PLANNING DIVISION
HUMBOLDT COUNTY PLANNING & BUILDING DEPARTMENT
3015 H STREET | EUREKA, CA 95501

Initial Study and Draft Mitigated Negative Declaration

1. **Project Title**: Adesa Organic, LLC Conditional Use Permit and Special Permit. APNs 315-145-002, 315-211-003, 315-211-004, 315-146-018 and 315-222-003; Case Nos.: CUP16-452; Apps Nos.: 11923

2. **Lead agency name and address**: Humboldt County Planning & Building Department, 3015 H Street, Eureka, CA 95501-4484; Phone: (707) 445-7541; Fax (707) 445-7446

3. **Contact person and phone number**: Cliff Johnson, Supervising Planner (707) 268-3721; fax: 707-445-7446; email: cjohnson@co.humboldt.ca.us

4. **Project location**: The project site is located in Humboldt County, in the Maple Creek area, on the east side of Maple Creek Road, approximately 8.0 miles south from the intersection of Butler Valley Road and Maple Creek Road to a private road, on the property known to be in Section 2 of Township 03 North, Range 03 East and Section 35 of Township 04 North, Range 03 East Humboldt Base and Meridian. The site address is 23550 Maple Creek Road, Korbel, CA 95550.

5. **Project sponsor's name and address**:

Applicants	**Owners**	**Agent**
Adesa Organic, LLC	AMT, LLC	Stein Coriell, Project Planner
Attn: Laura Borusas	C/O Equity Holders Rep, LLC	SHN Engineering and Geologists
730 7th St. Suite 202.	585 Mt. Curre Blvd.	812 W. Wabash Ave.
Eureka, CA 95501	St. Paul, MN 55116	Eureka, CA 95501

6. **General plan designation**: Agricultural Grazing Density: 20-160 acres per dwelling unit; Timberland (T): 23 acres of APN 315-211-004, Density: 40-160 acres per dwelling unit; Humboldt County General Plan, Inland General Plan (2017); Slope Stability: High Instability (3).

7. **Zoning:** Agricultural Exclusive (AE), with a Special Building Site combining zone specifying that the minimum parcel size is the per the subdivision map of record (B-5); Timber Production Zone (TPZ): 13.5 acres of APN 315-211-003. No project facilities are located in the TPZ-zoned areas on the project site.

8. **Description of project**: Adesa Organic, LLC is applying for a Conditional Use Permit for 86,400 square feet of new mixed-light cannabis cultivation, a drying facility, a storage facility, associated cloning/propagation facilities and other improvements in accordance with Humboldt County Code Section 314-55.4 of Chapter 4 of Division I of Title III, Commercial Medical Marijuana Land Use Ordinance (CMMLUO). The business is proposed to operate on one legal parcel consisting of three APNs (315-145-002, 315-211-003 and 315-211-004) and totaling 443 acres, with a street address of 23550 Maple Creek Road, Korbel, CA 95550. A total of four permits are being requested in accordance with the parcel size allowances specified in section 55.4.8.2.1.1 of the CMMLUO. Four permits, two for 22,000 square feet of mixed-light cultivation and two for 21,200 square feet of mixed-light cultivation, are requested.

   The project is located in the hills south of Korbel and east of Kneeland in Humboldt County. The parcels are located northeast of the Mad River and about 6 miles south of the community of Maple Creek. The current ranch complex at 23333 Maple Creek Road was built between July and November 2004, and the pond and three small barns in the vicinity of the eastern portion of the project area were built between 2006 and 2009 (Roscoe and Associates 2017). The parcel has a history of cattle ranching, and a section was previously part of "Big Bend Ranch". No recent timber

harvest has occurred. The Adesa Organic, LLC parcels are currently under a Williamson Act contract, which has been in place prior to the current landowner obtaining the parcel. The current landowner and tenants have maintained the Williamson Act contract; cattle from a neighboring ranch currently graze on the parcel.

The IS/MND also addresses certain maintenance and repair actions to culverts and man-made reservoirs requested by the California Department of Fish and Wildlife ("CDFW") and identified in a draft Lake and Streambed Alteration Agreement ("LSAA"). One of these project's CDFW project PO-1, would remove an existing man-made instream reservoir that may be, according to CDFW, contributing sediment and warm water to Cowan Creek. CDFW Project PO-1, and all of the other maintenance and repair actions identified in the LSAA, are separate from the Adesa project for purposes of CEQA because they have independent utility. The Project does not require this work; it is requested by CDFW to address an existing condition whether or not the Project is approved. Accordingly, the IS/MND discloses the impacts of PO-1 for informational purposes.

Adesa Organic, LLC Cultivation and Associated Facilities

The project includes the use of existing facilities on the project site and proposes the construction of additional facilities:

- Existing Agriculture-Exempt Barn – Storage Space: One existing 1,664-square-foot agriculture-exempt barn constructed in 2009 is proposed to be used for agricultural storage (sheet 433A Site Map, SHN June 2019). The project proposes to install rooftop solar panels on this structure.
- Existing Agriculture-Exempt Barn – Drying Space: A second 3,200-square-foot agriculture-exempt barn constructed in 2009 is proposed as the drying facility (sheet 433A Site Map, SHN June 2019). This structure is proposed to be remodeled and expanded by about 50%.
- Proposed Cultivation Area: Two 43,200-square-foot mixed-light greenhouse cultivation areas are proposed at Site 433A (sheet 433A Site Map, SHN June 2019). These greenhouses would be a single, combined structure similar to those provided by Prins Greenhouses (Prins Greenhouses 2018) and would be equipped with light-deprivation kits that include an automated system that will pull fire-retardant, light-blocking curtains composed of three layers of polyolefin and polyester over the greenhouse sections to prevent light spillage. The greenhouses would be modularized with poly-wall separations allowing multiple, independently-controlled chambers. Greenhouse floors would be permeable. A utility area would be present on the north side of the structure and would contain the fertilizing irrigation system, electrical system, generator shed, and three 10,000-gallon water tanks. Fourteen stand-alone air conditioning units would be placed along the east side of the structure. An on-site propagation area may be utilized, at no more than 10% of the size of then total cultivation area.
- Phasing: The applicant may phase the development of the mixed-light greenhouses with an initial startup of full sun outdoor cultivation or temporary hoop houses with light dep and small wattage lighting. If small wattage lighting is used, tarps shall be manually pulled over hoop houses. The phasing will allow for less power intensive cultivation to occur while the photovoltaic system is being developed.
- Proposed Bathroom and Onsite Wastewater Disposal System: An ADA-compliant bathroom is proposed to be constructed near the existing building on APN 315-211-003 and in proximity of the existing agriculture-exempt barn that will be used as a storage area. The associated leach-fields to serve this onsite wastewater disposal system are shown on the site plan (sheet 433 A Site Map, SHN June 2019).
- Proposed Photovoltaic System and Battery Sheds: An approximately10,000-12,000-square-foot photovoltaic (PV) system is proposed with an associated 500-square-foot battery shed on the hillside to the north of the greenhouses (Borusas 2019). The PV system would be located near the proposed cultivation area (sheets 433A Site Map, SHN June 2019). The PV system is proposed to consist of an array of low, ground-mounted panels. The PV system would be constructed in sections to meet operational need.

- Proposed Generators and Diesel Tanks: Two 500-kilowatt (kW) diesel-powered generators are proposed near Site 433A (sheet 433A Site Map, SHN June 2019). The generators will be self-enclosed and will provide power to the project, in combination with the PV array and proposed rooftop photovoltaic panels. Two 5,000-gallon diesel tanks are proposed, both at Site 433A, each with adequate secondary containment required by 40 CFR 264.193(e).
- Proposed Rainwater Catchment Ponds: Two rainwater catchment ponds are proposed for construction in order to provide the primary source of irrigation water required for the cannabis cultivation operation. Pond A, proposed for a location near the processing facility (sheet C-1), will have a surface area of up to 53,835 square feet and an average depth of up to 8 feet for a storage capacity of up to 3,221,000 gallons. Pond B, proposed for a location west of the cultivation area and away from other infrastructure (sheet C-1), will have a surface area of up to 18,010 square feet and an average depth of up to 8 feet for a storage capacity of up to 1,077,000 gallons. The second pond would only be built on an as-needed basis.
- Wells: There is an existing, permitted well located to the north of the proposed cultivation area (sheet 433A Site Map, SHN June 2019), which would provide a potential source of irrigation water and sanitation water for the cultivation and processing operation. The well water would serve as a backup to rainwater catchment and would be stored in the ponds, as needed, to meet any forbearance requirements and irrigation or operational needs.
- Proposed Parking Area: The proposed parking area is located adjacent to the existing agriculture-exempt barns that will be used for drying and storage (sheet 433A Site Map, SHN June 2019), and would provide parking spaces for up to 3 shuttle vehicles identified in the applicant's transportation plan that mandates the use of company shuttles for transporting employees to the project site. One ADA-compliant parking space is proposed and is the only area in the parking lot that is proposed to be paved.

In addition to these facilities, a number of other small facilities are proposed, including fire hydrants, garbage units, compost areas, electrical service lines, water tanks and fencing (sheets 433A Site Map, SHN June 2019).

There is a third existing agriculture-exempt barn located on the project site that is not related to the cannabis activities.

Cultivation and Drying Activities

Adesa Organic, LLC proposes three harvest cycles per year. The project plans to stagger operations such that there is a harvest every week from mid-April until the first week of November. Approximately 4,104 square feet of flowering canopy will be harvested every week. Each flowering cycle is expected to take 64 days.

Cultivation activities will occur year-round, with a "hibernation period" between November and mid-January when only a portion of the "mother plant" section of the greenhouse is kept vegetated. In mid-January, the first round of clones is cultivated. First harvest occurs mid-April and continues in staggered succession until the first week of November as described above. This will require supplemental lighting during both the vegetative and flowering phases of cultivation (see Lighting). Amendments, fertilizers, nutrients and other materials used in cultivation operations will be stored in the proposed storage building. All materials are certified organic and Material Safety Data Sheets for proposed fertilizers and pesticides have been submitted to the County as part of the application.

Processing will not occur onsite. There is a proposed drying facility on APN 315-211-003. The drying room will be temperature and humidity controlled. Flowers are minimally processed at harvest, with removal of fan leaves, and then dried and cured. Trimming and packaging will occur at an offsite facility by a licensed processor. Operations will be conducted in a clean and sanitary environment and all employees will follow sanitary guidelines to prevent mold, mildew or bacterial contamination of cannabis product. Employees will have access to hand washing facilities, face masks and gloves for handling cannabis.

Hours/Days of Operation and Number of Employees
There will be approximately fifteen full-time employees and up to five part-time employees for the Adesa Organic, LLC operations. Part-time employees will be hired during harvest for up to 10 days per month. There will be at least one security guard at the greenhouse location and at the processing facility. The project proposes approximate operating hours of 9:30 a.m. to 5:00 p.m. daily.

Access/Parking
The project is accessed from Butler Valley Road which is a County-maintained road and is not identified as needing evaluation in the Humboldt County Department of Public Works referral response. From Butler Valley Road, the project site is accessed via approximately 8 miles of Maple Creek Road, which is a County-maintained road that provides access to rural residential, agricultural and public facilities, including Maple Creek School. The applicant provided documentation of evidence that the entire section of Maple Creek Road from Butler Valley Road to the intersection of the private driveway leading to the project site is equivalent to a Road Category 4 Standard. This report, accompanied by photographs, showed that much of the road is at least 20 feet wide and also documents points that are narrower than 20 feet. The road is also described as having turnouts, wide shoulders and driveway entrances in places that will allow passing.

The applicant retained SHN Consulting Engineers and Geologists to prepare a road evaluation report for the 1.1-mile section of private road between Maple Creek Road and the barn complex. The road is an average of 15 feet wide and with a grade that varies between 0-15%. The report identified the road as being very low traffic with 10 or fewer average daily trips. Recommended improvements included installing additional turnouts and rocking the surface (SHN December 2016a). The Department of Public Works referral response indicates that the intersection of Maple Creek Road and the Adesa Organic, LLC access road will need to be upgraded to meet the County visibility ordinance and encroachment ordinance standards.

Designated parking is located near the drying building and will include at least one ADA-accessible spot. The proposed parking lot would provide parking spaces for up to 3 shuttle vehicles identified in the applicant's transportation plan, in addition to spaces for 3 more vehicles and one ADA-compliant parking space. The ADA-compliant parking space is the only area in the parking lot that is proposed to be paved. Emergency vehicle turnaround is located near the proposed pond on the Adesa Organic, LLC project and is depicted on the site plans.

Traffic
The project proposes to minimize the usage of Maple Creek Road by having a company van or vans pick up employees in Eureka and Arcata each day to shuttle them to the project site for their shifts. The company shuttle will pick employees up at their places of residence in order to limit trips and greenhouse gas emissions. The transportation plan for the project requires that employees utilize these shuttles to minimize vehicle trips on Maple Creek Road. A fuel truck will visit the site every two weeks to deliver diesel fuel. The Road Evaluation Report submitted in December 2016 estimated the average daily trips to the site at 10 or fewer at full build-out, for the project.

Soils
The project cultivation activities for Adesa Organic, LLC are partially located on prime soils. The applicant has justified the move from 100% prime soils as necessary to protect cultural resources, lessen the potential impact to a Golden Eagle nest, and to overall consolidate operations. The proposed new location is on a previously graded area, approximately 40% of which is on prime soils. A prime agricultural soil assessment conducted by Dirty Business Soil Consulting and Analysis for the five APNs for Adesa Organic, LLC projects concluded that there is a total of 18.4 acres (800,365 square feet) of prime agricultural soil between the parcels (DBS 2018).

The average Storie Index rating of the mapped prime agricultural soils is 84.4%. All areas of mapped prime agricultural soil are shown on the project site plans. The slopes of all mapped areas are less than 15%. A soil fertility management plan will be used from a crop management company to

continuously test the soil nutrient levels and recommend organic amendments to rebalance the soil so that it can be recycled.

The project would have been required to incorporate mitigation measures from the cultural report prepared for the project that included covering the site with geotextile fabric and capping this area with culturally sterile fill soil. Although the proposed cultivation was 100% located on prime soils, these soils were effectively not being used.

Lighting
The applicant proposes to use mixed lighting for cultivation which means that at certain times of the year artificial lighting will be used in the greenhouse structures. The vegetative greenhouse space will have supplemental light to ensure a consistent 16 hours of sunlight every day from 6:00 a.m. to 10:00 p.m. The light plan for the flower space will also adjust with the season to ensure 12 hours of sunlight from 8:00 a.m. to 8:00 p.m. The amount of supplemental light used will depend on the sunrise and sunset times. The approximate number of hours per day that supplemental lighting will be used is contained in the lighting plan contained in the Cultivation and Operations plan submitted for the projects.

To ensure that light does not escape from the greenhouse structures at night, all illuminated areas within the greenhouse structures will be equipped with a light-deprivation kit. An automated system will prevent light spillage by drawing fire-retardant, light-blocking curtains composed of three layers of polyolefin and polyester over the lighted greenhouse sections (Borusas April 2018, Svensson 2018). During the initial phase of the project the applicant may use temporary hoop houses with low wattage lights and a manual tarp system. The CMMLUO requires that all mixed-light operations comply with dark sky standards.

Stormwater Management and Site Drainage
Development of the proposed project increases the amount of impervious surface on the parcels only slightly. The drying facility is an existing agriculturally-exempt structure that will be expanded by about 50%. The other proposed accessory structures will generally be small and detached.

The greenhouses will have permeable floors, but the greenhouses' permanently covered exteriors will create runoff. All runoff will be collected as a primary water source. Other areas, such as most of the proposed parking lot and driveways will not be turned into completely impervious surface. The ADA-compliant parking space will be fully paved. Improvements for managing road runoff are included in the Road Evaluation Report prepared by SHN Consulting Engineers and Geologists (SHN December 2016a). The project is not located in an area that is subject to Humboldt County Low Impact Development Standards.

All excess irrigation runoff will be captured and recycled through an Everfilt mixed-media filtration system. No excess irrigation water is anticipated to run off site. Site topography is relatively flat at the cultivation and processing sites, with the slopes of these sites being 5-15%. There will be erosion control measures surrounding the water tanks in case of any accidental leaking. Use of OMRI-certified organic amendments will also reduce the potential for stormwater pollution and any adverse impacts to the watershed. The Adesa Organic, LLC project is enrolled as a Tier 2 discharger under the North Coast Regional Water Quality Control Board (NCRWQCB) Cannabis Cultivation Waste Discharge Regulatory Program (CCWDRP). The Waste Discharge Identification number for the Adesa Organic, LLC project is WDID# 1B161705CHUM. A separate Water Resources Protection Plan has been developed for the project.

Riparian Habitat and Wetlands
Riparian habitat and wetlands occur in various places on the project parcels. There are five separate mapped creeks present across the two legal parcels, including Cowan Creek, two unnamed tributaries to Cowan Creek, an unnamed tributary to Wilson Creek and an unnamed tributary of the Mad River. All proposed cultivation areas, proposed support structures, and the proposed processing

facility are located outside the minimum buffers required by the Humboldt County SMAWO Ordinance.

Tree removal of trees less than 12 inches in diameter is proposed for the construction of turnouts for the 1.1-mile access road and for the new access road to the proposed pond. No other proposed project facilities require or will involve tree removal. All proposed project facilities for both Adesa Organic, LLC are in areas that have expansive, unforested natural openings.

Water Sources and Usage

Water is primarily sourced from rainwater, collected from precipitation onto greenhouse roofs and ponds. The project will be able to collect approximately 2,888,000 gallons of rainfall each year from water falling directly onto two proposed ponds. The project will also collect approximately 3,312,000 gallons annually off of the greenhouse roofs. The total water that will be collected by rainfall catchment is approximately 6,201,000 gallons annually. There is an existing, permitted well located to the north of proposed cultivation area (sheet C-2, SHN February 2018a), which would provide a potential source of irrigation water and source for the drying facility and bathroom. The well water would serve as a backup to rainwater catchment and would be stored in the ponds as needed to meet irrigation or operational needs, and subject to forbearance if determined hydrologically connected to surface waters of the State.

The Adesa Organic, LLC project proposes to install three 10,000-gallon water storage tanks at its cultivation area for a total of 30,000 gallons of hard tank storage.
The project also proposes to store water in two lined, open ponds. Pond A, located near the processing facility (sheet C-1, SHN February 2018a), will have a surface area of up to 53,835 square feet and an average depth of up to 8 feet for a total storage capacity of up to 3,221,000 gallons. Pond B, located to the east of the cultivation area, away from other infrastructure (sheet C-1, SHN February 2018a), will have a surface area of up to 18,010 square feet and an average depth of up to 8 feet for a total storage capacity of up to 1,077,000 gallons. The total available water storage among the two proposed ponds and all hard tanks is 4,330,000 gallons. However, Pond B would only be installed on an as needed basis.

Annual water usage is estimated to be 1,864,000 gallons for the Adesa Organic, LLC project. The ADA bathroom facility is also anticipated to require 468,000 gallons annually. The total annual water usage is estimated to be 2,332,000 gallons.

Drinking water for employees will be imported to the project site and provided in water coolers placed in all work areas throughout the project area.

The project site plans show an existing well on the other parcel. This is not currently proposed for use for cultivation or processing activities.

