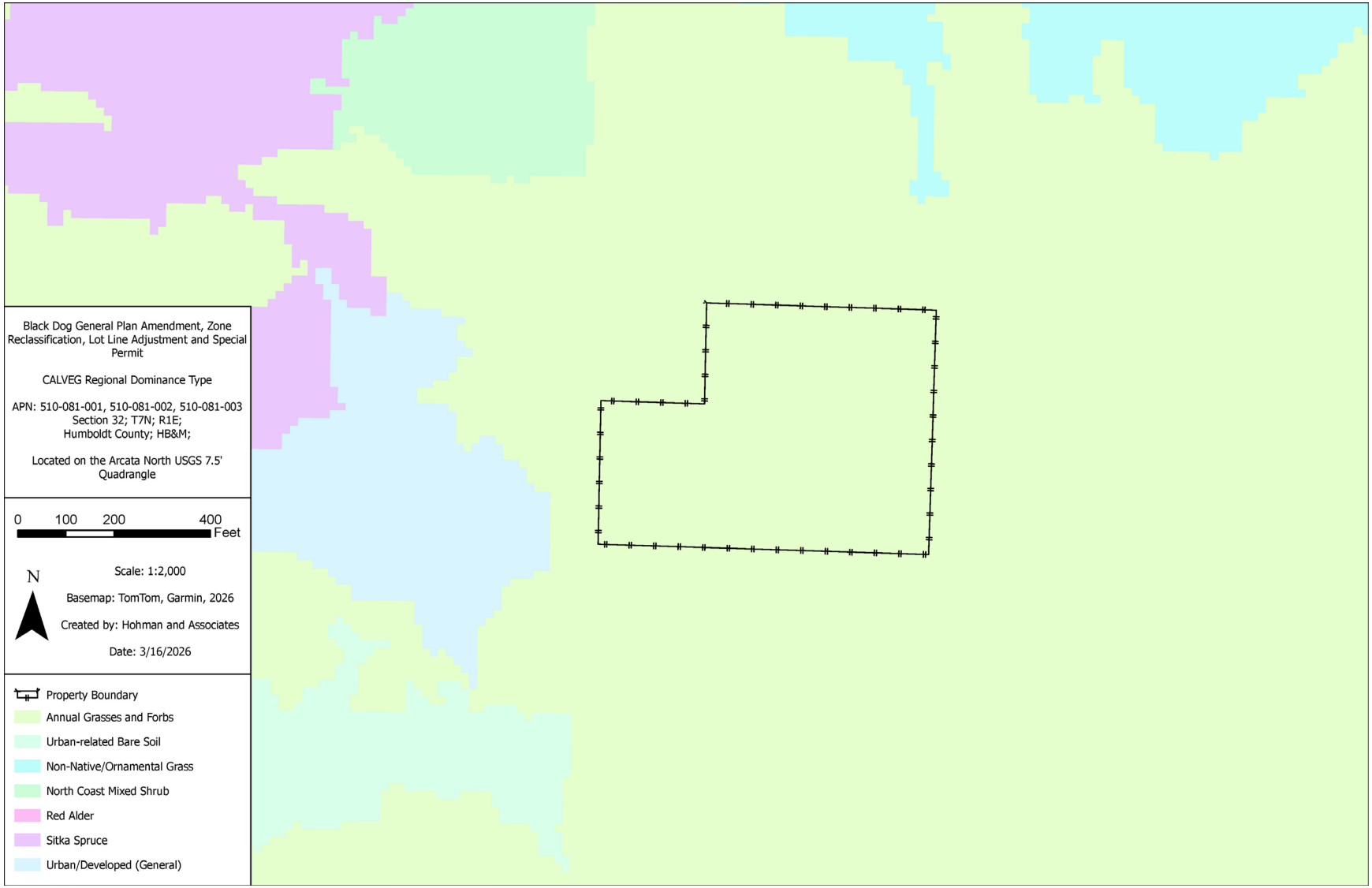

Figure 3. CalVeg cover types of the project area

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Humboldt County, Central Part, California



March 16, 2026

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

Preface 2
Soil Map 5
Soil Map 6
Legend 7
Map Unit Legend 8
Map Unit Descriptions 8
Humboldt County, Central Part, California 10
225—Arcata and Candymountain soils, 0 to 2 percent slopes 10
References 13

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:1,290 if printed on A landscape (11" x 8.5") sheet.