On-site Wastewater System

The project proposes a new onsite sewage disposal system to meet the needs of staff. This system will be constructed in accordance with the Humboldt County Department of Environmental Health sewage disposal system requirements. A site-specific Septic Suitability Report (SHN October 2016) has been prepared for the project in accordance with the standards of the Humboldt County Division of Environmental Health, to assess soil and groundwater conditions for this system, determine feasibility and the necessary size of the system, and guide the proposed development. The system will include toilet and handwashing facilities in the proposed ADA-compliant bathroom near the processing and storage facilities. The proposed leach fields are shown on the project site plan (Sheet 433A Site Plan, SHN June 2019).

Electrical Service

The project proposes the use of a mix of solar PV systems and generators to meet the energy demands of the mixed-light cultivation. Electrical infrastructure between generation systems and

project facilities requiring power will need to be developed. The solar PV systems will have a maximum power output of 690 kW. Rooftop solar is also proposed on the agricultural storage building.

Generators proposed for the Adesa Organic, LLC project include two 500-kW Type 4 diesel-powered units. The generators will be self-enclosed and will provide power in combination with the proposed PV system. The Adesa Organic, LLC project will use up to approximately 135,859 gallons of diesel annually. A total of up to 10,000 gallons of diesel fuel storage will be installed for the Adesa Organic, LLC project, in two separate 5,000-gallon above-ground tanks.

Security
All greenhouses and processing buildings will be under off-site wireless camera supervision, including all doors, gates, storage and processing facilities. The drying facility and greenhouses will have a security officer present during all business hours. All employees will be background screened and only managers will have keys to locked areas such as the greenhouse, drying, curing, processing and storage facilities. All doors and gates will have motion-sensor activated cameras and lights. All doors will also have sensors and wireless transmission to notify when doors are opened outside business hours. A seed-to-sale software for tracking cannabis product will be implemented as part of the project as part of state requirements. Plants will be labeled, finished product will be accounted for by plant, and exchanges between distributors will take place in places with camera supervision. Those with access to the track-and-trace system will go through mandatory compliance training.

Easements
The project will be required to secure and record an easement for perpetual use and access to the portion of the 1.1-mile access road that traverses APN 315-222-008.

9. **Surrounding land uses and setting**: The project site is located to the south of the community of Maple Creek, in a very rural area of Humboldt County. The approximately 433-acre parcel of the Adesa Organic, LLC project is currently developed with three ag-exempt structures. The other approximately 185-acre parcel is developed with an existing residence and four other ag-exempt structures. The project site is accessed by Maple Creek Road, a County-maintained road that is generally up to Category 4 standards. The Mad River is located approximately 1 mile southwest of the project area. All project facilities are located in relatively flat (<15% slope), open areas outside the 100-year flood zone. The project parcels contain prime agricultural soils and are in an area of high instability. The project parcels are surrounded by other agricultural lands, timber production lands, and rural residences.

10. **Other public agencies whose approval is required** (e.g., permits, financing approval, or participation agreement): A Lake and Streambed Alteration Agreement (LSAA) with the California Department of Fish and Wildlife will be required for work involving stream crossings. This LSAA application has been submitted, and it includes information regarding the ponds and the wells to determine hydrologic connectivity, if any. The State Water Resources Control Board, Division of Water Rights may make a separate determination regarding the connectivity of the existing and proposed wells; their permit requirements for the well sources and the ponds will be subject to this determination. A Construction General Permit will be required from the NCRWQCB. A less than 3-acre conversion exemption will be required from CALFIRE. Locally, permits from Humboldt County Building Division, Public Works Division, and Division of Environmental Health are required. A license from the California Department of Food and Agriculture will be required for the commercial cannabis cultivation prior to the start of operation.

11. **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 January 2, 2019. The Bear River Band of Rohnerville Rancheria was the only tribe that accepted the request and consultation was initiated. A cultural resources report and subsurface investigation have both been prepared by a

qualified archaeologist and the tribe has been able to weigh in on the planning process, including measures to protect culturally significant resources.

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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" as indicated by the checklist on the following pages.

☒ Aesthetics	☒ Agriculture Resources	☒ Air Quality
☒ 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	☒ Mandatory Findings of Significance

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

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

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

☐ I find that the proposed 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 proposed 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 proposed project, nothing further is required.

Signature

6.30.2020
Date

CLIFF JOHNSON
Printed name

Humboldt County Planning & Building Department
For

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take into account the whole action involved, including off-site was well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section 21, "Earlier Analyses," may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

   a) Earlier Analysis Used. Identify and state where they are available for review.

   b) Impacts Adequately Addresses. Identify which effects from the above checklist were within the scope of and adequately analyze in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   c) Mitigation Measures. For effects that are "Less Than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plan, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats, however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue identify:

a) The significant criteria or threshold, if any, used to evaluate each question; and

b) The mitigation measure identified, if any, to reduce the impact to less than significant.

CHECKLIST, DISCUSSION OF CHECKLIST RESPONSES, PROPOSED MITIGATION

1. AESTHETICS. Except as provided in Public Resources Code Section 21099, would the project:	Potentially Significant	Potentially Significant Unless Mitigation Incorp.	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) 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 points). 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?	☐	☒	☐	☐

Setting:

Humboldt County is an area of diverse visual character. The project site is a rural area characterized by rolling hills and varying topographical gradients, with extensive natural grassland open areas framed by forestland that consists of a mix of oak woodland and Douglas fir stands. The area predominantly features pasture and other agricultural land, including existing agricultural buildings and other associated agricultural improvements such as developed ponds and springs, intermixed with stands of forestland. This patchwork of open agricultural land and forest stands is spread across the diverse topography of rolling hills that varies greatly while generally sloping southward toward the Mad River. Adjoining properties include similar characteristics and uses, and there are sparse residences spread across typically large rural properties. The diverse topography of rolling hills, combined with the intermixed stands of mature forest, acts to shield the project site from surrounding viewpoints of neighboring properties and roads.

The project is accessed by an existing 1.1-mile private, gated road that travels on an upward gradient through the property from its intersection with Maple Creek Road below. Project facilities are located at elevations ranging from 2,300 to 2,360 feet elevation. Maple Creek Road, the nearest public road, is located at a mean elevation of 2,040 feet (Google Earth 2018). The project as proposed is not visible from Maple Creek Road due to the combination of distance, elevation difference, and mature forest stands obscuring the proposed operation from the road (Google Earth 2018). SR 36 is located approximately 13 miles from the project site, across the Mad River and Van Duzen River and separated by a mountain range, and the project would not be visible from any point on SR 36 because of distance and topography (Google Earth 2018). The project is located 1.5 miles from the nearest public land in the Six Rivers National Forest, and the topography precludes visibility from this publicly accessible land as well (Google Earth 2018). The project is located 1.3 miles from the Mad River at its closest point, and approximately 1,470 feet in elevation above the Mad River, with intervening forest stands and topography precluding visibility from locations along the Mad River. (Google Earth 2018).

The Mad River has not been designated under the 1968 Wild and Scenic Rivers Act (National Wild & Scenic Rivers System 2018). There are no officially designated scenic highways in Humboldt County (Caltrans 2018), and the County has not designated any resources (Humboldt County 2017a).

Analysis:

a) Finding: The project will not have a substantial adverse effect on a scenic vista. *No Impact.*

Discussion: A scenic vista is defined as a viewpoint that provides expansive views of a highly-valued landscape (such as an area of remarkable scenery or a resource that is indigenous to the area) for the benefit of the public. There are no designated scenic vistas in the area, and the project as proposed is naturally shielded from all identified opportunities for public view by a combination of distance, topography, and forest cover. No Impact would occur and no mitigation would be necessary.

b) Finding: The project will not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway. *No impact*.

Discussion: According to the California Scenic Highway Mapping System, there are no designated state scenic highways in the project vicinity. SR 36 is listed as an "Eligible State Scenic Highway," but the project site is not visible from the highway due to intervening topography, distance, and forest cover (Google Earth 2018). The project site does not contain any landmark trees, rock outcroppings, or buildings of historic significance. Therefore, the project would not contribute any impact toward substantial damage of scenic resources, including trees, rock outcroppings, or historic buildings within view of a state scenic highway. No impact would occur and no mitigation would be necessary.

c) Finding: The project will not 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). *Less than significant impact.*

Discussion: Sensitive viewer groups typically include residents, recreationists, and motorists. As described above in the "Setting" for Aesthetic Resources, the combination of intervening topography, forest cover, and distance would preclude recreationists or motorists from being able to see any infrastructure associated with the proposed project. It would be possible for up to three neighboring residences to be able to see infrastructure associated with the Adesa Organic site. The proposed, potentially visible buildings would include greenhouse structures of 86,400 square feet. The associated solar arrays for powering these structures are proposed as rooftop installations and would not be visible from adjacent properties. The potentially visible agricultural buildings would be consistent with the existing agricultural use and context of the surrounding area, and the visible structures would occupy a consolidated footprint of less than an acre combined. The consistency of the proposed structures with the agricultural context, the scope of the visual footprint, and the number of potentially affected sensitive viewers indicate that the project will not degrade the existing visual character or quality of the site and its surroundings. Potential impacts would be less than significant, and no mitigation would be necessary.

d) Finding: The project will not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. *Less than significant impact with mitigation incorporated*.

Discussion: The project proposes to use mixed lighting for cultivation, which means that at certain times of the year artificial lighting will be used in the greenhouse structures. The vegetative greenhouse space will have supplemental light to ensure a consistent 16 hours of sunlight every day from 6:00 a.m. to 10:00 p.m. The illumination plan for the flower space will also adjust with the season to ensure 12 hours of sunlight from 8:00 a.m. to 8:00 p.m. The amount of supplemental light used will depend on the sunrise and sunset times. To ensure that light does not escape from the greenhouse structures at night, all illuminated areas within the greenhouse structures will be equipped with a light-deprivation kit. An automated system will prevent light spillage by drawing fire-retardant, light-blocking curtains composed of three layers of polyolefin and polyester over the lighted greenhouse sections (Borusas April 2018, Svensson 2018). The CMMLUO requires that all cultivation lighting be shielded such that little to no light escapes and that the light source comply with International Dark Sky Association standards for Lighting Zone 0 and Lighting Zone 1. Under the CMMLUO requirements, all commercial cultivation shall be required to shield lighting,

including any low wattage mixed-light operations that occur during preliminary phases. Compliance with the ordinance requirements will ensure that cultivation lighting does not create a source of light and glare that adversely affects day or nighttime views in the area.

Outdoor lighting specifications have not yet been developed for the project. Outdoor lighting, if not properly sized and directed, can create a source of light and glare. The requirement to develop and implement a comprehensive lighting pollution prevention plan is included as a project mitigation measure, and will reduce the potential impacts to less than significant. With development and implementation of proposed mitigation, impacts would be reduced to a level of less than significant.

Mitigation:

AES-1 Light Pollution Prevention Plan

Prior to issuance of any permits or clearances the applicant shall provide to the County Planning Division a lighting plan demonstrating that all outdoor lighting for the proposed project would not deliver or have the potential to deliver light pollution, from sunset to sunrise. The lighting plan shall meet the International Dark Sky Association standards and be approved by the County Planning Division prior to the issuance of building permits.

Findings:

a) The project will not have a substantial adverse effect on a scenic vista: **No impact**.

b) The project will not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway: **No impact**.

c) The project will not 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): **Less than significant impact.**

d) The project will not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area: **Less than significant impact with mitigation.**

2. AGRICULTURE & FORESTRY RESOURCES.

	Potentially Significant	Potentially Significant Unless Mitigation Incorp.	Less Than Significant Impact	No Impact
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☒	☐
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☒	☐
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☒	☐	☐
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☒	☐

Setting:

The project site for the Adesa Organic, LLC project is one legal parcel (APNs 315-145-002, 315-211-003, 315-211-004) consisting of approximately 443 acres (Humboldt County GIS 2018). The property consists of one more adjacent legal parcel (APNs 315-146-018 and 315-222-003) consisting of approximately 185 acres (Humboldt County GIS 2018). Major portions of both properties are planned Agricultural Grazing (AG) in the Humboldt County General Plan (Humboldt County 2017a), and are zoned Agriculture Exclusive (AE), with a Special Building Site combining zone specifying that the minimum parcel size is the per the subdivision map of record (B-5).

There is a 13.5-acre patch of land on the Adesa Organic, LLC property (APN 315-211-003) that is zoned Timberland Production Zone (TPZ); no project facilities exist or are proposed in the TPZ-zoned area. There is also a separate 23-acre patch on the Adesa Organic, LLC property (APN 315-211-004) that is designated Timberland in the Humboldt County General Plan (Humboldt County 2017a). Part of this 23-acre patch of plan-designated Timberland overlaps with forest, and part of it excludes forest, instead encompassing a portion of an adjacent meadow. No project facilities other than a section of existing access road are

proposed in naturally forested areas. It should be noted that the areas zoned TPZ do not overlap the areas that are planned Timberland (Humboldt County GIS 2018).

There are additional forest stands on the subject properties, other than the areas zoned TPZ and planned Timberland. None of the proposed project facilities, aside from a small portion of the existing access road between Maple Creek Road and the project site, are located within actual forested land. The landscape consists of open meadows dominated by grassland vegetation with patches of mixed conifer and oak forest. The project is proposed for development only on the open meadow areas zoned Agriculture Exclusive.

The Farmland Mapping and Monitoring Program of the California Resources Agency has not yet mapped farmland in Humboldt County (California Department of Conservation 2018). A Prime Agricultural Soils Report prepared for the subject properties by Dirty Business Soil Consulting and Analysis, LLC, for the five APNs concluded that there is a total of 18.4 acres (800,365 square feet) of prime agricultural soil among the parcels (DBS 2018). The Prime Agricultural Soils Report used the following methodology:

- Prime agricultural soil assessments were conducted by desktop assessment of existing Natural Resource Conservation Service surveys, Humboldt County GIS portal, and field assessment to determine the Storie Index or Land Capability Classification.
- Based on the examination of previous methods, it was determined that the Storie Index could be effectively utilized to assess prime agricultural soils throughout this property.

Storie Index scores of prime agricultural soils ranged from 81-90.3% overall, with an average score of 84.4%. All sites are located on upland soils, with deep, moderately to well-developed profiles, 6-feet in depth. Surface soil texture ranges from silt loam to loam. All slopes are less than 15%, with half of the sites ranging between 0-8%, and the other half ranging between 8-14%. Drainage for all sites is moderately-well-drained to well-drained. All pH values are below 7.3, which indicates no accumulation of alkaline minerals in soil. All Electrical Conductivity measurements were below 4 dS/m indicating no accumulation of phytotoxic nutrients. Soil acidity ranges from very strongly acid to strongly acid, with pH ranging from 4.6 to 5.4. Erosion and microrelief were used to vet low-risk cultivation areas; all assessed sites had little to no erosional and microrelief features (DBS 2018). All areas of mapped prime agricultural soil are shown on the project site plans.

All project parcels for Adesa Organic, LLC are under current Williamson Act contracts, with active leases for grazing of beef cattle (Borusas April 2018).

Analysis:

a) Finding: The project will not 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*.

Discussion: A prime agricultural soil assessment conducted by Dirty Business Soil Consulting and Analysis for the five APNs concluded that there is a total of 18.4 acres (800,365 square feet) of prime agricultural soil between the parcels (DBS 2018). The average Storie Index rating of the mapped prime agricultural soils is 84.4%.

All areas of mapped prime agricultural soil are shown on the project site plans. The project site plans further indicate the placement of two contiguous 43,200 square foot mixed-light greenhouses for Adesa Organic, LLC partially on prime agricultural soil.
The Adesa Organic greenhouses were moved from a previously proposed location fully on prime agricultural soils. The change in location was necessitated by the need to avoid sensitive cultural resources at the previous site. The new location was chosen after consultation with the Bear River Band of Rohnerville Rancheria such that project impacts would be minimized. The bulk of the new

site is located on a previously graded area near other Adesa facilities, partially on prime agricultural soils.

All mixed-light greenhouses will have permeable floors as required by the CMMLUO. In addition, a soil fertility management plan from a crop management company will be implemented to continuously test the soil nutrient levels and recommend organic amendments to rebalance the soil so that it can be recycled.

In addition to the mixed-light greenhouses, additional infrastructure proposed for placement on prime agricultural soil includes a small portion of one water storage pond, an emergency turnaround area and fire hydrant. All of the proposed uses that would occur on the prime agricultural soils are agricultural uses or are considered accessory to agricultural uses. Therefore, the proposed project will not convert prime or unique farmland or farmland of statewide importance to non-agricultural use.

b) Finding: The project will not conflict with existing zoning for agricultural use, or a Williamson Act contract. *No impact*.

Discussion: The Humboldt County General Plan designates the majority of the project area as Agricultural Grazing (AG) (Humboldt County 2017a). AG lands may be used for the production of food, fiber, plants, timber, and timber agriculturally related uses. The entire project area is zoned Agricultural Exclusive (AE) with a combined zoning district of B-5(160) (Humboldt County GIS 2018). The AE zone is intended to be applied in fertile areas in which agriculture is and should be the desirable predominant use and in which the protection of this use from encroachment from incompatible uses is essential to the general welfare. Principal uses include general agricultural uses, and accessory agricultural uses and structures (Humboldt County 2018).

All project parcels for Adesa Organic, LLC are under current Williamson Act contracts, with active leases for grazing of beef cattle, and the landowner wishes to continue both the cattle grazing leases and Williamson Act enrollment (Borusas April 2018). In order to maintain compatibility between grazing and cannabis cultivation uses, an applicant-proposed operating restriction to install cattle exclusion fencing as appropriate would be included as part of the project (Borusas April 2018).

The Medical Marijuana Regulation and Safety Act, Health and Safety Code section 11362.777(a) provides that medical cannabis is an agricultural product. The facilities proposed to cultivate and process it under this application are considered accessory to the agricultural use under the Humboldt County Commercial Medical Marijuana Land Use Ordinance (CMMLUO). The CMMLUO provides for the cultivation and processing of medical cannabis within the zoning districts where agriculture is a principally permitted use, including AE-zoned parcels, with limits and in compliance with performance standards that will preserve space for more traditional agricultural activities. Based on this determination of consistency with agricultural use and agricultural zoning, Humboldt County has determined that cannabis cultivation is a compatible use on lands subject to Williamson Act contracts.

The total footprint of all proposed agricultural and accessory infrastructure for cultivation of cannabis, including the ponds, is approximately 10.75 acres. The total size of the remaining areas on these properties available for ranching activities would include approximately 612 acres. Continuing a leased ranching operation across both properties is considered viable given the proposed footprint of the cannabis operation. The project was presented to the Williamson Act committee on June 20, 2018 who voted 4-0 that the project is consistent with the Williamson Act Guidelines and the Land Conservation Contract.

Therefore, the project would result in a less than significant impact with respect to conversion of farmland to nonagricultural use, conflicts with zoning for agricultural use, or a Williamson Act contract. There would be no impact, and no mitigation is necessary.

c) Finding: The project will not conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)) or timberland (as defined in Public Resources Code section 4526). *Less than significant impact.*

Discussion: While there are forest stands on the Adesa Organic, LLC property that are zoned Timberland Production Zone (TPZ), no project facilities would be located in the TPZ-zoned areas. The project as proposed would not conflict with existing TPZ zoning, and the project's proposed installations and operations would not cause any rezoning of existing forest land.
There is one small portion of the property that is zoned TPZ, and no project elements will be proposed within this area. There is a small portion of the property designated as Timberland under the Humboldt County General Plan, however this area is almost entirely open meadow area. Only a small portion of the access driveway may encroach into this area that is planned for Timberland and no removal of timber would occur in this location. The project would not prevent the growing and harvesting of timber. The potential for timber harvest would not be affected in the short-term or the long-term by any of the proposed project's activities. Therefore, the proposed project will not conflict with existing zoning for, or cause rezoning of, forest land or timberland. Impacts would be less than significant, and no mitigation would be necessary.

d) Finding: The project will not result in the loss of forestland or conversion of forest land to non-forest use. *Less than significant impact with mitigation*.

Discussion: The installation of proposed cultivation and processing facilities—and related infrastructure such as ponds, support buildings, solar PV arrays, and other structures—is all located in natural open areas on the subject property, and would not require the removal of any trees. The proposed improvements to the 1.1-mile access road that connects project facilities to Maple Creek Road passes through forest land, and could potentially require removal of small trees in order to create the turn-outs needed to bring this section of road up to Road Category 4 equivalence, as required by Humboldt County Code. Based on the Road Evaluation Report prepared for the property (SHN December 2016a), four new turn-outs are identified, each of which is located in an area that is partially open, with trees of less than 12 inches in diameter present in some locations. The applicant would be required to secure a Less Than 3 Acre Conversion Exemption from the California Department of Forestry and Fire Protection (CALFIRE) for any tree removal associated with the proposed road upgrade. The total of all trees to be removed for the road improvements will be less than 20, all of which are under 12" in diameter at breast height (DBH) and therefore are not significant timber resources or forest habitat. With the limited scope of potential tree removal based on the turn-off locations identified in the SHN Road Evaluation Report and the requirement for permitting and conditions through CALFIRE and restocking of commercial tree species removed at a 2:1 ratio, the contributing impact of the project to the loss or conversion of forest land has been determined to be less than significant with mitigation.

e) Finding: The project will not involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use. *Less than significant impact*.

Discussion: The proposed project will not produce significant growth inducing or cumulative impacts that will result in the conversion of farmland or forest land. Growth inducing impacts are generally caused by projects that have a direct or indirect effect on economic growth, population growth, or land development. The project, at full build-out, would employ approximately 20 persons in full-time or part-time work. There would be approximately fifteen full-time employees and up to five part-time employees for the Adesa Organic, LLC operations. Part-

time employees would be hired during harvest for up to 10 days per month. The economic benefits of this proposed employment would not be such that people might be attracted to the area as a result.

On-site processing facilities would only serve this project; therefore, there is no potential for new cannabis cultivation operations to be permitted on farmland and forestland in the vicinity of the project area that would export cannabis material to the proposed facility.

Therefore, the project would not lead to a conversion of farmland to non-agricultural use or forest land to non-forest use in the area surrounding the site.

Applicant Proposed Operating Restrictions:

AFR-1. In order to maintain compatibility between grazing uses and cannabis cultivation and processing operations, cattle exclusion fencing will be installed around proposed project facilities. The proposed fence will be constructed of chain link and be 8 feet in height. This fence will directly surround the greenhouse area and appurtenant structures and will be separated from the sound dampening fencing surrounding the generator and tanks.

Mitigation:

AFR-1 Less Than 3 Acre Conversion Exemption

The applicant shall secure a Less Than 3 Acre Conversion Exemption from CALFIRE for any tree removal associated with the project, including tree removal required for the road improvements (turn-outs) identified in the Road Evaluation Report for the project.

AFR-2 Timberland Mitigation

Timber species over 12 inches in diameter at breast height shall not be removed as part of the proposed project. Prior to the initiation of cultivation activities, native timber species shall be replanted on the property at a 2:1 ratio for every commercial timber species that is removed for proposed road improvements.

Findings:

a) The project will not 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.**

b) The project will not conflict with existing zoning for agricultural use, or a Williamson Act contract: **Less than significant impact.**

c) The project will not conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)) or timberland (as defined in Public Resources Code section 4526): **Less than significant impact.**

d) The project will not result in the loss of forest land or conversion of forest land to non-forest use: **Less than significant impact with mitigation.**

e) The project will not involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use: **Less than significant impact.**

3. AIR QUALITY. Where available, the significant criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant	Potentially Significant Unless Mitigation Incorp.	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 affecting a substantial number of people)?	☐	☐	☒	☐

Setting:

The project site is located in Humboldt County, which lies within the North Coast Air Basin (NCAB). The NCAB extends for 250 miles from Sonoma County in the south to the Oregon border. The climate of NCAB is influenced by two major topographic units: the Klamath Mountains and the Coast Range provinces. The climate is moderate with the predominant weather factor being moist air masses from the ocean. Average annual rainfall in the area is approximately 50 to 60 inches with the majority falling between October and April. Predominate wind direction is typically from the northwest during summer months and from the southwest during storm events occurring during winter months.

Project activities are subject to the authority of the North Coast Unified Air Quality Management District (NCUAQMD) and the California Air Resources Board (CARB). The NCUAQMD is listed as "attainment" or "unclassified" for all the federal and state ambient air quality standards except for the state 24-hour particulate (PM_{10}) standard, which relates to concentrations of suspended airborne particles that are 10 micrometers (microns) or less in size.

In determining whether a project has significant air quality impacts on the environment, agencies often apply their local air district's thresholds of significance to projects in the review process. The District has not formally adopted specific CEQA significance thresholds, but rather utilizes the Best Available Control Technology (BACT) emissions rates for stationary sources as defined and listed in the NCUAQMD Rule and Regulations, Rule 110 – New Source Review and Prevention of Significant Deterioration, Section 5.1 – BACT (pages 8-9) (www.ncuaqmd.org).

Sensitive receptors near the project site primarily include sparse residential uses to the south and west.

Analysis:

a) Finding: The project will not conflict with or obstruct implementation of the applicable air quality plan. *Less than significant impact.*.

Discussion: The project site is located within the North Coast Air Basin which encompasses approximately 7,767 square miles. The North Coast Air Basin includes Del Norte, Humboldt, Trinity, and Mendocino counties, as well as the northern and western portions of Sonoma County. Air quality in Del Norte, Humboldt, and Trinity counties is regulated by the North Coast Unified Air Quality Management District (NCUAQMD). The NCUAQMD's primary responsibility is to achieve and maintain federal and state air quality standards, subject to the powers and duties of the California Air Resources Board (CARB). The North Coast Air Basin is currently listed as being in "attainment" or is "unclassified" for all Federal health protective standards for air pollution (ambient air quality standards). However, the air district has been designated "nonattainment"

for particulate matter less than ten microns in size (PM_{10}) under State 24-hour standards (NCUAQMD April 2018a). PM_{10} air emissions include chemical emissions and other inhalable particulate matter with an aerodynamic diameter of less than 10 microns. PM_{10} emissions include, but are not limited to, smoke from wood stoves, dust from traffic on unpaved roads, vehicular exhaust emissions, and airborne salts and other particulate matter naturally generated by ocean surf.

Applicable Air Management Attainment Plan

A potentially significant impact to air quality would occur if the project would conflict with or obstruct the implementation of the applicable air management or attainment quality plan. The NCUAQMD prepared the Particulate Matter Attainment Plan, Draft Report, in May 1995. This report includes a description of the planning area (North Coast Unified Air District), an emissions inventory, general attainment goals, and a listing of cost-effective control strategies. The NCUAQMD's attainment plan established goals to reduce PM_{10} emissions and eliminate the number of days in which standards are exceeded. The plan includes three areas of recommended control strategies to meet these goals: transportation, land use, and burning. Control measures for these areas are included in the Attainment Plan. The project design incorporates control measures identified in the PM_{10} Attainment Plan appropriate to this type of project, such as:

1) A transportation plan that requires all employees of the proposed project to vanpool in employer-provided shuttles, reducing the number of vehicle trips daily from 78 to 10 at peak shift and full build-out. This will reduce vehicle miles traveled and associated vehicular exhaust emissions generated by the proposed cannabis operations. Additionally, the reduction in the number of vehicles traveling the graveled private drive will reduce any vehicle dust generation. This measure represents a significant reduction in PM_{10} generated by traffic on the unpaved sections of Maple Creek Road and the 1.1-mile private drive.
2) The Road Evaluation Report (SHN November 2016) for the 1.1-mile section of private road that connects the proposed facility to Maple Creek Road recommends rocking the entire length of this road to improve road condition and durability; improvements to the access road are incorporated as part of this proposed project. This measure will reduce PM_{10} generated by operational traffic to the proposed cannabis facilities.
3) The project proposes to meet energy requirements through a combination of diesel generators and solar PV arrays. The solar PV arrays would meet much of the projected power need for the proposed project and reduce the amount of diesel exhaust generated, reducing PM_{10} generated by operational energy generation. However, even if diesel is used to completely meet project needs, later analysis shows that this is a less than significant impact to air quality.
4) The project involves constructing agricultural facilities on parcels predominantly zoned AE. The total footprint of all proposed agricultural and accessory agricultural infrastructure, including solar PV arrays and ponds, is approximately 184,958 square feet, or 4.25 acres. The total size of the AE-zoned areas of the cumulative associated properties is approximately 614 acres. The AE zoning regulation allows for a maximum lot coverage of 35 percent. Therefore, if the entire combined project site was developed to its maximum potential under the zoning definition, approximately 214 acres would be developed. The proposed project is consistent with the land use restrictions of the zoning ordinance, and would result in reduced ground disturbance when compared with some other agricultural land uses, which could result in ground disturbance of a larger area.
5) The proposed facility will use forced-air gas heating instead of woodstoves or fireplaces which will significantly reduce PM_{10} emissions generated from heating during long-term operation of the project.

The 1995 Particulate Matter Attainment Plan provides some insight into the severity of the 24-hour PM_{10} nonattainment status for the North Coast Air Basin. From 1989 through 1993, PM_{10} levels exceeded the standard an average of 38 days per year (NCAQMD 1995). However, the number of exceedance days in 2011, 2012 and 2013 were 6, 0 and 12, respectively (County of Humboldt 2017b). This showed a marked decrease in the severity of the nonattainment over the past few decades.

Construction Air Impacts

Mobile sources of emissions include equipment and vehicles used during short-term construction. According to NCUAQMD Rule 102, the Air District does not currently require permits for the operation of heavy equipment used for construction (except pavement burners) or agricultural operations (NCUAQMD April 2018a). There are no "target" air quality standards/limits in this area; however, heavy equipment is generally subject to off-road equipment emission standards from the California Air Resources Board (CARB), and exceeding those standards may constitute a "nuisance" condition, and can be mitigated by proper equipment maintenance. Emissions from construction equipment will occur for a limited period of time and the equipment will be maintained to meet current emissions standards as required by the CARB and the NCUAQMD.

The project has the potential to generate dust, a source of PM_{10}, from the following sources: 1) dust generated during construction from heavy equipment activity; 2) dust generated from vehicle/truck traffic on unpaved road sections during construction. All activities at the project site are required to meet NCUAQMD Air Quality standards, including Regulation 1, which prohibits nuisance dust generation and is enforceable by the District. The NCUAQMD currently enforces dust emissions according to the CA Health and Safety Code (Section 41701) which limits visible dust emissions that exceed 40% density to a maximum of 3 minutes for any one-hour period. NCUAQMD District Rule 104 states that "*reasonable precautions shall be taken to prevent particulate matter from becoming airborne*." The EPA has determined that dust generally settles out of the atmosphere within 300 feet of the source (EPA 2009).

During short-term construction activities, the following dust control measures will be implemented to reduce nuisance dust generation (See Operating Restriction AQ-1):

1. All exposed surfaces (e.g. parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. Adjacent paved public roads shall be kept clean of loose dirt tracked onto the roadways from the construction site.
4. All vehicle speeds shall be limited to 15 miles per hour.

Due to the size of the combined projects' construction footprint (approximately 4.5 acres), the comparatively large project site size (a combined 618 acres), and existing vegetation, most of the dust associated with the construction equipment use and vehicle/truck traffic would settle out on-site or be trapped by the surrounding tree canopy and vegetation on the project parcel. The measures above would reduce the total amount of dust produced. The closest sensitive receptors are the residences in the vicinity, but because of the limited activity that will occur, the rapid dissipation of the dust, and the low density of residences, impacts will be less than significant.

New Source Review and Project Emissions Estimation

The NCUAQMD Rule and Regulations, Rule 110 – New Source Review and Prevention of Significant Deterioration (NSRPSD) lists significance thresholds for new stationary sources. The rule provides for no net increase in emissions from new or modified stationary sources which emit, or have the potential to emit, 25 tons per year or more of any non-attainment pollutant or its precursors (NSRPSD page 2). BACT shall be applied to any new emissions unit for pollutants emitted in excess of the significance thresholds listed in the NSRPSD (page 7). The significance thresholds for PM_{10}

are 80 lbs/day and 15 tons/year. Offsets shall be required for new stationary sources, including generators, which have the potential to emit non-attainment pollutants in excess of 25 tons/year.

Vehicle use of the unpaved section of private drive will result in PM_{10} emissions. Assuming sufficient gravel is applied to the 1.1-mile driveway, per the Road Evaluation Report prepared for the project, the estimated PM_{10} emissions from road use is anticipated to be 0.98 ton/year. This assumes an uncontrolled vehicle-mile PM_{10} factor of 0.494 pounds of PM_{10} per mile traveled, calculated by AP-42 EPA emission factor documentation standards (EPA 2009).

An estimated supplemental light use is anticipated to be approximately 1,500 hours per year. The applicant plans to use a combination of solar and diesel generator use for supplemental lighting and HVAC power. With a project that will be developed in phases, it is difficult to estimate the generator fuel usage. However, the maximum fuel usage that will be allowed before the 15 ton/year threshold is reached can be determined. Assuming 14 tons of PM_{10} can be generated (15-ton limit, less 0.98 ton of fugitive dust emissions), the proposed project can use up to 658,000 gallons of diesel fuel per year and still remain under the required threshold. Even if solely diesel generation was used to meet the project energy needs, the projected fuel use is less than 135,859 gallons (Diesel Service and Supply 2019). With the installation of the proposed solar arrays, the project diesel usage will be far less. Based on these calculations, the project will not exceed either the significance thresholds requiring BACT or the offset threshold.

Determination

Although the proposed project would represent an incremental increase in air emissions in the air district, project-related impacts have been properly anticipated in the regional air quality planning process and will be reduced through appropriate control measures. Based on the above analysis, the proposed project would not obstruct implementation of the NCUAQMD Attainment Plan for PM_{10}. Impacts would be less than significant.

b) Finding: The project will not 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*.

Discussion: The North Coast Unified Air District is currently listed as being in "attainment" or is "unclassified" for all Federal health protective standards for air pollution (ambient air quality standards). However, under State ambient air quality standards, the air district has been designated "nonattainment" for particulate matter less than ten microns in size (PM_{10}) (NCUAQMD April 2018a).

The NCUAQMD has advised that, generally, an activity that individually complies with the state and local standards for air quality emissions will not result in a cumulatively considerable increase in the countywide PM_{10} air quality violation. In general, construction activities that last for less than one year, and use standard quantities and types of construction equipment, are not required to be quantified and are assumed to have a less than significant impact (NCUAQMD April 2018a). The project's proposed footprint and construction duration are consistent with these thresholds.

Furthermore, the analysis in part a) shows that the project does not exceed the threshold requiring BACT for new stationary sources, nor does the project pose a cumulatively considerable increase in PM_{10}, given the improving particulate matter concentrations and far fewer days that exceed the state threshold.

Therefore, the project will not 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. Impacts would be less than significant, and no mitigation would be necessary.

c) Finding: The project will not expose sensitive receptors to substantial pollutant concentrations. *Less than significant impact*.

Discussion: Sensitive receptors (e.g. children, senior citizens, and acutely or chronically ill people) are more susceptible to the effect of air pollution than the general population. Land uses that are considered sensitive receptors typically include residences, schools, parks, childcare centers, hospitals, convalescent homes, and retirement homes. Sensitive receptors near the project site primarily include sparse residential uses to the south and west.

As indicated by the air quality impact analysis under subsections a) and b), with mitigation the proposed project would not produce significant quantities of criteria pollutants (e.g., PM_{10}) during short-term construction activities or long-term operation. In addition, the proposed project would not create a carbon monoxide (CO) hot spot. Carbon monoxide hot spots are generally associated with areas where traffic reaches 100,000 vehicle trips per day. There are no project activities that generate anywhere near this sort of traffic volume of equivalent emissions.

As part of the proposed cultivation, certified organic pesticides and fungicides will be used. Nursery operations involving the application of wet or dry chemicals such as organic pesticides would be conducted inside greenhouses and therefore not susceptible to wind dispersal to sensitive receptors. Therefore, the proposed project will not expose sensitive receptors to substantial pollutant concentrations. Impacts would be less than significant and no mitigation would be necessary.

d) Finding: The project will not result in other emissions such as those leading to objectionable odors affecting a substantial number of people. *Less than significant impact*.

Discussion: During long-term operation of the project there is the potential to impact air quality due to odors that would be generated by the proposed cultivation and processing activities. Sensitive receptors near the project site are limited because of the size of the parcels and the project's location in a sparsely populated rural area.

Odors that would be generated in processing building would be abated with an air ventilation/filter system containing carbon filters to ensure odors generated by the proposed facility are minimized. Primarily because of the location of the project, and in part due to the referenced filtration system, the proposed project would not create objectionable odors affecting a substantial number of people. Impacts would be less than significant, and no mitigation would be necessary.

Applicant Proposed Operating Restrictions

AQ-1. During construction activities the following dust control measures will be implemented to reduce nuisance dust generation:

1. All exposed surfaces (e.g. parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. Adjacent public roads shall be kept clean of loose dirt tracked onto the roadways from the construction site.
4. All vehicle speeds shall be limited to 15 miles per hour.

AQ-2. All employees of the proposed project will be required to vanpool in employer-provided shuttles, reducing the number of vehicle trips on a daily basis from 78 to 10 at peak shift and full build-out, reducing vehicular exhaust emissions generated by the proposed cannabis operations, with a proportional reduction in fine particulate matter (PM_{10}) generated by traffic on Maple Creek Road.

AQ-3. The entire 1.1-mile section of private road that connects the proposed facility to Maple Creek Road will be rocked for its entire length to improve road condition and reduce dust.

AQ-4. The processing building will be designed with a ventilation/filter system to prevent dust generated from escaping the structures and impact surrounding land uses.