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Humboldt County, Central Part, California
Survey Area Data: Version 12, Sep 5, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 1, 2022—Jun 19, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
225	Arcata and Candymountain soils, 0 to 2 percent slopes	6.8	100.0%
Totals for Area of Interest		**6.8**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Humboldt County, Central Part, California

225—Arcata and Candymountain soils, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2lmt0
Landscape: Coastal plains
Elevation: 10 to 290 feet
Mean annual precipitation: 35 to 90 inches
Mean annual air temperature: 52 to 55 degrees F
Frost-free period: 275 to 325 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Arcata and similar soils: 50 percent
Candymountain and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Arcata

Setting

Landscape: Coastal plains
Landform: Dissected marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Marine deposits derived from mixed

Typical profile

A - 0 to 23 inches: fine sandy loam
AB - 23 to 37 inches: very fine sandy loam
Bw - 37 to 51 inches: fine sandy loam
C - 51 to 67 inches: fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: B
Ecological site: F004BX121CA - Redwood-Sitka spruce/salal-California huckleberry/western swordfern, marine terraces, marine deposits, sandy loam and loam

Hydric soil rating: No

Description of Candymountain

Setting

Landscape: Coastal plains
Landform: Dissected marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Marine deposits derived from mixed

Typical profile

A1 - 0 to 11 inches: fine sandy loam
A2 - 11 to 19 inches: fine sandy loam
Bt1 - 19 to 38 inches: fine sandy loam
Bt2 - 38 to 48 inches: fine sandy loam
BCt - 48 to 55 inches: sandy loam
C - 55 to 63 inches: loamy fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: B
Ecological site: F004BX121CA - Redwood-Sitka spruce/salal-California huckleberry/western swordfern, marine terraces, marine deposits, sandy loam and loam
Hydric soil rating: No

Minor Components

Urban land, residential

Percent of map unit: 4 percent
Landscape: Hills
Landform: Dissected marine terraces
Anthropogenic features: Urban land
Hydric soil rating: No

Timmons

Percent of map unit: 3 percent
Landscape: Coastal plains
Landform: Dissected marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread

Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F004BX121CA - Redwood-Sitka spruce/salal-California huckleberry/western swordfern, marine terraces, marine deposits, sandy loam and loam
Hydric soil rating: No

Halfbluff

Percent of map unit: 3 percent
Landscape: Coastal plains
Landform: Dissected remnants of marine marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F004BX118CA - Sitka spruce-redwood/salal/western brackenfern, marine terraces, marine deposits, fine sandy loam
Hydric soil rating: No

Megwil,

Percent of map unit: 3 percent
Landscape: Coastal plains
Landform: Dissected marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F004BX120CA - Redwood-Sitka spruce/California huckleberry-salmonberry/western swordfern-deer fern, marine terraces, loam
Hydric soil rating: No

Talawa

Percent of map unit: 2 percent
Landscape: Coastal plains
Landform: Drainageways and depressions on marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

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NO.	HISTORY / REVISION	BY	CHK.	DATE