Findings:

a) The project will not conflict with or obstruct implementation of the applicable air quality plan: **Less than significant impact..**

b) The project will not 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.**

c) The project will not expose sensitive receptors to substantial pollutant concentrations: **Less than significant impact.**

d) The project will not result in other emissions such as those leading to objectionable odors affecting a substantial number of people: **Less than significant impact.**

4. BIOLOGICAL RESOURCES. Would the project:	Potentially Significant	Potentially Significant Unless Mitigation Incorp.	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, 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?	☐	☐	☐	☒

Setting:

A Natural Resources Assessment was conducted by SHN Consulting Engineers and Geologists (SHN 2017) for the proposed project area. Biological scoping for the Natural Resources Assessment included a review of the following sources:

- California Natural Diversity Database (CNDDB) query for the Mad River Buttes and surrounding USGS 7.5-minute topographic quadrangles (Board Camp Mtn., Grouse Mtn., Iaqua Buttes, Korbel, Maple Creek, Owl Creek, Showers Mtn., and Yager Junction);
- California Department of Fish and Wildlife (CDFW) Golden Eagle occurrence report
- Biogeographical Information and Observation System's Rarefind database;
- Electronic Inventory of Rare and Endangered Vascular Plants of California query for a list of all plant species reported for project area, and surrounding USGS. 7.5-minute topographic quadrangles;
- Special Vascular Plants, Bryophytes, and Lichens of California List from the California Department of Fish and Wildlife (CDFW);
- Special Animals of California List from the CDFW;
- United States Fish and Wildlife Service (USFWS) Information for Planning and Conservation 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 the proposed project and/or may be affected by the proposed project;
- USFWS Threatened and Endangered Species Active Critical Habitat Report GIS database;
- California Flora Database;

- California Consortium of Herbaria;
- CALFIRE Fire and Resource Assessment Program vegetation land cover dataset, "Fveg15";
- eBird Database from the Cornell Lab of Ornithology; and
- California Wildlife Habitat Relationships from the CDFW.
- Green Diamond Resource Company Northern Spotted Owl (NSO) known location data

From these sources, a list of potential target special status species for the study area was compiled. A field investigation was conducted in coordination with staff from the CDFW. A total of 98 hours of field observations were made within the study area. The site visits included seasonally appropriate surveys for botanical species reported from the region that had a moderate or higher potential for occurrence, habitat assessments were conducted for animal species during site visits, and observations were recorded (SHN 2017). Three unoccupied NSO activity centers were identified within the project vicinity, the closest of which is 1.1 miles north of the project site (SHN August 2018).

The Natural Resources Assessment reported the following wildlife habitat types within the project vicinity: Perennial Grassland, Annual Grassland, Wet Meadow, Lacustrine, Freshwater Emergent Wetland, Riverine, Montane Riparian, Redwood, Douglas-fir, Montane Hardwood, Montane Hardwood-Conifer, and Coastal Oak Woodland. Common wildlife species expected within the study area are those typically associated with grasslands, oak woodlands, and mixed coniferous forests of northwestern California (SHN 2017). The proposed project area is relatively undeveloped, and it is likely that wildlife uses nearly all portions of the project area and adjacent properties as movement corridors, and especially the perennial drainages and associated vegetation (SHN 2017).

There are five separate mapped creeks present across the two legal parcels, including Cowan Creek, two unnamed tributaries to Cowan Creek, an unnamed tributary to Wilson Creek, and an unnamed tributary of the Mad River. Both riparian habitat and wetlands occur on the two legal parcels, as discussed below.

Special Status Plant Species

Based on the Natural Resources Assessment conducted as described above (SHN 2017), 62 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, 33 plant species were considered to have a low potential to occur within the study area and 29 species to have a moderate or higher potential to occur within the study area. However, only one special status plant species, northern meadow sedge (*Carex practicola*), was observed at the site after extensive botanical surveys. This species was observed at two wetland locations within the proposed project area (SHN 2017; SHN February 2018a).

A California Natural Diversity Database (CNDDB) search of special status plant species within a 1.5-mile radius of the proposed projects sites found the following: coast fawn lily (*Erythronium revolutum*), two occurrences; and Howell's montia (*Montia howellii*), one occurrence (CNDDB 2018). Neither of these species was found within the proposed project sites.

Special Status Animal Species

The Natural Resources Assessment conducted by SHN included a review of special status animal species (SHN 2017). Of the 47 special status animal species they concluded had the potential to occur, 38 animal species were considered to have no or low potential to occur at the project site, while nine species had a moderate to high potential to occur (SHN 2017). Species with a moderate to high potential to occur included: olive-sided flycatcher (*Contopus cooperi*), black-capped chickadee (*Contopus cooperi*), red-breasted sapsucker (*Sphyrapicus ruber*), northern spotted owl (*Strix occidentalis caurina*, NSO), Sonoma tree vole (*Arborimus pomo*), Pacific tailed frog (*Ascaphus truei*), northern red-legged frog (*Rana aurora*), southern torrent salamander (*Rhyacotriton variegatus*), and western bumblebee (*Bombus occidentalis*).

The northern red-legged frog was the only special status animal species detected within the study area. This species was observed in a branch of Cowan Creek with perennial water flow; this site does not overlap with the proposed project area as depicted in the site plans (SHN 2017, SHN February 2018a). This species was also observed on June 19, 2018 by an SHN biologist in the reservoir identified by CDFW as PO-1, a project for removal in accordance with Draft LSAA 1600-2018-0047-R1.

A CNDDB search of a 1.5-mile radius around proposed project sites yielded the following results: northern spotted owl, 29 CNDDB occurrences (26 positive observations and 3 activity centers); Pacific tailed frog, two occurrences; southern torrent salamander, one occurrence; summer-run steelhead (*Oncorhynchus mykiss irideus*), one occurrence; and porcupine (*Erethizon dorsatum*), three historic occurrences (CNDDB 2018). However, based on information obtained from Green Diamond Resource Company, the closest spotted owl sites being monitored are HUM 0657 (~1.8 miles NW), HUM 1035 (~0.6 mi N) and HUM 1038 (~1.1 W) in the project area (Pacific NorthWestern Biological 2018). All sites are unoccupied as of 2018 (SHN August 2018).

The 2017 CNDDB search did not include grasshopper sparrow (*Ammodramus savannarum*) in the results and therefore was not included in the report. Subsequently, two grasshopper sparrow occurrences were documented on the property in May 2018. Potential impacts were identified and recommendations were prepared by SHN in a letter dated November 1, 2019 (SHN 2019) to the project applicant, County of Humboldt, and CDFW.

Pacific NorthWestern Biological Resources Consultants, Inc. prepared a Biological Assessment addendum for Golden Eagle and Bald Eagle as an addendum to the SHN Natural Resources Assessment (PNWB 2018). A subsequent protocol-level survey was conducted in March and April 2019, and a report documenting that survey was prepared in October 2019. (PNWB 2019). The assessment identified one known Golden Eagle nest 1.6 miles south of the primary project area, across the Mad River. Some improvements to the access drive will occur closer to the nest than the primary project area, but these improvements will be temporary and no less than 1.2 miles from the nest. No project related activities will occur any closer than 1.2 miles from the nest. The assessment includes an "Approximate suspected nest area 2018" on the map, but also indicates that in personal communication with Keith Slauson, Biologist for an adjacent project (Mad River Estates), he confirmed the bird's use of the nest in 2019 1.6 miles away for the main project site, on the south side of the Mad River. This conclusion was recently confirmed again during a survey dated March 3, 2020. (SHN survey notes March 2020.)

Special Status Species Habitats and Sensitive Natural Communities

The closest designated critical habitat is for northern spotted owl which is approximately one mile to the southwest and one and half miles to the east (ECOS 2018). Additionally, critical habitat for summer-run steelhead is mapped one mile southwest of the proposed project area along the main stem of the Mad River (ECOS 2018).

The following Sensitive Natural Communities were observed within the study area as well (SHN 2017):

Oregon white oak (*Quercus garryana*) woodland Alliance, California bay (*Umbellularia californica*) forest Alliance, and California oat grass (*Danthonia californica*) prairie Provisional Alliance. In addition, Upland Douglas-fir Forest, a CNDDB Sensitive Community, exists within one mile of proposed project areas.

Riparian habitat and wetlands occur in various places on each of the project parcels, including five separate mapped creeks with associated riparian habitat. Streamside Management Areas (SMAs) for these waterways are mapped in the Humboldt County GIS. SHN Consulting Engineers and Geologists prepared a Preliminary Jurisdictional Wetland and Other Waters Delineation report for the project area. The report concluded that there are fourteen three-parameter riverine and palustrine wetlands present on the project site with a total area of 2.64 acres (114,869 square feet). SHN also identified approximately 0.69 acre (30,224 square feet) of "Other Waters of the U.S." by determining the location of the ordinary high-water mark (OHWM) along the various drainages on the parcels (SHN December 2016b).

All locations with a shrub or tree canopy layer within the study area may provide suitable nesting habitat for a diverse assemblage of resident and migratory birds. Additionally, some species may nest in tall grasses or wetland areas. Water courses and their associated riparian zones may also provide wildlife movement corridors due to their complex structure, providing cover and hiding places from predators.

Analysis:

a) Finding: The project will not have a substantial adverse effect, either directly or through habitat modifications on any special status species listed on local or regional plans, policies or regulations, or by the California Department of Fish and Wildlife (CDFW) or the United States Fish and Wildlife Service (USFWS). *Less than significant impact with mitigation incorporated*.

Discussion: As described above, SHN Consulting Engineers and Geologists prepared a Natural Resources Assessment of the project site. The study concluded that 28 species of special status plants have a moderate potential to occur within the study area, and one species is present. Northern meadow sedge was the only listed plant encountered, and both populations occur within wetland areas. The study also concluded that eight species of special status animals have a moderate potential to occur within the study area, and only one species was documented as present. California red-legged frog was observed in a branch of Cowan Creek with perennial water flow; no part of the project is proposed for the area where the occurrence was documented (SHN 2017, SHN February 2018a). The documented occurrence of this species in June of 2018 was within the direct influence of CDFW project PO-1, which is not a part of the Project but nevertheless included for informational purposes. Supplemental information to the Natural Resources Assessment to include grasshopper sparrow (Ammodramus savannarum) was prepared by SHN in November 2019. The grasshopper sparrow makes inconspicuous ground nests in short grass prairies. Impacts to this species may occur if construction activities occur during the nesting season. This species migrates to southern climates in the fall and is not expected to occur at the project site from September through March. With incorporation of Mitigation Measure Bio-8, these impacts can be reduced to less-than-significant.

Pacific NorthWestern Biological Resources Consultants prepared an addendum that addressed Northern Spotted Owl. There are three unoccupied NSO activity centers in the project vicinity, the closest of which is 1.1 mile from the project site. According to this addendum the project will not result in the removal of NSO habitat.

Pacific NorthWestern Biological Resources Consultants also prepared an addendum in 2018 that addressed Golden Eagle as well as a subsequent protocol-level survey for Golden Eagle in 2019. Protocol-level surveys for Golden Eagle were also completed by SHN Consulting Engineers in 2020. These reports confirmed: (i) the Project site is well located with an adequate buffer distance away (i.e. greater than one mile)from the nearest golden eagle nest as well as observed flight paths of the golden eagle individuals themselves, and (ii) the Project site provides lower quality habitat in comparison to much higher habitat that is abundantly available closer to the nest site for this pair of golden eagles. The documented GOEA nest site is located at approximately 1,000 feet above sea level, which is approximately 1,320 feet below the project site at approximately 2320 feet above sea level. No improvements from the project will be in the line of sight from the GOEA nest or from observed perches and flight paths of the eagles.

All project related impacts (both temporary and permanent) are over 1 mile from the known nesting site. The project is consistent with the US Fish and Wildlife Service Pacific Southwest Region Migratory Birds Program recommended Buffer zones for Ground-based Human Activities around Nesting Sites of Golden Eagles in California and Nevada (December 2017, USFWS) which recommends a one-mile no-disturbance buffer surrounding golden eagle nesting sites in California and Nevada. This document recommends a no-disturbance buffer of 1 mile for most human activity, including industrial, agricultural, and construction activity.

Due to the potential for some of these species to exist at the project site, the SHN Natural Resources Assessment (SHN 2017) contains recommendations to reduce potential impacts. These have been incorporated into mitigation measures that will reduce project impact levels to less than significant. The general measures proposed include the following:

- The project must attempt to avoid impacts to special status species and habitats present within the study area, specifically the two northern meadow sedge populations, northern red-legged frog habitat, wetlands and SMAs, Oregon white oak woodlands, California bay forests, and California oat grass prairies. Where project construction activities occur within close proximity (100 feet) to special status resources, these resources must be demarcated by high visibility construction fencing during the project construction period in a manner sufficient to avoid unintentional impacts. See measure BIO-6.
- If impacts to special status resources occur as a result of road crossing improvements, these impacts must be mitigated at a 3:1 ratio. See measure BIO-4.
- Construction-related ground disturbance activities, such as, grading and culvert repair projects, must include an erosion and sediment control plan that includes Best Management Practices (BMPs) to avoid and minimize sediment transport.
- Limit ground disturbance and vegetation clearing to the minimal extent necessary to accomplish project goals.
- All constructed ponds must be kept free of American bullfrog (*Lithobates catesbeianus*) infestations to prevent this non-native species from impacting special status aquatic species, such as, the northern red-legged frog. See measure BIO-2.
- Project-related vegetation clearing should occur outside the bird nesting season, which is generally considered to be March 15 through August 1. 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 in those locations by a qualified biologist to ensure that active nests are not destroyed or disturbed.
- 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 of the project area.
- Refrain from the improper storage or use of any fuels, fertilizer, pesticide, fungicide, rodenticide, or herbicide.
- For any proposed mixed-light cultivation, shield greenhouses so that little to no light escapes.

In the referral response of the California Department of Fish and Wildlife commenting specifically on the potential impacts of the proposed project (CDFW 2017), there is a recommendation to consider the potential for noise and light impacts to wildlife, including northern spotted owl, and a request that the project be accompanied by both a noise pollution prevention plan and a light pollution prevention plan that minimize these potential impacts.

Noise impacts from the proposed project were analyzed in a series of three acoustic studies (Hybrid Tech February 2018, Hybrid Tech April 2018, Frank Hubach and Associates 2020). The acoustic studies focused on attaining the standard of 50dB at 100 feet or the edge of northern spotted owl habitat, whichever is closer. The studies found that the project, if properly mitigated for noise reduction, would produce 47 dB at the acoustic receiver modeled at the treeline nearest to the proposed generators. The acoustic study's proposed noise mitigation measures have been included as mitigation measure NOI-1, and are detailed in this Initial Study under Section 12 for Noise. Specific actions of the mitigation measure include:

- 8-foot-tall block wall and supplemental 2-foot barrier of not less than two pounds per square foot surface weight surrounding the generators
- 8-foot-tall block wall and supplemental 4-foot barrier of not less than two pounds per square foot surface weight surrounding the array of RTUs

- The block walls shall be continuous with solid metal doors with neoprene door jams. The walls shall be a minimum of 8 inches thick and be constructed of solid block or be filled after construction with grout or sand.

Based on the application of this mitigation measure, the Adesa Organic, LLC site is not anticipated to have a significant impact. Additional mitigation includes the requirement that all sites must comply with the noise standard of 50 dBA at 100 feet or treeline, whichever is closer (Mitigation NOI-3).

There is also the potential for construction-related noise to impact northern spotted owl. To reduce the potential for construction noise impact to special status species, mitigation measure BIO-1 has been added to the project requiring that no construction work will occur in the northern spotted owl nesting season (February 1st- July 31st). A wildlife biologist with experience in northern spotted owl protocol determined that while the general area has northern spotted owl presence, site specific avoidance measures are not necessary (Pacific NorthWestern Biological 2018). This was based on an assessment that no suitable NSO nesting habitat is found within 0.25-mile of the project, no timber of significant size is being removed, and the project is shown to be compliant with the noise criteria. Regardless of northern spotted owl presence, no proposed activity generating noise levels 20 or more decibels above ambient noise levels or with maximum noise levels above 90 decibels may occur during the northern spotted owl nesting season. Additionally, mitigation measure NIO-3 will ensure that ongoing operations do not cause noise impacts that could disturb the species.

The project proposes to use supplemental lighting in mixed-light greenhouses, which will sometimes occur during nighttime hours. To ensure that light does not escape from the greenhouse structures at night, all illuminated areas within the greenhouse structures will be equipped with a light-deprivation kit. An automated system will prevent light spillage by drawing fire-retardant, light-blocking curtains composed of three layers of polyolefin and polyester over the lighted greenhouse sections. During initial phases of the project which may occur in temporary hoop houses with low wattage lighting, tarps will be used to shield all lighting. County ordinance requires that all cultivation lighting be shielded such that little to no light escapes.

Outdoor lighting specifications have not yet been developed for the project. Outdoor lighting, if not properly sized and directed, can create a source of light and glare. The requirement to develop and implement a comprehensive lighting pollution prevention that meets IDSA requirements for Lighting Zone 1 and Lighting Zone 2 per the CMMLUO and requires County approval AES-1 and detailed in this Initial Study in Section 1 under Aesthetics.

The potential introduction of the non-native and invasive American bullfrog *(Lithobates catesbeianus*) into the proposed water catchment ponds could have potentially adverse impacts on the northern red-legged frog, which has been documented on the subject property as described in the SHN Natural Resources Assessment (SHN 2017). A mitigation measure (BIO-2), has been added to prevent the bullfrog from becoming established in the proposed rainwater catchment ponds and thus reduce the potential for impact to the northern red-legged frog.

As pumps will be used to transport water to and from the rainwater catchment ponds, there is the potential for adverse impact to amphibians, including the northern red-legged frog, of being drawn into pumps. A mitigation measure (BIO-3) has been added to the project that will require water pumps used for the operation to contain screens meeting the CDFW fish screening criteria in order to protect amphibian species, including the northern red-legged frog.

With the application of these mitigation measures, the proposed project will not 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 CDFW or USFWS.

b) Finding: The project will not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. *Less than significant impact with mitigation*.

Discussion: As analyzed in the SHN Natural Resources Assessment, several Sensitive Natural Communities are present on the associated properties, including Oregon white oak, California bay forest, and the California oat grass prairie. In addition, Upland Douglas-fir Forest exists within one mile of the project area. Because the proposed project involves new construction on existing building sites and open, grassland areas, and does not include removal of any trees of greater than 12 inches dbh, there will not be any significant impact on Oregon white oak, California bay or Upland Douglas-fir forests. Further, project facilities have been sited in areas avoiding California oat grass prairie (SHN 2017 and SHN February 2018a).

Riparian habitat and wetlands occur in various places on each of the project parcels, including five separate mapped creeks with associated riparian habitat. Streamside Management Areas (SMAs) for these waterways are mapped in the Humboldt County GIS. SHN Consulting Engineers and Geologists prepared a Preliminary Jurisdictional Wetland and Other Waters Delineation report for the project area. The report concluded that there are fourteen three-parameter riverine and palustrine wetlands present on the project site with a total area of 2.64 acres (114,869 square feet). SHN also identified approximately 0.69 acre (30,224 square feet) of "Other Waters of the U.S." by determining the location of the ordinary high-water mark along the various drainages on the parcels (SHN December 2016b).

All proposed cultivation areas, proposed support structures, and the proposed processing facility are located outside riparian habitat as delineated for the project area (SHN February 2018a). One existing agriculture-exempt structure is partially located within the 100-foot SMA buffer of Cowan Creek; this site is not in a delineated jurisdictional wetland.

In one location, a water pipe is proposed to be installed in a roadway that crosses a stream. Several proposed improvements to the access road between the Adesa Organic, LLC parking lot and the intersection with Maple Creek Road will also require stream crossing improvements (SHN December 2016a), as Class II watercourses intersect with the road. These improvements will be conducted in the dry season during low to no water flow. A section of the access road between the two parcels, which is proposed for realignment and improvement, is also within the 50-foot SMA buffer near wetlands (SHN February 2018a). These project components present the potential for impact to riparian vegetation. The total disturbance that may occur to riparian habitat as a result of the road improvements and culvert replacements is expected to not exceed 3,000 square feet of area (Humboldt County GIS analysis, SHN Road Evaluation 2017, CDFW draft LSAA 2018) and are intended to improve riparian habitat through upsizing culverts.

A mitigation will be added to the project (BIO-4) requiring the replacement of any riparian vegetation and other impacted special status vegetation alliances, at a 3:1 ratio, that are impacted by actions associated with the project identified above. The replacement of vegetation will occur at appropriate locations on the project site and could include the enhancement of existing wetland and riparian areas at the site. A mitigation plan will be prepared by a qualified biologist and submitted to regulatory agencies for review and concurrence prior to any construction that encroaches on SMAs, wetlands, or riparian areas.

To protect the riparian habitat and wetlands on the project site during construction activities, another mitigation measure (BIO-5) has been added to the project requiring installation and maintenance of temporary fencing on the edge of SMAs and delineated wetlands immediately adjacent to the project. The fencing will be installed prior to the beginning of construction activities and will be removed after the final inspection is completed by the Building Division. The

fencing will prevent construction equipment from encroaching into an SMA or wetland and impacting riparian and wetland habitats. Additionally, another mitigation measure (BIO-6) requires fencing around other sensitive biological communities when project activities will occur within 100 feet of these communities.

With the application of these mitigation measures, the proposed project will not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

c) Finding: The project will not 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 impact.*

Discussion: There are five separate mapped creeks present across the two legal parcels, including Cowan Creek, two unnamed tributaries to Cowan Creek, an unnamed tributary to Wilson Creek and an unnamed tributary of the Mad River.

SHN Consulting Engineers and Geologists prepared a Preliminary Jurisdictional Wetland and Other Waters Delineation report for the project area (SHN December 2016b). The report concluded that there are 14 three-parameter riverine and palustrine wetlands present on the project site with a total area of 2.64 acres (114,869 square feet). SHN also identified approximately 0.69 acre (30,224 square feet) of "Other Waters of the U.S." by determining the location of the ordinary high-water mark along the various drainages on the parcels. Therefore, a total of 3.33 acres (145,093 square feet) of Waters of the U.S. have been identified on the project sites.

All proposed cultivation areas, proposed support structures, and the proposed processing facility are located outside of delineated wetlands and "Other Waters of the U.S." In one location, a water pipe is proposed to be installed in a roadway that crosses a stream. Several proposed improvements to the access road between the Adesa Organic, LLC parking lot and the intersection with Maple Creek Road will also require stream crossing improvements (SHN December 2016a), as Class II watercourses intersect the road. A section of the access road between the two parcels, which is proposed for realignment and improvement, is also within the 50-foot SMA buffer near wetlands (SHN February 2018b).

No filling, hydrological interruption, or other impacts to wetlands or regulated waters are anticipated from the proposed scope of work associated with the project. Potential habitat impacts are discussed and mitigated above in section b). The project as proposed and in compliance with regulatory requirements would not have a substantial adverse effect on federally protected wetlands through direct removal, filling, hydrological interruption, or other means. Impacts would be less than significant, and mitigation would not be necessary.

CDFW project PO-1 (in accordance with the Draft LSAA) is for the purpose of removing an existing instream reservoir that may be, according to CDFW, contributing sediment and warm water to Cowan Creek. This project, which is unrelated to the Project because it is being requested by CDFW to address an existing condition whether or not the Project is approved, includes stream channel restoration. A permit from the North Coast Regional Water Quality Control Board is being sought for this project. This discussion is provided for informational purposes only.

d) Finding: The project will not 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 impact.*

Discussion: The project's fully built-out footprint not including road construction and improvements, is approximately 10.75 acres. This includes the proposed pond and undeveloped areas between

Adesa Organic, LLC site 433A infrastructure. The total area of the associated parcels is approximately 618 acres. The proposed project is not sited in riparian areas, oak woodlands, or coniferous forests—areas identified in the SHN Natural Resources Assessment as the principal wildlife corridors (SHN 2017). Because of the project's avoidance of habitats and areas that are principal wildlife corridors, and because the footprint of the proposed project is relatively small in the context of the surrounding lands that will remain undeveloped, the impact to wildlife movement is anticipated to be less than significant. In addition, the Adesa Organic, LLC project has consolidated operations to a single site. The cultivation sites will no longer straddle one of the main riparian corridors passing through the parcel.

Wildlife can be expected to generally avoid those areas of development proposed under the project, but project sites will not interrupt likely existing wildlife corridors. In addition, no new large-scale fencing is proposed for the project that could impede the movement of wildlife. The cattle exclusion fencing will be limited to the area directly surrounding the greenhouses and will be constructed within riparian buffers. Additionally, there are no further improvements proposed within riparian buffers aside from water and electrical lines that will be placed within the existing road alignment and crossing.
Therefore, the proposed project will not 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. The impact will be less than significant, and no mitigation is necessary.

e) Finding: This project does not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. *Less than significant impact with mitigation measures.*

Discussion: Removal of trees less than 12 inches in diameter is proposed for the construction of turnouts for the 1.1-mile access road that connects project sites with Maple Creek Road; the California Department of Forestry and Fire Protection (CALFIRE) has indicated that a Less than 3-Acre Conversion Exemption will be required for any tree removal associated with the proposed project. Mitigation is also proposed to require that all commercial timber species removed shall be replaced t a 2:1 ratio. The requirement to secure a valid Less than 3-Acre Conversion Exemption is included as mitigation measure AFR-1 and the requirement for restocking is included as mitigation measure AFR-2and are detailed in this Initial Study under Agriculture and Forestry Resources. This mitigation measure is consistent with regulations established in Humboldt County's Commercial Medical Marijuana Land Use Ordinance (CMMLUO) regarding tree removal associated with cannabis cultivation.

No other proposed project facilities require or will involve tree removal. All proposed project facilities are located in areas that have expansive, unforested natural openings, and are not zoned Timberland Production Zone. As established natural openings, these areas of the proposed project do not require a Less than 3-Acre Conversion Permit or documentation in a Registered Professional Forester's Timberland Conversion Report.

In addition to the policies guiding the stewardship of biological resources in the CMMLUO and in the Humboldt County General Plan (Humboldt County 2017a), the County maintains Streamside Management Areas (SMAs) to protect sensitive fish and wildlife habitats and to minimize erosion, runoff, and other conditions detrimental to water quality. All proposed cultivation areas and other processing areas are located outside the minimum 100-foot buffers required by the Humboldt County Streamside Management Area Ordinance.

One existing agriculture-exempt structure is partially located within the 100-foot SMA buffer of Cowan Creek. The proposed project also includes installation of rooftop solar on the agriculture-exempt building partially within the SMA buffer zone. Several proposed improvements to the access road between the Adesa Organic, LLC parking lot and the intersection with Maple Creek

Road will require stream crossing improvements (SHN December 2016a), as Class II watercourses intersect with the road. The SMA expressly allows "maintenance, construction, replacement or construction" of such necessary roadways within the buffer zone. (County Code, § 61.1.9.3.1.1.) The overall impact of improving this road within the SMA will likely cause the least amount of environmental impact. The project will require a discretionary permit for improvements of the access roads identified above, construction of water lines and other ancillary facilities, and for permitting the existing agriculture-exempt structure and its continued maintenance within the SMA buffer zone. By securing and following the requirements for development in a SMA, and by incorporating mitigation measures BIO-4 and BIO-5 as described in section c) as applicable in SMAs, impacts would be reduced to a level of less than significant.

In addition, CDFW project PO-1 is located within this SMA. Project PO-1, which includes removing an existing man-made instream reservoir that may be, according to CDFW, contributing sediment and warm water to Cowan Creek, is expressly allowed under the SMA. (General Plan Policy BR-S6 (authorizing "fishery, wildlife and aquaculture enhancement and restoration project").) CDFW Project PO-1 is unrelated to the Project because it is being requested by CDFW to address an existing condition whether or not the Project is approved, and is accordingly discussed here for informational purposes only.

Therefore, with mitigation as appropriate, this project does not conflict with any local policies or ordinances protecting biological resources. The impacts are less than significant with mitigation.

f) Finding: The project will not 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*.

Discussion: According to the USFWS Environmental Conservation Online System (ECOS 2018), the project site is not located within any adopted Habitat Conservation Plans for Humboldt County.

Habitat Conservation Plans in Humboldt County include the following: 1) Green Diamond Resource Company California Timberlands& Northern Spotted Owl (formerly Simpson Timber Company); 2) Humboldt Redwood Company (formerly Pacific Lumber, Headwaters); and 3) Regli Estates. These Habitat Conservation Plans primarily apply to forest lands in the County, and none of those forest lands overlap with the proposed project.

Therefore, the project will not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. There is no impact, and no mitigation is necessary.

Mitigation:

See AES-1, , NOI-1, NOI-2, and NOI-3 for mitigation measures that are also required to limit impacts to biological resources to less than significant.

BIO-1 Limits of Construction Period for Northern Spotted Owl and other raptors

No construction work shall occur during the northern spotted owl nesting season (February 1st- July 31st) unless a wildlife biologist with experience in northern spotted owl protocol surveys completes a biological assessment of the property to determine whether the area has northern spotted owl presence and whether site specific avoidance measures are necessary to avoid any impact to the species. Any measures developed by the biologist must be adhered to during the nesting season. Regardless of northern spotted owl or other raptor presence on the property, no proposed activity generating noise levels 25 or more decibels above ambient noise levels or with maximum noise levels above 90 decibels shall occur at 100 feet from the project site or edge of habitat, whichever is closer, during the northern spotted owl nesting season.

BIO-2 Pond Maintenance to Prevent Bullfrog Infestation

All constructed ponds shall be kept free of American bullfrog infestations to prevent this non-native species from impacting special status aquatic species, such as the northern red-legged frog. To prevent significant bullfrog populations from developing due to the aquatic environment provided by the rainwater catchment ponds, the following measures shall be implemented as part of the project:

a) Controlling the bullfrog population following colonization will be achieved by draining the rainwater catchment ponds throughout the summer until no water remains at the end of the principal cultivation and irrigation period. This shall be repeated for 2 years to disrupt bull frog life cycles.
b) Direct removal methods shall be used, should de-watering be ineffective for the removal of bullfrog populations.
c) Monitoring for bullfrog populations shall occur on an annual basis in order to prevent subsequent establishment.

BIO-3 Screening of Water Pumps

To prevent impacts to wildlife species including amphibians and reptiles during the term of the project, water pumps used for the operation shall contain screens meeting the CDFW fish screening criteria (http://www.dfg.ca.gov/fish/Resources/Projects/Engin/Engin_ScreenCriteria.asp).

BIO-4 Replacement of Riparian Vegetation and Special Status Vegetation Alliances

Any riparian vegetation and special status vegetation alliances (identified in section 6.3.2 of the Natural Resources Assessment prepared by SHN) that are impacted by project activities, including but not limited to road improvement and maintenance, shall be replaced at a 3:1 ratio. The replacement of riparian vegetation will occur on the project site and could include enhancement of existing wetland and riparian areas. A mitigation plan will be prepared and submitted to regulatory agencies for review and concurrence prior to any construction that encroaches on SMAs, wetlands, or riparian areas.

BIO-5 Fencing During Construction to Protect Wetlands and Streamside Management Areas

To protect the riparian habitat at the project site during construction activities, temporary fencing shall be installed and maintained on the edge of SMAs and delineated wetlands. The fencing shall be installed prior to the beginning of construction activities and shall be removed after the final inspection is completed by the Building Department.

BIO-6 Demarcation of Special Status Biological Resources

To protect special status biological resources, all resource populations, including the two northern meadow sedge populations, northern red-legged frog habitat, Oregon white oak woodlands, California bay forests, and California oat grass prairies, must be demarcated by high visibility construction fencing during the project construction period in a manner sufficient to avoid unintentional impacts when project construction activities (aside from transportation along roads) will occur within 100 feet of these resources.

BIO-7 Minimize Northern red-legged frog impacts

To protect northern red-legged frogs during restoration activities in CDFW project PO-1, conduct excavation activities August-October.

BIO-8 Nesting Bird Surveys to Protect Migratory Birds including Grasshopper Sparrow

Project-related vegetation clearing should occur outside the bird nesting season, which is generally considered to be March 15 through August 1. 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 in those locations by a qualified biologist to ensure that active nests are not destroyed or disturbed.

Findings:

a) The project will not 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: **Less than significant impact with mitigation.**

b) The project will not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service: **Less than significant impact with mitigation.**

c) The project will not 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 impact.**

d) The project will not 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 impact.**

e) The project will not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance: **Less than significant impact with mitigation.**

f) This project will not 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.**

5. CULTURAL RESOURCES. Would the project:	Potentially Significant	Potentially Significant Unless Mitigation Incorp.	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §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?	☐	☒	☐	☐

Setting:

A cultural resources study for the project site was prepared prior to approval of the CMMLUO Permits for the cannabis cultivation operations proposed on the site. The study included a records search, Native American Heritage Commission (NAHC) inquiry, coordination with local tribes, and pedestrian survey of the site (Roscoe and Associates 2017). In addition, a Phase II Subsurface Investigation of the *Cowan Creek 433 Site A* was conducted (Roscoe and Salisbury 2017).

The project area is within the ethnographic territory of the Mad River Whilkut tribe. As part of preparation for a cultural resources survey, representatives of the Whilkut Tribe, Bear River Band of the Rohnerville Rancheria THPO were contacted. Erika Cooper, Rohnerville Rancheria THPO, was present during archaeological field investigation as a Native American representative on December 14, 2016 and helped formulate recommendations regarding protection of cultural resources during the proposed project (Roscoe and Associates 2017).

A search of records at the Northwest Information Center (NWIC) revealed that a portion of the project area has been subject to previous cultural resources investigation, and that a total of four cultural resources surveys have been conducted within ¼ mile of the proposed project (Roscoe and Associates 2017). These investigations collectively resulted in the identification of three Native American archaeological sites within ¼ mile study area. Site P-12-1969 is located outside of the direct project area, approximately 40 meters east of the project road forming the private driveway at 23333 Maple Creek Road (Roscoe and Associates 2017). The other two archaeological sites are more than 180 meters from the current project area. These sites will be avoided during the project.

At the time of the pedestrian survey, the project site was mostly undeveloped and used for grazing and hay production. Two surface resources were identified: Cowen Creek 433 Site A and Cowen Creek 433 Site B (Roscoe and Associates 2017). Based on surface observations of a moderately-dense lithic scatter, Cowen Creek 433 Site A was subjected to a Phase II subsurface investigation which consisted of manual excavation of three half-meter-square units and one meter-square unit. Sixteen hand auger samples to determine the limits of the feature were also taken. The subsurface investigation resulted in a recommendation for eligibility for the California Register of Historic Resources under Criterion 4 as well as possibly under Criterion 1 (Roscoe and Salisbury 2017). Upon further consultation with the THPO of the Bear River Tribe, the greenhouse locations were moved and consolidated to an area away from the highest concentration of Native American artifacts.

Analysis:

a) Finding: The project would not cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5. *Less than significant with mitigation incorporated.*

Discussion: A Cultural Resources Investigation of the project site conducted by Roscoe and Associates in April 2017 found no historical resources as defined in CEQA, Article 4, 15064.5 (a).

Although no historic-age resources were found during the records search, tribal coordination, or field survey, there is always the possibility that previously unknown historic resources exist below

ground surface. There is the potential for subsurface excavation activities to uncover previously unknown subsurface archaeological resources. Implementation of standard cultural resource construction mitigation (Mitigation Measure CUL-2) regarding inadvertent discovery would reduce potential impacts to a level of less than significant.

b) Finding: The project would not cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5. *Less than significant with mitigation incorporated.*

Discussion: A Cultural Resources Investigation of the project site conducted by Roscoe and Associates in April 2017 found two archaeological resources as defined in CEQA, Article 4, 15064.5 (a). Two pre-contact resources have been recorded within the project site, and upon notification of the results of the cultural resources survey, the THPO of Bear River expressed concerns. A Phase II subsurface investigation of Cowen Creek 433 Site A, resulted in a recommendation for eligibility for the California Register of Historic Resources under Criterion 4 as well as possibly under Criterion 1. Subsequent to the excavation in June 2017, a meeting was held on July 13, 2017 with Bear River Tribal Council member Edwin Smith, THPO Erika Cooper, and Mr. Roscoe. At that meeting, the Bear River agreed that the proposed cannabis cultivation greenhouses and other proposed project elements be constructed within the identified archaeological site, provided that specific mitigation measures are followed.Subsequent to this meeting the County, THPO Erika Cooper and the applicant met on May 9, 2019 to discuss relocating the proposed cannabis cultivation greenhouses to keep all disturbance out of the area of the identified archaeological site. Updated plans showing the revised location were submitted to Bear River THPO on June 26, 2019. The revised location will allow for the archaeological site to remain undisturbed. All project related impacts will not be constructed within the area of the identified archaeological site.

In addition, the implementation of standard cultural resource construction mitigation (Mitigation Measure CUL-2) regarding inadvertent discoveries will be applied to the entire project.

The application of these mitigation measures would reduce potential impacts to a level of less than significant (Roscoe and Salisbury 2017).

With the proposed mitigation measure, the proposed project would not directly or indirectly destroy a unique paleontological resource or site or unique geological feature.

c) Finding: The project would not disturb any human remains, including those interred outside of formal cemeteries. *Less than significant impact with mitigation incorporated.*

Discussion: As indicated in the Cultural Resource Investigation completed by Roscoe and Associates (2017), there are no known human remains on the project site. However, due to the potential of discovering unknown human remains during the proposed construction activities, the inadvertent discovery protocol recommended in the Cultural Resources Investigation has been included as Mitigation Measure CUL-2 (see discussion under subsection b) above).

With the proposed mitigation measures, the proposed project would not disturb any human remains.

Mitigation:

CUL-1 Protocols for Construction Specific to Cowen Creek Documented Site

1. A qualified, trained archaeological monitor must be present during the mechanical excavation of soils and sediments from the pond area.
2. All project-related activities involving heavy equipment (excavators, bulldozers, pickup-trucks, etc.) adjacent to the archaeological site boundaries; which includes the location of the

greenhouse, leach fields, photovoltaic installation, sheds, etc., must be conducted with an archaeological monitor present.

3. It is also recommended that all project-related ground disturbance activities in the vicinity of both archaeological sites identified be monitored by qualified cultural resources monitors.

CUL-2 Inadvertent Discoveries of Cultural and Paleontological Resources, and Human Remains

The following provides means of responding to the circumstances of a significant discovery during the cultural monitoring of the final implementation of the proposed agricultural development within the project parcel. If cultural materials for example: chipped or ground stone, historic debris, building foundations, or bone are discovered during ground-disturbance activities, work shall be stopped within 20 meters (66 feet) of the discovery, per the requirements of CEQA (January 1999 Revised Guidelines, Title 14 CCR 15064.5 (f)). Work near the archaeological finds shall not resume until a professional archaeologist, who meets the Secretary of the Interior's Standards and Guidelines, has evaluated the materials and offered recommendation for further action.

In the event that paleontological resources are discovered, work shall be stopped within 20 meters (66 feet) of the discovery and a qualified paleontologist shall be notified. The paleontologist shall document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in CEQA Guidelines Section 15064.5. If fossilized materials are discovered during construction, excavations within 66 feet of the find shall be temporarily halted or diverted until the discovery is examined by a qualified paleontologist. The paleontologist shall notify the appropriate agency to determine procedures that would be followed before construction is allowed to resume at the location of the find.