BLACK DOG PARTNERSHIP

2725 CENTRAL AVENUE, MCKINLEYVILLE, CA 95519

Conceptual Site Layout

DRAWN	BKS
CHECK	
APPROVED	
DATE	9/13/2024
JOB NUMBER	
DRAWING	**C1.0**

Figure 8

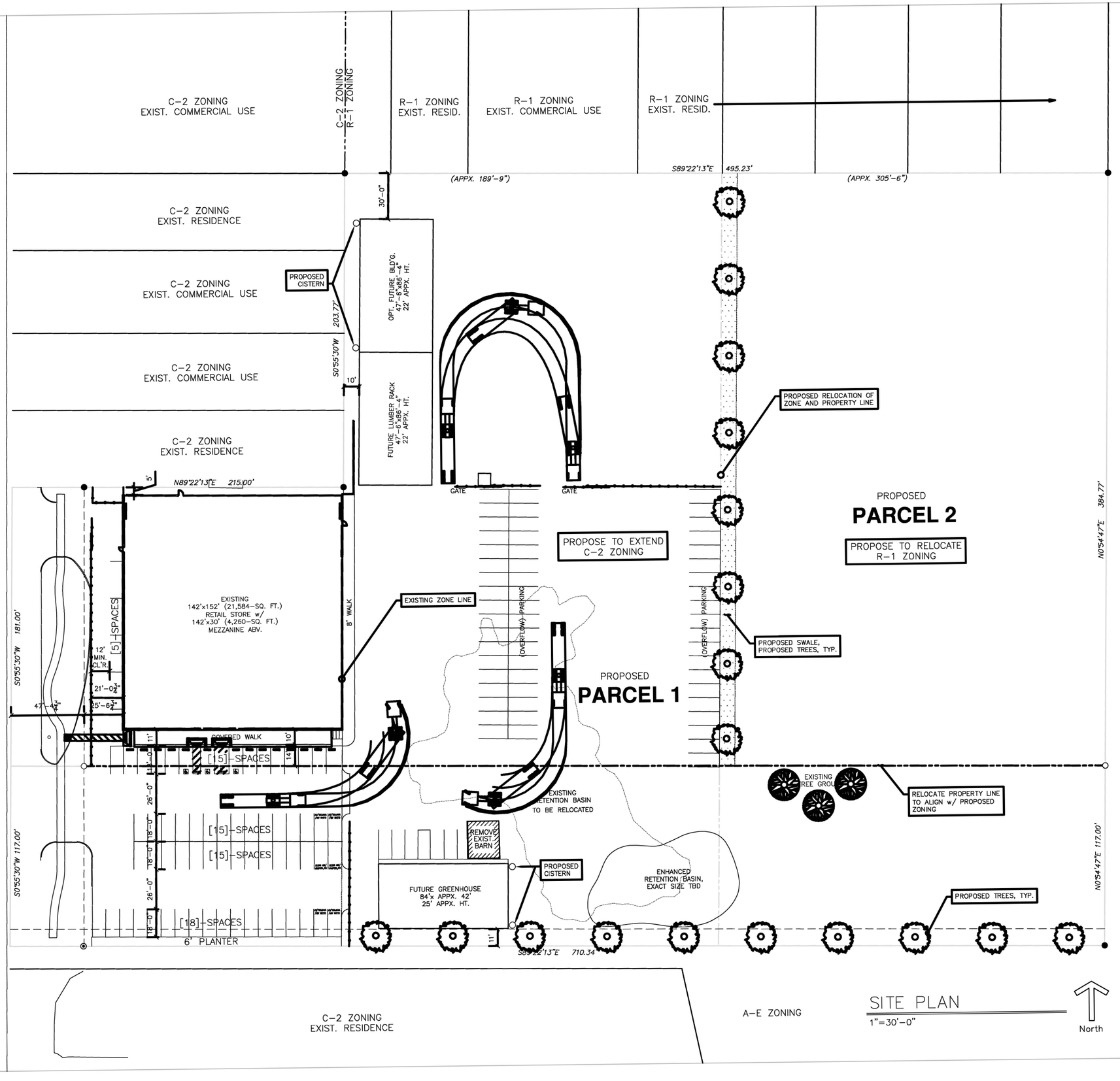


Figure 8

REVISIONS	BY
03/09/15	SJA
09/29/17	SJA

Atkins Drafting ~ Sarah J. Atkins
2846 G STREET EUREKA, CA. 95501
PH. (707) 445-3492 SJAtkins@sbcglobal.net

SITE PLAN

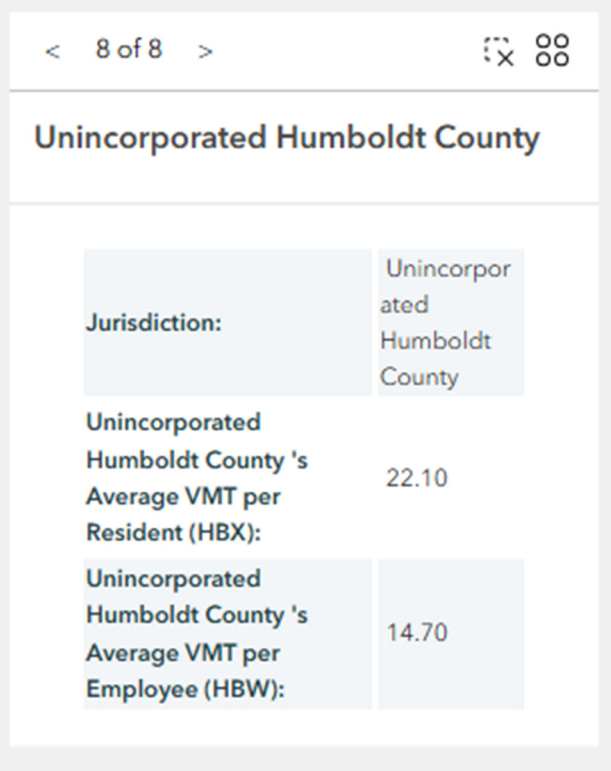
APN 510-081-001, -002

CENTRAL AVE. McKINLEYVILLE, CA.

FOR: KEVIN JENKINS PH. (707) 839-1588

Date	JAN. 26, '15
Scale	AS NOTED
Design	SJA
Drawn	SJA
Job	
Sheet	1OF1

VMT Screening



If BG Average VMT is less than 15%, then project is screened from further review.