If human remains are discovered during project construction, work will stop at the discovery location, within 20 meters (66 feet), and any nearby area reasonably suspected to overlie adjacent to human remains (Public Resources Code, Section 7050.5). The Humboldt County coroner will be contacted to determine if the cause of death must be investigated. If the coroner determines that the remains are of Native American origin, it is necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the NAHC (Public Resources Code, Section 5097). The coroner will contact the NAHC. The descendants or most likely descendants of the deceased will be contacted, and work will not resume until they have made a recommendation to the landowner or the person responsible for the excavation work for means of treatment and disposition, with appropriate dignity, of the human remains and any associated grave goods, as provided in Public Resources Code, Section 5097.98.

Findings:

a) The project will not cause a substantial adverse change in the significance of a historical resource as defined in §15064.5: **Less than significant impact with mitigation incorporated.**

b) The project will not cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5: **Less than significant impact with mitigation incorporated.**

c) The project will not disturb any human remains, including those interred outside of formal cemeteries: **Less than significant impact with mitigation incorporated.**

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

Setting:

The Adesa Organic, LLC project includes the development of 86,400 square feet of mixed-light cannabis cultivation. This is the primary project activity which requires the bulk of total energy demand. Besides cannabis cultivation, the project also includes the use of two existing ag-exempt structures for cannabis drying and materials storage, plus the development of several outbuildings, a photovoltaic array and battery storage, a new ADA-compliant restroom, and at least one off-stream pond.

The State of California has the ambitious goal of obtaining all electric power from 100% renewable resources by 2045. The State uses the Renewable Portfolio Standard (RPS) to incrementally move toward this goal year over year, with an interim target of 60% of electricity generated from renewable sources by 2030. The RPS applies to large investor-owned utilities, electric service provides, and community choice aggregators. The standards are not directly applied to energy consumers, but they do illustrate the state goals for obtaining energy from renewable sources.

The Humboldt County 2017 General Plan Energy Element outlines the goals, policies, standards, and implementation measures regarding energy resources within the County. Goals include increasing energy efficiency and conservation, increasing the energy supply from renewable resources, reducing transportation energy consumption, and moving Humboldt County toward energy self-sufficiency.

Analysis:

a) Finding: The project will not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction of operation. *Less than significant impact with mitigation incorporated.*

Discussion: Mixed-light cannabis cultivation requires electrical energy for supplemental lighting, ventilation and air conditioning, nutrient and water pumping, and other cultivation-related activities. The Adesa Organic, LLC project has provided a lighting schedule that shows how many hours of supplemental light will be necessary to achieve the desired growth schedule, with greater requirements during the winter months when there are fewer hours of natural daylight. The proposed energy source for the supplemental lighting and greenhouse ventilation units is a mix of diesel generators and photovoltaic arrays.

The project's maximum diesel usage without any photovoltaic installation is approximately 135,859 gallons per year at full build-out. This is roughly 61,430 kWh per day of energy consumption for all the various project elements.

The potential use of over one hundred thousand gallons of diesel represents a significant unnecessary energy consumption for cannabis cultivation. Mitigation is proposed to ensure that the project develops adequate solar generation capacity that reduces diesel consumption to primarily times when solar generation is unreliable (i.e. extended periods of overcast or cloudy weather). While not a code requirement for this project as the project was submitted and reviewed under the CMMLUO, the CCLUO requires a minimum of 80% non-renewable sources for

energy needs. This CCLUO standard was developed to limit wasteful, inefficient, or unnecessary consumption of energy resources and with this standard the EIR for the CCLUO was determined to not have a significant impact on energy consumption and resources. Accordingly, application of this standard as a mitigation measure for the proposed Adesa Organics, LLC project is justified and will reduce the potential impact of unnecessary consumption to a less than significant level. The proposed mitigation requires that the project source a minimum of 80% of their electrical energy from renewable sources. Alternatively, the project could interconnect into the local grid and obtain renewable electrical energy from a local utility.

With this mitigation measure implemented (Mitigation ENE-1), the project will not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, specifically diesel fuel, during project construction of operation.

b) Finding: The project will not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. *Less than significant impact*.

Discussion: The Adesa Organic, LLC project plan to use a combination of solar photovoltaic arrays and diesel generators to meet project energy needs. The project is not connected to the electrical grid and will develop and maintain its own, independent electrical energy generation system. The project proposes to meet at least 50% of its electrical energy needs from renewable sources within 3 years and 80% of its electrical energy needs from renewable sources within 6 years of operation.

If the project is ever interconnected to the local grid the electrical energy would be provided by Pacific Gas and Electric Company. Assuming PG&E maintains its ability to meet the state RPS requirements, the project would not conflict with or obstruct these standards. The project will not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Note: While the project as proposed by the applicant would not obstruct a state or local plan for renewable energy, mitigation is proposed by the county that will further increase the project's reliance on renewable energy.

Mitigation:

ENE-1 Renewable Energy Generation Standards
The applicant shall ensure a minimum of 80% of project electrical energy is generated by renewable sources. This shall be accomplished through the use of solar arrays on-site with generator for backup. Alternatively, the project could interconnect into the local grid and obtain electrical energy from a local utility providing power generated from up to 80% renewable sources.

Findings:

a) The project will not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction of operation: **Less than significant impact with mitigation incorporated**.

b) The project will not conflict with or obstruct a state or local plan for renewable energy or energy efficiency: **Less than significant impact**.

7. GEOLOGY AND SOILS. Would the project:	Potentially Significant	Potentially Significant Unless Mitigation Incorp.	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?	☐	☐	☒	☐
b) 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 waste water 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?	☐	☒	☐	☐

Setting:

The Safety Element of the Humboldt County General Plan (Humboldt County 2017a) describes the Geologic Resources that occur within the County, and Humboldt County Web GIS contains geologic hazard data for the subject property (Humboldt County GIS 2018). A Geotechnical Report was produced for this specific site assessing geologic conditions and risk factors, and measures to address risks (SHN November 2016). The Division of Mines and Geology Special Publication 42 delineates Alquist-Priolo earthquake zones (Division of Mines and Geology 2018). All of these sources were used in preparation of this section.

Surface Description

The project site is located off Maple Creek Road, approximately 20 miles southeast of Eureka, California. The subject parcel consists of open hillside pastures and some forested areas along riparian zones. The proposed developments are in the open pastures, avoiding forested areas, drainages, and delineated wetlands. Existing slopes in the vicinity of proposed features have a generally southern aspect and slope gradients ranging from relatively level to approximately 30%. Project infrastructure is all proposed in areas with a slope of less than 15%. Elevations range from 2,300 to 2,360 feet above mean sea level.

Geology and Soils

Based on geologic mapping (Fraticelli 1987), the project site is located on a tectonic mélange, referred to as the Central Belt of the Franciscan Complex, consisting of resistant blocks in a highly sheared argillaceous matrix. Areas in the vicinity of the site are mapped as having a high presence of sandstone.

The areas of proposed development are underlain by one to several feet of dark brown, soft to stiff sandy silt topsoil. Shallow weathered sandstone bedrock was found at a depth of 1 foot in an area near the proposed ADA bathroom/ shower facility; this area appears to have been previously graded. Shallow bedrock can also be expected on the tops of the broad "knobs" that exist on the open hillside pastures. In areas where shallow bedrock is absent, the dark brown sandy silt topsoil is underlain by light brown, medium dense silty sand, with increasing amounts of gravel with depth, and bedrock at depths of 6 feet and greater. A test pit located near the East Cowan Creek drainage encountered silty gravel at a depth of 6 feet. Groundwater was not encountered in any of the four test pits dug for the Geotechnical Report (SHN November 2016). In general, the shallow soil column (that is, the upper 10 feet) can be expected to vary spatially over the project area, with varying thickness of topsoil and depth to bedrock. Based on the results of field and laboratory testing, including and analyzing the results of 8 test pits, the geologic subgrade at the project site is classified as Site Class C (very dense soil and soft rock), in accordance with Table 20.3-1 in American Society of Civil Engineers ASCE 7-10 (ASCE 2010).

Seismicity

The site and entire Northern California Region are located in a seismically active area. Division of Mines and Geology Special Publication 42 does not show any Alquist-Priolo earthquake zones within or nearby the project site. Further geologic reconnaissance and review of published geologic data do not indicate that active faults are mapped through or adjacent to the site, nor is there any geomorphic evidence of prior faulting (SHN November 2016). The Eaton Roughs fault zone is mapped approximately one-third mile to the west; however, this fault zone is not thought to have moved in recent times (last movement estimated as occurring 750,000 to 1.6 million years ago) (USGS and CGS 2006). Thus, the probability of surface fault rupture is considered to be very low. Humboldt County Web GIS identifies the subject property as having a Seismic Safety Classification of 3, which is High Instability (Humboldt County GIS 2018), and the Geotechnical Report for the site emphasizes that the foundations for any planned structures should be designed to resist earthquake shaking (SHN November 2016). Based on the absence of young (Holocene-age), loose, saturated, non-cohesive soils in the project area, the site's susceptibility to liquefaction is considered very low (SHN November 2016), and according to Humboldt County GIS data, the subject property is not subject to liquefaction.

Slope Stability

Slope stability refers to the landslide susceptibility of slope-forming materials, which increases in areas of high seismicity, steep slope, and high rainfall, but may be triggered by any of the following: (1) type and structure of earth materials; (2) steepness of slope; (3) water; (4) vegetation; (5) erosion; and (6) earthquake-generated ground shaking.

Slopes within the proposed development areas range from near-level to 15%, with all proposed development located on slopes of less than 15%. Areas adjacent to proposed development have slopes ranging up to approximately 30%. No evidence of slope failure was observed during site reconnaissance for the Geotechnical Report, and the slope stability hazard was characterized as low (SHN November 2016). Humboldt County Web GIS data does not identify any areas of historic landslides on the subject property (Humboldt County GIS 2018).

Analysis:

a) i) Finding: The project will not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving 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 Divisions of Mines and Geology Special Publication 42. *Less than significant impact.*

Discussion: Seismically induced ground rupture is defined as the physical displacement of surface deposits in response to an earthquake's seismic waves. The magnitude and nature of fault rupture can vary for different faults or even along different strands of the same fault. Surface rupture can

damage or collapse buildings, cause severe damage to roads and pavement structures, and cause failure of overhead as well as underground utilities.

There are no earthquake faults delineated on Alquist-Priolo Fault Zone maps within the project area (Division of Mines and Geology 2018). The Eaton Roughs fault zone is mapped approximately one-third mile to the west; however, this fault zone is not thought to have moved in recent times, with the last movement estimated as occurring 750,000 to 1.6 million years ago (USGS and CGS 2006). Thus, the probability of surface fault rupture is considered to be very low. Since the project area is not traversed by a known active fault and is not within 200 feet of an active fault trace, surface fault rupture is not considered to be a significant hazard for the project site.

Therefore, the project will not expose people or structures to substantial adverse effects from a fault rupture.

a) ii) Finding: The project will not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking. *Less than significant impact with mitigation incorporated.*

Discussion: Earthquakes on active faults in the region have the capacity to produce a range of ground shaking intensities in the project area, as ground shaking may affect areas hundreds of miles distant from an earthquake's epicenter. Ground motion during an earthquake is described by the parameters of acceleration and velocity as well as the duration of the shaking. Because the project site is located within a seismically active region, some degree of ground motion resulting from seismic activity in the region is expected during the long-term operation of the project.

The State of California provides minimum standards for building design through the California Building Code (CBC). Where no other building codes apply, CBC Chapter 29 regulates excavation, foundations, and retaining walls. The CBC applies to building design and construction in the State and is based on the federal Uniform Building Code used widely throughout the country. The CBC has been modified for California conditions with numerous more detailed and/or more stringent regulations. Specific minimum seismic safety and structural design requirements are set forth in CBC Chapter 16. The Code identifies seismic factors that must be considered in structural design. The Geotechnical Study prepared for the project site in support of this proposed project (SHN November 2016) concluded that the project as proposed is the project is feasible and safe from a geotechnical standpoint, provided that the Geotechnical Study's recommendations are implemented during design and construction. The major geotechnical considerations for development of the proposed structures and foundations include the potential for strong seismic shaking and the variability of the soil column over the project area (particularly, thickness of topsoil and depth to bedrock). The Geotechnical Report makes a number of recommendations specific to the project and the site, in the areas of (1) Site Preparation and Grading, (2)Foundations for Structures, (3) Engineered Fill, (4)Water and Diesel Tanks, (5)Solar Array, (6) Greenhouse Structures, (7) ADA Parking Area, and (8) Other Considerations. Mitigation Measure GEO-1 includes all of the site-specific recommendations of the Geotechnical Report, and would reduce the risks and impacts to a level of less than significant.

Therefore, with the proposed mitigation measures, the proposed project will not expose people or structures to substantial adverse effects involving strong seismic ground shaking.

a) iii) Finding: The project will not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction. *Less than significant impact*

Discussion: Liquefaction is a phenomenon whereby unconsolidated and/or near-saturated soils lose cohesion and are converted to a fluid state as a result of severe vibratory motion. The relatively rapid loss of soil shear strength during strong earthquake shaking results in temporary, fluid-like behavior of the soil. Soil liquefaction causes ground failure that can damage roads, pipelines, underground cables and buildings with shallow foundations.

According to the Humboldt County Web GIS system, the project site is not designated as an area subject to liquefaction. Further, based on the absence of young (Holocene-age), loose, saturated, non-cohesive soils in the project area, the site's susceptibility to liquefaction is considered very low (SHN November 2016). Design and construction of the project would incorporate appropriate engineering practices to ensure seismic stability as required by the California Building Code (CBC). The project would not expose people or structures to potential substantial adverse effects involving seismic-related ground failure, including liquefaction. Impacts would be less than significant and no mitigation would be necessary.

a) iv) Finding: The project will not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides. *Less than significant impact.*

Discussion: Slope failures, commonly referred to as landslides, include many phenomena that involve the downslope displacement and movement of material, either triggered by static (i.e., gravity) or dynamic (i.e., earthquake) forces. Earthquake motions can induce significant horizontal and vertical dynamic stresses in slopes that can trigger failure. Earthquake-induced landslides can occur in areas with steep slopes that are susceptible to strong ground motion during an earthquake. The youthful and steep topography of the coast range is known for its potential for landslides.

Slopes within the proposed development areas range from near-level to 15%, with all proposed development located on slopes of less than 15%. Areas adjacent to proposed development have slopes ranging up to approximately 30%. No evidence of slope failure was observed during site reconnaissance for the Geotechnical Report, and the slope stability hazard was characterized as low (SHN November 2016). Humboldt County Web GIS data does not identify any areas of historic landslides on the subject property (Humboldt County GIS 2018). Based on these paired analyses, the potential risk to people or structures from landslide is determined to be low, and there will be a less than significant impact.

Therefore, the proposed project will not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides.

b) Finding: The project will not result in substantial soil erosion or the loss of topsoil. *Less than significant impact.*

Discussion: This project proposes the new installation of infrastructure for the cultivation and processing of cannabis products. Grading, ground disturbance, and the removal of on-site groundcover and vegetation within the project footprint will occur during construction of the proposed structures, access roads, parking areas, rainwater catchment ponds, water lines, water tanks, septic system, solar PV arrays, generators, and diesel tanks. As described on the Proposed Site Plan, the footprint of the project's facilities covers approximately 184,958 square feet, or 4.25 acres. Cut earthwork will be reused onsite. The size of the area identified for soil removal and its relatively level slope is not anticipated to contribute a significant impact to soil erosion.

Building Code requirements relating to soil stability will be adhered to during construction as part of the Building Permit. Given the relatively flat topography of the project site and that the project's Conditions of Approval stipulate employment of Best Management Practices (BMP's) and the standard erosion control measures of the Humboldt County General Plan, the project is

not expected to result in significant soil erosion or loss of topsoil during the construction phase or for the life of the project.

The project does not involve the removal of any vegetation outside of the project footprint that could result in erosion. Roof runoff will be directed to the rainwater catchment tanks, which will pump the water to ponds for use in irrigation activities. Proposed buildings and facilities are set back at least 100 feet from the nearest surface water features. The potential to impact the hydrology of the drainage features adjacent to the site is discussed in Section 9 (Hydrology and Water Quality), along with appropriate mitigation and applicant-proposed operating restrictions to minimize impacts to a less than significant level.

Therefore, the proposed project will not result in substantial soil erosion or the loss of topsoil.

c) Finding: The project will not 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.*

Discussion: Slopes within the proposed development areas range from near-level to 15%, with all proposed development located on slopes of less than 15%. Areas adjacent to proposed development have slopes ranging up to approximately 30%. No evidence of slope failure was observed during site reconnaissance for the Geotechnical Report, and the slope stability hazard was characterized as low (SHN November 2016). Further, Humboldt County Web GIS data does not identify any areas of historic landslides on the subject property (Humboldt County GIS 2018).

The Geotechnical Report, in assessing hazards, did not identify any possibility of lateral spreading or subsidence associated with the site-specific geology of the proposed project area or on any portion of the subject property.

According to the Humboldt County Web GIS system, the project site is not designated as an area subject to liquefaction. Based on the absence of young (Holocene-age), loose, saturated, non-cohesive soils in the project area, the site's susceptibility to liquefaction is considered very low (SHN November 2016).

Therefore, the proposed project will not 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) Finding: The project will not be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property. *Less than significant impact.*

Discussion: Expansive soils possess a "shrink-swell" characteristic. Shrink-swell is the cyclic change in volume (expansion and contraction) that occurs in fine-grained clay sediments from the process of wetting and drying. Structural damage may occur over a long period of time due to expansive soils, usually the result of inadequate soil and foundation engineering or the placement of structures directly on expansive soils.

The geotechnical report prepared for the property identified the soils at the project site as having a low expansive potential (SHN November 2016). Therefore, the project would not be located on expansive soils creating substantial risks to life or property. Impacts would be less than significant and no mitigation would be necessary.

e) Finding: The project will not have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water. *Less than significant impact.*

Discussion: The project is located in a rural area approximately 8 miles east of the community of Maple Creek which does not have a wastewater treatment system. As such, the proposed project will be served by a new on-site wastewater treatment system. As shown on the Site Map, a bathroom facility will be located east of the existing agricultural-exempt storage building, and primary and 100% reserve leach fields serving the on-site wastewater treatment system will be located just east of the two 43,200 square foot greenhouses. Ground elevations of the leach field areas range from approximately 2,308 to 2,312 feet for the primary area and 2,317 to 2,319 for the reserve area. The ground elevation of the bathroom facility addition is 2,305 feet. Due to the required gain in elevation, effluent from the bathroom facilities' holding tanks will be pumped westward approximately 400 feet and disposed of in a shallow, low pressure pipe distribution system. The 200-foot portion of this 400-foot delivery that follows the roadway alignment and crosses the eastern branch of Cowan Creek will be encased in conduit, to protect the drainage and provide additional integrity to withstand vehicular traffic loads (SHN October 2016).

A site-specific Septic Suitability Report has been prepared for the project in accordance with the standards of the Humboldt County Division of Environmental Health, to assess soil and groundwater conditions for this system, determine feasibility, and guide the proposed development. The scope of the report's field and laboratory investigation included a site reconnaissance, excavation of soil test pits and percolation test holes, and laboratory textural analysis of soil samples collected from the test locations. The report concludes that the soils present in the areas proposed for the primary and 100% reserve leach fields are adequate for the proposed on-site wastewater treatment system, and there exists sufficient area to construct the proposed developments, including the primary and 100% reserve area leach fields. The report further concludes that all new developments may be sited in such a manner that setbacks from property lines, foundations, wetlands, drainages, and slopes meet Humboldt County regulations (SHN October 2016). The recommendations of the Septic Suitability Report are an applicant-proposed operating restriction.