HBX
22.10 x 0.85 = **18.785 > 13.64**

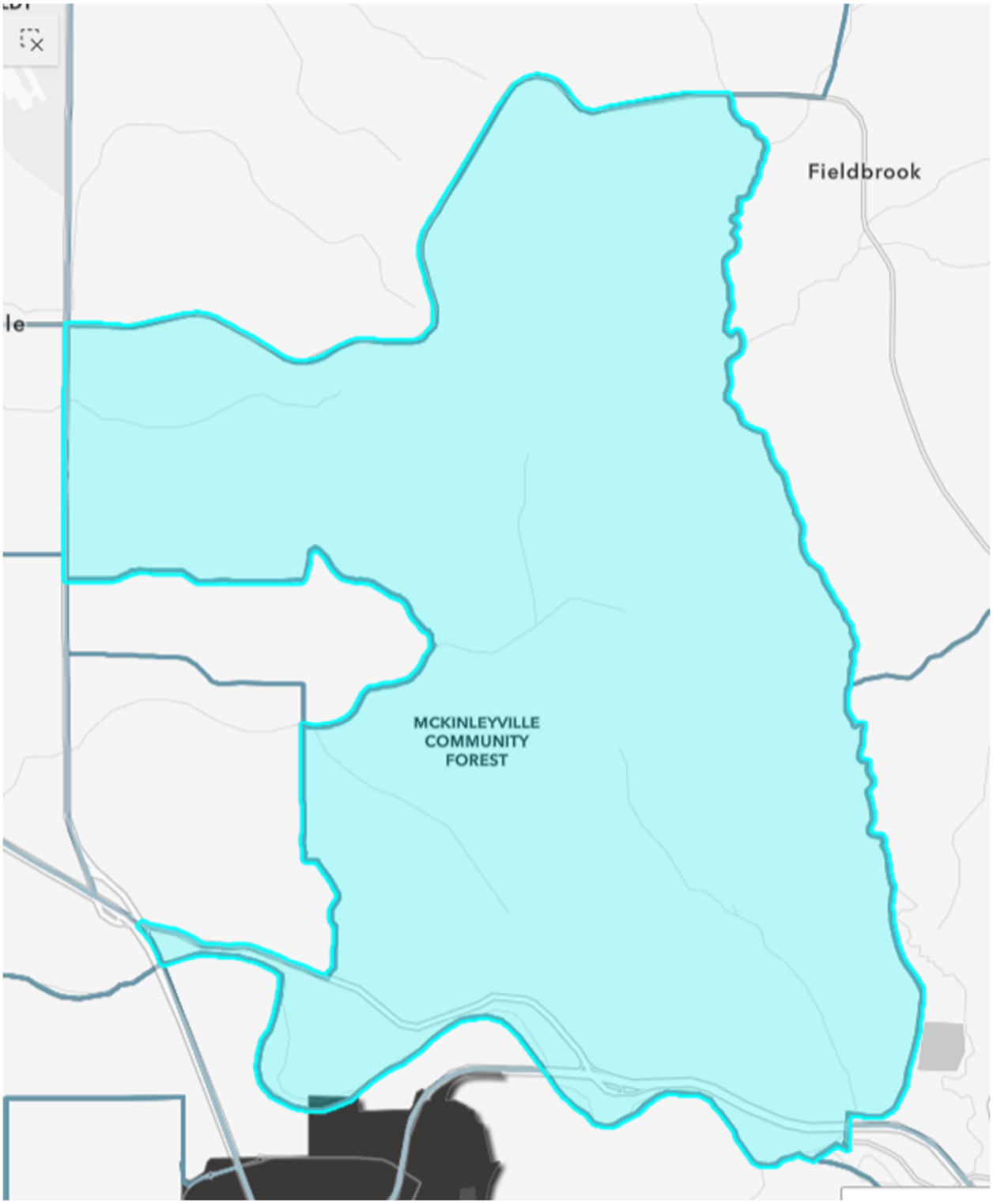
HBW
14.70 x 0.85 = **12.495 > 11.52**

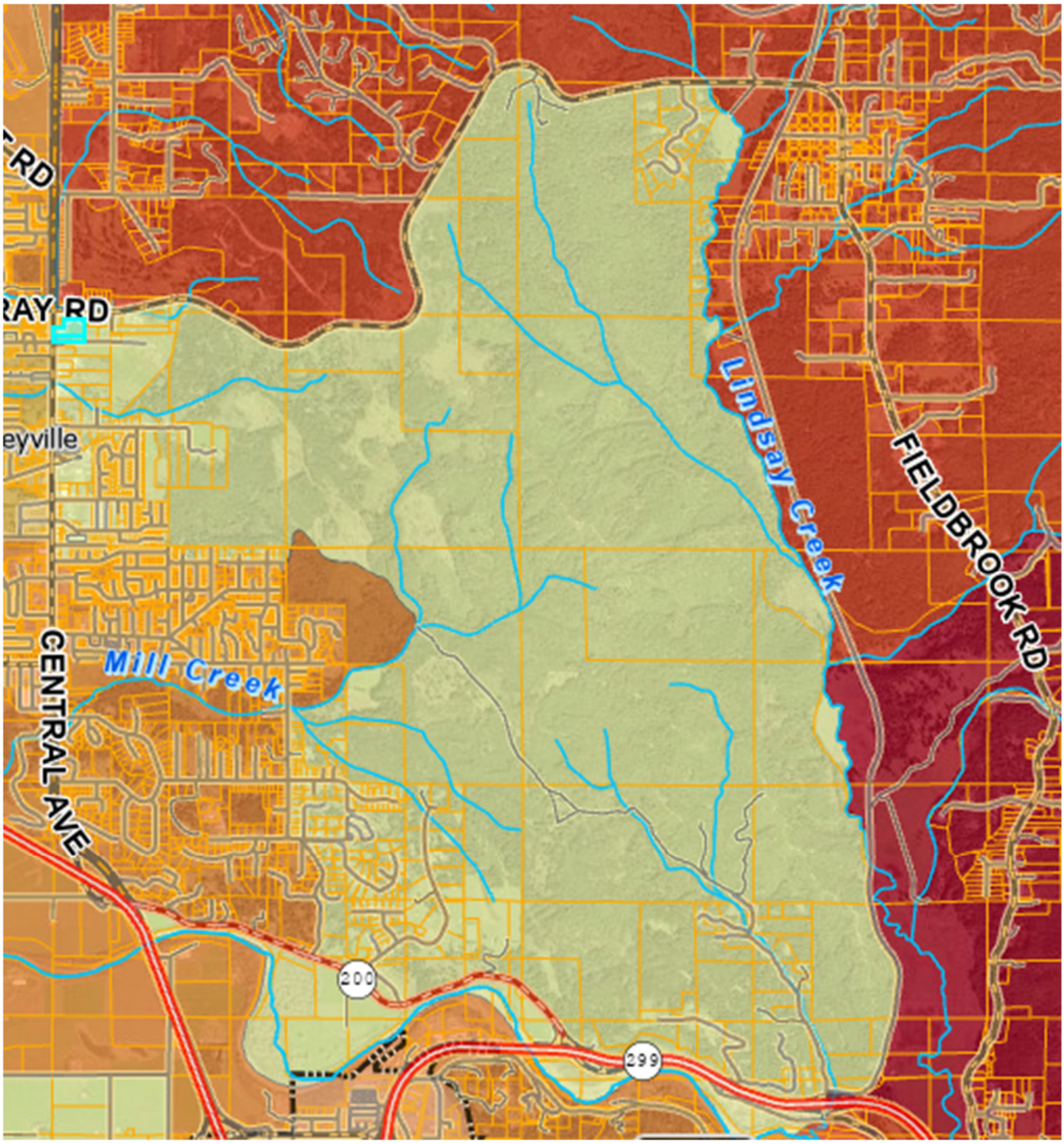
VMT per Resident (HBX)

BG Average VMT per Resident (HBX)*:	13.64
City 's Average VMT per Resident (HBX):	17.4
Unincorporated County's Average VMT per Resident (HBX):	22.1
Humboldt County Average VMT per Resident (HBX):	20.11
California Average VMT per Resident (HBX):	21.08
BG Average VMT per Resident (HBX) Percent below or above City Average:	0.62% ≥ 15% below the City average
BG Average VMT per Resident (HBX) Percent below or above Humboldt County Average:	0.68% ≥ 15% below the County average
BG Average VMT per Resident (HBX) Percent below or above State Average:	0.65% ≥ 15% below the State average

VMT per Employee (HBW)

BG Average VMT per Employee (HBW)*:	11.52
City 's Average VMT per Employee (HBW):	12.16
Unincorporated County's Average VMT per Employee (HBW):	14.7
Humboldt County Average VMT per Employee (HBW):	13.17
California Average VMT per Employee (HBW):	15.13
BG Average VMT per Employee (HBW) Percent below or above City Average:	0.78 ≥ 15% below the City average
BG Average VMT per Employee (HBW) Percent below or above Humboldt County Average:	0.87 0 - 15 % below the County average
BG Average VMT per Employee (HBW) Percent below or above California State Average:	0.76 ≥ 15% below the State average


Fieldbrook
MCKINLEYVILLE
COMMUNITY
FOREST


RD
RAY RD
eyville
Lindsay Creek
FIELDBROOK RD
Mill Creek
CENTRAL AVE
200
299