Therefore, the proposed project will not have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewer is not available for the disposal of wastewater. Impacts would be less than significant and no mitigation would be necessary.

f) Finding: The project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. *Less than significant with mitigation incorporated.*

Discussion: A Cultural Resources Investigation of the project site conducted by Roscoe and Associates in April 2017 found no paleontological resources as defined in CEQA, Article 4, 15064.5 (a). However, there is a potential for fossils to be discovered and inadvertently damaged during project construction even in areas with a low likelihood of occurrence. Therefore, Mitigation Measure CUL-2 regarding inadvertent discovery of paleontological resources has been included for the project for both cultural and paleontological resources. See Cultural Resources section for the applicable measures.

Applicant Proposed Operation Restrictions:

GEO-1. Construction activities will incorporate Best Management Practices and the standard erosion control measures of the Humboldt County General Plan. These measures will be incorporated in all building and grading permit applications and will be implemented at the time of ground disturbance.

GEO-2. Construction and operation of the on-site wastewater treatment system will adhere to all specifications and recommendations included in the site-specific Septic Suitability Report (SHN October 2016) for the project.

Mitigation:

GEO-1 Geotechnical Report Compliance

The applicant shall comply with all recommendations from the SHN Geotechnical Report (SHN November 2016), which makes site-specific development recommendations to reduce risks and impacts in the areas of (1) Site Preparation and Grading, (2)Foundations for Structures, (3) Engineered Fill, (4)Water and Diesel Tanks, (5)Solar Array, (6) Greenhouse Structures, (7) ADA Parking Area, and (8) Other Considerations.

GEO-2 Geologist Review of Plans

The grading, foundation design, drainage plans, and plan specifications shall be reviewed by a registered geologist prior to approval by the County.

Findings:

a) i) The project will not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving 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 Divisions of Mines and Geology Special Publication 42: **Less than significant impact.**

a) ii) The project will not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking: **Less than significant impact with mitigation.**

a) iii) The project will not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction: **Less than significant impact.**

a) iv) The project will not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides: **Less than significant impact.**

b) The project will not result in substantial soil erosion or the loss of topsoil: **Less than significant impact.**

c) The project will not 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.**

d) The project will not be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property: **Less than significant impact.**

e) The project will not have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water: **Less than significant impact.**

f) The project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. **Less than significant with mitigation incorporated.**

7. GREENHOUSE GAS EMISSIONS. Would the project:	Potentially Significant	Potentially Significant Unless Mitigation Incorp.	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emission, 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?	☐	☐	☒	☐

Setting:

As a result of revisions to the CEQA Guidelines that became effective in March 2010, lead agencies are obligated to determine whether a project's GHG emissions significantly affect the environment and to impose feasible mitigation to eliminate or substantially lessen any such significant effects. The County of Humboldt completed a draft Climate Action Plan for the General Plan Update in January 2012. The plan contains GHG reduction strategies designed to achieve the goal of limiting GHG emissions to 1990 emissions levels by 2020. The North Coast Unified Air Quality Management District (NCUAQMD) and Humboldt County have not adopted any thresholds of significance for measuring the impact of greenhouse gas (GHG) emissions generated by a proposed project.

Sources of GHG emissions from the project will occur during short-term construction activities—from construction equipment—and during long-term operation of the project, from diesel generators, HVAC units on structures, and vehicle/truck traffic. As a result of the project's transportation plan requiring employees to use the provided vanpools to travel to and from the work site, during long-term operation of the project, approximately 10 van/truck trips (5 in/5 out) would occur daily from employees and deliveries, once all phases of the project are complete.

Analysis:

a) Finding: The project will not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. *Less than significant impact.*

Discussion: Due to the small scale of the proposed project, this section includes a qualitative discussion of potential GHG/climate change impacts with an emphasis on project features that will reduce construction and operational GHG emissions (see discussion under subsection b) below).

Construction

Construction GHG emissions would be generated by vehicle engine exhaust from construction equipment, on-road hauling trucks, and worker commuting trips. The project is relatively small and construction activities generating GHG emissions would be short-term (less than one year). All construction equipment and commercial trucks would be maintained to meet current emissions standards as required by the California Air Resources Board. Based on compliance with emissions standards, the size of the project, and the duration of the construction period, impacts associated with GHG emissions generation from construction would be less than significant.

Operation

The NCUAQMD and Humboldt County have not adopted any thresholds of significance for measuring the impact of GHG emissions generated by a proposed project. GHG emissions sources during operation would include vehicle traffic from workers and deliveries, use of diesel generators to provide power for the operation, and operation of HVAC units for mixed-light cultivation areas and the proposed processing building. The applicant-proposed operating restriction of requiring all employees to utilize vanpool transportation to and from the site would

limit vehicle trips to and from the site to an estimated 10 van/truck trips per day at full build-out, including employee transportation and deliveries.. The drive between Arcata and the project site is approximately 31 miles one-way. Assuming 10 daily vanpool and other vehicle trips, the project will result in 310 vehicle-miles every day. Assuming an average gas mileage of 12 miles per gallon, annual vehicle CO_2 emissions will be approximately 84 metric tons at peak buildout.

There are two diesel generators proposed as the power source for the combined projects. A pair of 500 kW diesel-powered generators are proposed near the Adesa Organic, LLC site. The generators would be self-enclosed and would provide power to the project, in combination with solar PV arrays to be installed the site. The solar PV arrays are designed to offset both the power needs and the greenhouse gas emissions of the project. Assuming a worst-case scenario where all power comes from diesel generation at full buildout, energy generation will result in approximately 6,160 metric tons of CO_2. This total operational GHG emissions of approximately 6,244 metric tons of CO_2 is still far less than the 250,000 metric ton reporting threshold for new projects.

Stationary source permits will be required from the NCUAQMD for both of the proposed generators; obtaining a stationary source permit for all proposed diesel generators is fully described in the mitigation measure in Section 3, Air Quality. New diesel generators of this size will be required to meet the EPA Tier 4 standards for emission reduction (NCUAQMD April 2018b), further reducing the GHG impacts of the generators to a level of less than significant. Other stationary sources of emissions from the project include the proposed cultivation, processing, and manufacturing buildings which will have HVAC and filter systems for air conditioning, odor reduction, and heating. According to NCUAQMD Rule 102, the Air District does not require permits for HVAC systems (NCUAQMD April 2018a).

Additionally, starting on 2023, the applicant will be required to include records each year upon license renewal for each power source identified for the operation, specifying how much power is provided by a zero net energy renewable source, and the electricity provided by other sources, including the greenhouse gas emissions from these other sources. The applicant must ensure that the average electrical greenhouse gas emissions intensity is not in excess of the average of the local utility provider. If they cannot, they must purchase greenhouse gas credits from a reputable and recognized carbon registry.

With the size of the project and the operating restrictions as described, the proposed project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

b) Finding: The project will not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. *Less than significant impact.*

Discussion: The project proposes a facility that will involve the cultivation, processing, and manufacturing of cannabis products. For the purposes of this analysis, the proposed project was evaluated against the following applicable plans, policies, and regulations:

1) Humboldt County Draft Climate Action Plan

2) Humboldt County Commercial Medical Marijuana Land Use Ordinance (CMMLUO)

3) NCUAQMD Particulate Matter Attainment Plan

Humboldt County Draft Climate Action Plan
Humboldt County prepared a Draft Climate Action Plan prepared in 2012 as part of the General Plan Update which includes a comparison of greenhouse gas emissions from 2006 and 1990. The emissions of carbon dioxide equivalents in unincorporated Humboldt County in 2006 were shown to have declined by approximately a half million metric tons when compared to 1990 levels. This

decrease may be attributed to a decline in industrial emissions in Humboldt County since 1990 related to a decline in the lumber industry and closure of several major industrial facilities related to timber processing.

The County's 2012 Draft Climate Action Plan contains strategies for reducing greenhouse gas emissions. This project, as proposed, mitigated, and conditioned, is consistent with the following GHG reduction strategies listed in the County of Humboldt Climate Action Plan:

- *Conserve natural lands for carbon sequestration.*

  The project involves constructing agricultural facilities on parcels predominantly zoned AE. The total footprint of all proposed agricultural and accessory agricultural infrastructure, including solar PV arrays and ponds, is approximately 184,958 square feet, or 4.25 acres. The total size of the AE-zoned areas of the cumulative associated properties is approximately 614 acres. The AE zoning regulation allows for a maximum lot coverage of 35 percent. Therefore, if the entire combined project site was developed to its maximum potential under the zoning definition, approximately 214 acres would be developed. The project avoids the use or development of the approximately 33 acres of forested areas on the associated properties which are planned Timberland and zoned Timberland Production Zone. The project as proposed would develop less than 1% of the associated parcels, leaving all forest stands and significant vegetation intact, undeveloped, and in a natural state order to sequester carbon.

- *Reduce length and frequency of vehicle trips.*

  The project's transportation plan requires all employees to utilize provided vanpools to access the work site, reducing the potential frequency of vehicle trips from 78 per day to 10 per day at full build-out.

- *Promote the revitalization of communities in transition due to the decline of resource-based industries.*

  This project would provide a new facility for agricultural operations in central-eastern Humboldt County that would help facilitate economic development and the revitalization of the community of Maple Creek and associated nearby rural areas.

- *Ensure that land use decisions conserve, enhance, and manage water resources on a sustainable basis to assure sufficient clean water for beneficial uses and future generations.*

  The primary source of water for the proposed operation will be rainwater. Rainwater capture is not regulated by the State Water Resources Control Board (SWRCB) or California Department of Fish & Wildlife and is encouraged as an alternative to surface water diversions.

Humboldt County Commercial Medical Marijuana Land Use Ordinance (CMMLUO)

There are no applicable regulations in the CMMLUO regarding GHG emissions for mixed-light cannabis cultivation or processing.

NCUAQMD Particulate Matter Attainment Plan

The NCUAQMD prepared a Particulate Matter Attainment Plan, Draft Report, in May 1995 with the goal of achieving and maintaining state ambient air quality standards for PM_{10}. This report

includes a description of the planning area (North Coast Unified Air District), and emissions inventory, general attainment goals, and a listing of cost-effective control strategies. The NCUAQMD's attainment plan established goals to reduce PM_{10} emissions and eliminate the number of days in which standards are exceeded. The plan includes three areas of recommended control strategies to meet these goals: transportation, land use and burning. Control measures for these areas are included in the Attainment Plan. Compliance with the control measures in the Particulate Matter Attainment Plan would not only result in a reduction of PM_{10} emissions, but would also result in a reduction of GHG emissions. Control strategies focused on reducing transportation emissions, more efficient land-use patterns, and reducing emissions from burning activities would also reduce the amount of GHG emissions. The project is proposing the following measures consistent with the plan:

- *Burning*

The proposed facility will use forced-air gas heating instead of woodstoves or fireplaces which will significantly reduce GHG emissions generated from heating during long-term operation of the project.

Therefore, the proposed project will not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Applicant Proposed Operating Restrictions:

GGE-1. Construction equipment will be maintained to meet current emission standards as required by the California Air Resources Board (CARB).

GGE-2. All employees of the proposed project will be required to vanpool in employer-provided shuttles, reducing the number of vehicle trips on a daily basis from 78 to 10 at peak shift and full build-out, reducing vehicular exhaust emissions generated by the proposed cannabis operations.

GGE-3. The proposed project will include installation of solar photo-voltaic power generation facilities to offset greenhouse gas emissions.

GGE-4. The proposed project will use generators that are compliant with EPA Tier 4 standards for emission reduction, consistent with the requirement to obtain a stationary source permit for the generators identified in Mitigation Measure AQ-1.

Findings:

a) The project will not generate greenhouse gas emission, either directly or indirectly, that may have a significant impact on the environment: **Less than significant impact**.

b) The project will not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases: **Less than significant impact**.

9. HAZARDS AND HAZARDOUS MATERIALS.

Would the project:

	Potentially Significant	Potentially Significant Unless Mitigation Incorp.	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 compiled 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 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?	☐	☐	☒	☐

Setting:

The Adesa Organic, LLC project site is predominantly undeveloped with some existing structures that have been used to support the agricultural use of the 433-acre property. Grazing has historically and continues at present to be the primary agricultural use of the property. The adjacent parcel contains a rural residence. The residence occupies approximately 1 acre and is not part of the proposed cannabis cultivation project. The agricultural use on the rest of the largely undeveloped 185-acre parcel is also grazing. There are no known past land uses associated with potentially hazardous sites. The California Department of Toxic Substances Control EnviroStor database and the Environmental Protection Agency EnviroFacts databases were reviewed for hazardous sites in the area. No hazardous sites were identified within a three-mile radius of the project site (DTSC 2018, USEPA 2018).

Maple Creek School, located approximately 6 miles west and north by direct line (or 8 miles by road) from the proposed project, is the nearest school to the project site. The Kneeland Airport is the closest airport to the project site, and is just over 6 miles away by direct-line measurement (Humboldt County GIS 2018). The project site is not located within an Airport Compatibility Zone or any other airport land use plan.

Portions of the project site are within a Wildland Fire Rating Zone of "High," and portions of the project site are within a Wildland Fire Rating Zone of "Moderate," indicating that the area is at moderate to high risk of wildland fire (Humboldt County GIS 2018). The subject properties are located in the Kneeland Volunteer Fire Response Area, but are in State Responsibility Area (SRA) lands, which means the site is an area of legal responsibility for fire protection by CALFIRE.

Analysis:

a) Finding: The project will not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. *Less than significant impact.*

Discussion: Based on records searches of the project site and areas within a three-mile radius, there are no hazardous materials sites within 3 miles of the proposed project site (DTSC 2018, USEPA 2018). The proposed project would involve constructing mixed light greenhouses, various small structures to support the agricultural operation, solar PV arrays, an onsite wastewater treatment system and restroom facility, two self-contained diesel generators, and two 5,000-gallon diesel fuel storage tanks each with adequate secondary containment required by 40 CFR 264.193(e).

Construction of the proposed project would involve the use of materials that are generally regarded as hazardous, such as gasoline, diesel fuel, hydraulic fluids, paint, and other similar materials. The risks associated with the routine transport, use, and storage of these materials during construction are anticipated to be relatively small. With appropriate handling and disposal practices, there is relatively little potential for an accidental release of hazardous materials during construction, and the likelihood is small that workers and the public would be exposed to health hazards. Storage and handling of materials during construction would employ BMPs and would be subject to provisions of the project Storm Water Pollution Prevention Plan, which is described in greater detail in Section 9 (Hydrology and Water Quality). BMPs would include provisions for safely refueling equipment, and spill response and containment procedures.

The project site will be developed for the cultivation and drying of cannabis, uses that will involve hazardous materials including fertilizers, pesticides, fungicides, petroleum products including diesel fuel for generators, as well as vehicle and equipment fluids and lubricants. These materials will be transported to the site and used at the facility. No disposal of hazardous materials will occur as part of the proposed project.

Diesel fuel will be stored in two tanks designed for such use, each with adequate secondary containment as required by 40 CFR 264.193(e). There are two 5,000-gallon, above-ground diesel fuel storage tanks proposed for the Adesa Organic, LLC project. A plan for spill prevention, control and countermeasures (SPCC) will be a requirement for both above-ground diesel tanks, as their individual sizes exceed the thresholds for the development of SPCC established by the U.S. EPA and California Environmental Protection Agency (CalEPA). The requirement to develop adequate SPCC for both diesel tanks is included as mitigation measure HWQ-3 under Hydrology and Water Quality, and impacts are analyzed in that section. No further mitigation is required to address the potential hazard of on-site fuel storage.

As described in the Operations and Cultivation Plan for both projects, all amendments, teas, and pesticides or fungicides are certified for organic farming. Pesticides used on the site are limited to the allowable pesticides identified in the NCRWQCB's guidelines, *Legal Pest Management Practices for Marijuana Growers in California*. These and all other potentially hazardous materials other than diesel fuel will be stored in locked storage stations in the storage building, which will be designed with secondary containment. All potentially hazardous materials will be taken back to the storage stations immediately after use as a standard operating procedure. There will be full-body disposable zip-ups with hand and face protections, and ventilation available for employees using these products.

Use of all hazardous materials would be required to comply with all applicable local, state, and federal standards associated with the handling and storage of hazardous material. The applicant would be required to file a Hazardous Materials Business Plan with the County division of Environmental Health. The proposed project will also be subject to the requirements of the North Coast Regional Water Quality Control Board (NCRWQCB) Cannabis Cultivation Waste Discharge Regulatory Program (CCWDRP) and the County of Humboldt Medical Marijuana Land Use

Ordinance (CMMLUO). The NCRWQCB program and County ordinance have "standard conditions" applicable to cannabis operations that address impacts from the storage and use of hazardous materials which include the following requirements:

- Any pesticide or herbicide product application be consistent with product labeling and be managed to ensure that they will not enter or be released into surface or groundwater.
- Petroleum products and other liquid chemicals be stored in containers and under conditions appropriate for the chemical with impervious secondary containment.
- Implementation of spill prevention, control, and countermeasures (SPCC) and have appropriate cleanup materials available onsite.

With appropriate storage, handling, and application practices that comply with the requirements of the NCRWQCB and Humboldt County, it is not anticipated that the use of these materials at the facility will pose a significant hazard. The proposed project will not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

b) Finding: The project will not 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. *Less than significant impact.*

Discussion: As previously described in subsection a), fertilizers, pesticides, fungicides, petroleum products including diesel fuel for generators, as well as vehicle and equipment fluids and lubricants will be stored and used at the proposed project facility. Diesel fuel will be stored in two tanks designed for such use, each with adequate secondary containment as required by 40 CFR 264.193(e). All other potentially hazardous materials other than diesel fuel will be stored in locked storage stations in the proposed drying and processing building, which is designed with secondary containment. All potentially hazardous materials will be taken back to the storage stations immediately after use as a standard operating procedure. There will be full-body disposable zip-ups with hand and face protections, and ventilation available for employees using these products.

The applicant will be required to file a Hazardous Materials Business Plan with the County Division of Environmental Health (DEH) for the storage of the various materials described above at the site. The proposed project will also be subject to the requirements of the North Coast Regional Water Quality Control Board (NCRWQCB) Cannabis Cultivation Waste Discharge Regulatory Program and the County of Humboldt Medical Marijuana Land Use Ordinance. The NCRWQCB program and County ordinance have "standard conditions" applicable to cannabis operations that address impacts from the storage and use of hazardous materials which are listed above in subsection a). These include implementation of spill prevention, control, and countermeasures (SPCC) and the maintenance of appropriate cleanup materials onsite. As mentioned in subsection a), the development of a plan for SPCC for each proposed diesel tank will be a requirement of Mitigation Measure HWQ-3, analyzed under Hydrology and Water Quality.

With appropriate storage, handling, and application practices, it is not anticipated that the use of these materials will pose a significant hazard. In the event of foreseeable upset and accident conditions, it is unlikely that these hazardous materials would be released in a manner that would create a significant hazard to the public or the environment.

Therefore, the proposed project will not 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) Finding: The project will not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. *No impact.*

Discussion: There are no schools located within one-quarter mile of the project site. Maple Creek School, located approximately 6 miles west and north by direct line (or 8 miles by road) from the proposed project, is the nearest school to the project site. The proposed project will not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. No impact would occur, and no mitigation would be necessary.

d) Finding: The project will not be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would not create a significant hazard to the public or the environment. *Less than significant impact.*

Discussion: The State's Hazardous Waste and Substances Sites List (Cortese List, Government Code Section 65962.5) identifies sites with leaking underground fuel tanks, hazardous waste facilities subject to corrective actions, solid waste disposal facilities from which there is a known migration of hazardous waste, and other sites where environmental releases have occurred. The California Department of Toxic Substances Control EnviroStor database and the EPA EnviroFacts databases were reviewed for hazardous sites in the area. No hazardous sites were identified within a three-mile radius of the project site (DTSC 2018, EPA 2018). Because the proposed project is not listed as a hazardous materials site, implementation of the project would not create a significant hazard to the public or the environment. No impact would occur, and no mitigation would be necessary.

e) Finding: The project will not, 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, result in a safety hazard for people residing or working in the project area. *No impact.*

Discussion: The project site is not located within an airport land use plan or within two miles of a public airport or public use airport. The Kneeland Airport is the closest airport to the project site, and is over 6 miles away (Humboldt County GIS 2018). The project will not result in a safety hazard for people residing or working in the project area. No impact would occur, and no mitigation would be necessary.

f) Finding: The project will not impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan. *Less than significant impact.*

Discussion: The project would develop cannabis cultivation and drying facilities on rural property approximately 6 miles south and east of the community of Maple Creek on a direct line. From Butler Valley Road, the project site is accessed via approximately 8 miles of Maple Creek Road, which is a County-maintained road that provides access to rural residential, agricultural and public facilities. The applicant provided documentation of evidence that the entire section of Maple Creek Road from Butler Valley Road to the intersection of the private driveway leading to the project site is equivalent to a Road Category 4 Standard. This report, accompanied by photographs, showed that much of the road is at least 20 feet wide and also documents points that are narrower than 20 feet. The road is also described as having turnouts, wide shoulders and driveway entrances in places that will allow passing (Borusas January 2018). The applicant retained SHN Consulting Engineers and Geologists to prepare a road evaluation report for the 1.1-mile section of private road between Maple Creek Road and the barn complex. The road is an average of 15 feet wide and with a grade that varies between 0-15%. The report identified the road as being very low traffic with less than 10 average daily trips. Recommended improvements included installing additional turnouts and rocking the surface (SHN December 2016a). The Department of Public Works referral response indicates that the intersection of Maple Creek Road and the Adesa Organic, LLC access road will need to be upgraded to meet the County visibility

ordinance and encroachment ordinance standards (Humboldt County 2017a). The project also proposes to improve existing access roads within the project site and construct emergency turnaround and parking areas on the Adesa Organic property to serve the proposed cannabis uses. All of the proposed access improvements will improve emergency access and circulation within the project site.

The project will be required to comply with the Humboldt County Fire Safe Ordinance 1952, which the California Board of Forestry and Fire Protection has accepted as functionally equivalent to PRC 4290. The County Fire Safe Ordinance provides specific standards for roads providing ingress and egress, signing of streets and buildings, minimum water supply requirements, and setback distances for maintaining defensible space (CALFIRE 2017). The improvement plans for the proposed project will be reviewed to verify compliance with the County's Fire Safe Ordinance which will ensure that adequate access for emergency response and evacuation is provided. As such, this project will not interfere with any emergency response or evacuation plan.

Therefore, the proposed project will not impair the implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan.

g) Finding: The project will not expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires. *Less than significant impact.*

Discussion: Fire protection in Humboldt County is provided by local districts, cities, and CALFIRE. The project site is within the Kneeland Volunteer Fire Response Area (structure fires), and is located in State Responsibility Area (SRA) lands, which means the site is an area of legal responsibility for wildland fire protection by CALFIRE. CALFIRE identifies wildland fire rating zones and fire hazard severity zones in SRAs throughout California. Portions of the project site are within a Wildland Fire Rating Zone of "High," and portions of the project site are within a Wildland Fire Rating Zone of "Moderate," indicating that the area is at moderate to high risk of wildland fire (Humboldt County GIS 2018). The fire hazard severity zone for the project is classified as "Very High."

There is potential risk of causing a wildfire during construction or operational activities; this risk would be reduced to a low level by applicant-proposed operating restrictions and by compliance with the Humboldt County Fire Safe Ordinance (County Code Section 31111 et seq.), which CALFIRE has accepted as functionally equivalent to PRC 4290. The County Fire Safe Ordinance provides specific standards for roads providing ingress and egress, signing of streets and buildings, minimum water supply requirements, and setback distances for maintaining defensible space (CALFIRE 2017).

Equipment shall be "fire-safe", i.e. operating under a fire safety plan and equipped with spark arrestors. The access road shall be maintained in a state such that it is improved and rocked per the Road Evaluation Report prepared for the project (SHN December 2016a) and maintained free of vegetation during times of activity.

Fueling of vehicles/equipment during construction activities will occur off-site or be transported and dispensed from pick-up trucks equipped for such a purpose. During operation of the proposed project, diesel fuel will be stored on-site in tanks designed for such purpose, with adequate secondary containment as required by 40 CFR 264.193(e).

An emergency turnaround area will be developed, and a fire hydrant will be installed, as depicted on the Site Plans for the project (SHN February 2018a). Well or pond water will be used to as a water source for fire protection. In addition, the applicant proposes to allow access to the stored rainwater for CALFIRE or local fire departments in the case of an emergency.

Based on project design, applicant-proposed operating restrictions, and compliance with the Humboldt County Fire Safe Ordinance, the proposed project will not expose people or structures,

either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires. Impacts would be less than significant and mitigation would not be necessary.

Applicant Proposed Operating Restrictions:

HHM-1. Equipment shall be "fire-safe", i.e. operating under a fire safety plan and equipped with spark arrestors. The access road shall be paved or maintained in a state such that it is free of vegetation during times of activity.

HHM-2. Fueling of vehicles/equipment during construction activities will occur off-site or be transported and dispensed from pick-up trucks equipped for such a purpose. During long-term operation of the project, fuel will be stored on-site for equipment use in tanks designed for fuel storage that include adequate secondary containment as required by 40 CFR 264.193(e).

HHM-3. Hazardous materials including fertilizers, pesticides, fungicides, and lubricants and oils will be stored in locked storage stations in the proposed drying and processing building, which is designed with secondary containment. All potentially hazardous materials will be taken back to the storage stations immediately after use as a standard operating procedure.

Findings:

a) The project will not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials: **Less than significant impact**.

b) The project will not 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: **Less than significant impact**.

c) The project will not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school: **No impact**.

d) The project will not 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**.

e) The project will not, 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, result in a safety hazard for people residing or working in the project area: **No impact**.

f) The project will not impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan: **Less than significant impact**.

g) The project will not expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires: **Less than significant impact**.

10. HYDROLOGY AND WATER QUALITY. Would the project:	Potentially Significant	Potentially Significant Unless Mitigation Incorp.	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater 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?	☐	☒	☐	☐
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?	☐	☐	☒	☐

Setting:

The project is located in the Mad River watershed near the unincorporated community of Maple Creek. The Mad River is approximately 100 miles long and drains an area of approximately 500 square miles of coastal hills. Approximately 28 miles southeast of the project site, the Mad River is dammed at Ruth Lake. Both project parcels are located within the Blue Slide Creek – Mad River sub-watershed (HUC 12). Project facilities are located at elevations ranging from 2,300 feet to 2,360. The parcels contain moderately steep slopes; however, project facilities are located in generally flat areas, with slopes varying between 5% and 15%. The site is not connected to a municipal storm drainage system. Existing stormwater infrastructure on the parcel primarily includes road ditches.

There are five separate mapped creeks present across the two legal parcels, including Cowan Creek, two unnamed tributaries to Cowan Creek, an unnamed tributary to Wilson Creek and an unnamed tributary of the Mad River. The Preliminary Jurisdictional Wetland and Other Waters Delineation report for the project area prepared by SHN Consulting Engineers and Geologists identified approximately 0.69 acre (30,224 square feet) of "Other Waters of the U.S." by determining the location of the ordinary high-water mark (OHWM) along the various drainages on the parcels (SHN December 2016b). All have riparian habitat, and the associated streamside management areas (SMAs) for these waterways are mapped in the Humboldt County GIS. None of the proposed cultivation areas, or the drying structure, are located within the 100-foot SMA buffer zone. Some road improvements and the installation of a water line will occur within the SMA area, requiring a Special Permit.

According to FEMA Community Panel #06023C1100F (Effective Date: January 19, 2011), the project is not located within the influence of a 100-year reoccurrence interval (RI) event (FEMA 2018). At its closest

point, the Mad River is approximately 1.3 miles away from proposed project facilities. Project facilities are located at elevations ranging from 2,300 feet to 2,360 feet, while the Mad River is located at an elevation of 730 feet at its closest point (Google Earth 2018). Due to the elevation of the proposed project footprint, there is no potential for flooding from the Mad River. The project is not in an area that is at risk from dam failure, seiche, tsunami or mudflow.

Analysis:

a) Finding: The project will not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. *Less than significant impact with mitigation incorporated.*

Discussion: Surface water features on the project site include Cowan Creek and its tributaries, an unnamed tributary to Wilson Creek, and another unnamed tributary of the Mad River. Water quality on the project site is primarily influenced by grazing uses. It is reasonable to assume that the water quality in the vicinity of the project site is typical of the water quality in the nearby rural areas containing residential, commercial, industrial, and agricultural uses.

Construction of the proposed project will require grading and placement of fill for pond construction, grading and earth moving for road improvements, placement of fill for the cultivation site, and other activities that have the potential to discharge sediment from the site. The operation of heavy equipment during construction, refueling of equipment, and storage and use of fuel all have the potential to enter stormwater discharge. Improper storage and use of other materials and improper disposal of construction wastes present additional risks to stormwater quality. Work within the SMA poses an additional risk to water quality, but mitigation of these risks is addressed in the Humboldt County General Plan, which includes required erosion control BMPs BR-S9.

Because project activities will disturb more than one acre of the site, the project will be subject to the requirements State Water Resources Control Board (SWRCB) Construction General Permit (CGP). The SWRCB CGP will require the preparation of a Stormwater Pollution Prevention Plan (SWPPP) which documents the stormwater dynamics at the site, the BMPs and water quality protection measures that are used, and the frequency of inspections. BMPs are activities or measures determined to be practicable, acceptable to the public, and cost effective in preventing water pollution or reducing the amount of pollution generated by non-point sources. Implementation of the SWPPP will ensure that surface water quality is protected during construction activities and long-term operation of the project.

The project would increase the amount of impermeable surface by adding a number of new buildings, a paved ADA-accessible parking spot (the remainder of the parking lot would be unpaved), and lined ponds for rainwater catchment. The net increase in impermeable surface is approximately 4.1 acres. Of this, however, the ponds and greenhouse roofs account for approximately 3.7 acres, which will be utilized as part of the water plan to capture and store runoff for cultivation use.

The other 0.2 acre of impervious surface will result in an increase in rate and volume of stormwater runoff. The primary new structure that will contribute to the additional impermeable surface is the ADA-compliant bathroom. To ensure additional runoff from these project improvements does not have the potential to violate any water quality standards, the applicant must develop a landscaping and drainage design that incorporates relevant aspects of low impact design (LID), such as bioswales or infiltration basins. The drainage plan will ensure that the bulk of the additional runoff created by these improvements will infiltrate into the ground. This has been included as Mitigation Measure HWQ-1 for the proposed project.

There are no wastewater facilities in the community of Maple Creek. The proposed project will be served by on-site wastewater treatment systems proposed on the site plan and described in the

operations plan. The project proposes an ADA-compliant bathroom as its own "stand alone" structure. Leach fields for the bathroom are located near the cultivation area and are shown on the site plan. The leach fields are located more than the required minimum distance from wells that provide cultivation and potable water.

A site-specific Septic Suitability Report (SHN October 2016) has been prepared for the project in accordance with the standards of the Humboldt County Division of Environmental Health, to assess soil and groundwater conditions for this system, determine feasibility and the necessary size of the system, and guide the proposed development. The scope of the report's field and laboratory investigation included a site reconnaissance, excavation of soil test pits and percolation test holes, and laboratory textural analysis of soil samples collected from the test locations. The report concludes that the soils present in the areas proposed for the primary and 100% reserve leach fields are adequate for the proposed on-site wastewater treatment system, and there exists sufficient area to construct the developments, including the primary and 100% reserve area leach fields, and that the proposed on-site wastewater treatment system will be designed to adequately treat the estimated wastewater discharge volume and strength from the proposed facility.

The report further concludes that all new developments may be sited in such a manner that setbacks from property lines, foundations, wetlands, drainages, and slopes meet Humboldt County regulations (SHN October 2016). The report has been reviewed for compliance with the requirements of the North Coast Regional Water Quality Control Board (NCRWQCB) and Humboldt County Division of Environmental Health (DEH). As such it is not anticipated that the use of these systems for the proposed facility will violate any water quality standards or waste discharge requirements, nor would they cause any degradation to surface water and groundwater resources.

Cannabis irrigation has the potential to result in additional runoff that contains excess nutrients, pesticides or other substances that have the potential to be harmful to waterways on- and off-site. The cultivation and operations plan for the project states that all excess cannabis irrigation runoff will be captured and recycled through a mixed-media water filtration system. No irrigation runoff is anticipated to leave the site. There will be no added nutrient load on surface water resources.

There are two 5,000-gallon above-ground diesel fuel storage tanks proposed for the Adesa Organic, LLC project site. As described in plans submitted by the applicant, all diesel fuel will be stored in tanks designed for such use, each with adequate secondary containment as required by 40 CFR 264.193(e). The potential for diesel fuel spillage presents the possibility for significant adverse impacts to water quality unless fuel spillage is adequately prevented, controlled, and addressed with adequate countermeasures. The applicant has not yet developed a plan for spill prevention, control and countermeasures (SPCC) for the proposed fuel storage tanks. Their individual sizes and volumes exceed the thresholds for the development of SPCC established by the U.S. EPA and California Environmental Protection Agency. Mitigation Measure HWQ-3 requires the development of a plan for spill prevention, control and countermeasures (SPCC) for all three above-ground diesel tanks by a California Registered Engineer, as well as implementation of SPCC for the life of the project. This mitigation measure will reduce the potential impacts to water quality from the on-site fuel storage to less than significant levels.

Therefore, with the application of mitigation measures, the proposed project will not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.

b) Finding: The project will not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project impede sustainable groundwater management of the basin. *Less than significant impact.*

Discussion: The proposed project is not anticipated to substantially decrease groundwater supplies or affect the production rate of nearby wells because the existing and proposed wells provide only a small portion of the water required by the project. The proposed Adesa Organic, LLC project includes the use of an existing well and proposes the development of a second well.

However, the applicant proposes to use rainwater catchment as the primary source to meet project irrigation needs, supplemented with well water. The proposed rainwater catchment system has sufficient capacity to harvest and store sufficient water to meet project needs even without use of the wells in an average rain year. As the ponds are developed, it is anticipated that the project will rely more heavily on rainwater catchment than on well water for cultivation. Excessive use of well water to meet cultivation needs is not anticipated. The California Department of Fish and Wildlife has yet to make a determination whether each well is jurisdictional and subject to forbearance. If the well is subject to forbearance, the applicant will be required to utilize solely the rainwater catchment system for an established portion of the year, allowing for additional groundwater aquifer recharge during this period.

Groundwater extraction within the Mad River watershed is not extensive. The project area was not included among the areas analyzed in the Sustainable Groundwater Management Act 2019 Basin Prioritization, and the lower Mad River Lowland area was given a "Very Low" priority among the basins analyzed (DWR 2019). Groundwater extraction from the existing well and an additional proposed well are not anticipated to substantially decrease existing groundwater supplies.

Therefore, the proposed project will not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

c) i) Finding: The project will not 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 result in substantial erosion or siltation on- or off-site. *Less than significant impact with mitigation incorporated.*

Discussion: Surface water features on the project site include Cowan Creek and its tributaries, an unnamed tributary to Wilson Creek, and another unnamed tributary of the Mad River. SHN Consulting Engineers and Geologists prepared a Preliminary Jurisdictional Wetland and Other Waters Delineation report for the project area. The report concluded that there are approximately 2.64 acres of three-parameter riverine and palustrine wetlands and approximately 0.69 acre of "Other Waters of the U.S." on the parcels. The project does not propose to modify the stream channels, reduce riparian vegetation, or make any modifications to existing drainages that will result in substantial erosion or siltation on- or off-site.

The project will result in 4.1 acres of additional impervious surfaces, as described in subsection a). Of this, 3.7 acres will direct runoff to pond storage. This water would normally be directed overland via sheet flow and/or shallow concentrated flow to existing drainages on the site. The photovoltaic arrays, while they have many small, discrete impervious areas, do not appreciably contribute to the overall impervious area as runoff from individual panels will fall onto the grass below and infiltrate into the ground.

The Road Evaluation Report prepared by SHN Consulting Engineers and Geologists identified locations along the access road requiring improvements to reduce erosion potential. Measures include rocking the surface of the road so that it is suitable for all-weather travel, placement of rock for energy dissipation, and ditch improvements (SHN December 2016a). Implementation of these recommendations has been added as Mitigation Measure HWQ-2.

The proposed ponds do have the potential to overflow, which could result in substantial erosion or siltation on- or off-site. As an applicant-proposed operating restriction, the ponds will be constructed in accordance with guidance from the California Department of Fish and Wildlife (CDFW). Ponds will be constructed with an armored overflow channel to prevent erosion, and in such a way that when overflow happens or draining is necessary, stored water would be able to infiltrate into the spillway or elsewhere on site without moving a substantial amount of sediment off-site or draining sediment into a stream or other jurisdictional water of the State.

Therefore, project will 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 result in substantial erosion or siltation on- or off-site.

c) ii) Finding: The project will not 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, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site. *Less than significant impact with mitigation incorporated.*

Discussion: As discussed in subsection a), an increase in stormwater runoff will occur due to the increase in impervious surface from the proposed project. Stormwater facilities will be designed to detain stormwater on the project site through landscaping and LID improvements around the processing facility. These improvements will reduce peak flows during high rainfall events and have been included as Mitigation Measure HWQ-1.

The proposed rainwater catchment system and associated ponds will effectively mitigate against an increase in runoff due to the impervious greenhouse placement. The remaining small structures are separate and small in area and are not expected to contribute significantly to an increase in runoff.

Neither of the proposed ponds will be connected to adjacent streams. As an applicant-proposed operating restriction, the ponds will be constructed in accordance with guidance from the California Department of Fish and Wildlife (CDFW). Ponds will be constructed with an armored overflow channel to prevent erosion, and in such a way that when overflow happens or draining is necessary, stored water would be able to infiltrate into the spillway or elsewhere on site without creating a hydrological connection or draining overland to a stream or other jurisdictional waters of the State.

Therefore, the proposed project will not 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, that would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

c) iii) Finding: The project will not 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, that would create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff. *Less than significant impact with mitigation incorporated.*

Discussion: The project site does not drain to a municipal storm drainage system. The project site currently contains drainage infrastructure and additional infrastructure will be constructed as the project is developed. As discussed in subsection c) i), an increase in stormwater runoff will occur due to the increase in impervious surface from the proposed project. This runoff is managed primarily by the rain catchment system and the emergency overflow design of the ponds. As described in subsection a), stormwater facilities will be designed to detain stormwater on the project site using the proposed rainwater catchment ponds and LID improvements around the

drying facility, storage facility, and ADA-compliant bathroom. The proposed stormwater improvements required by Mitigation Measure HWQ-1 will ensure that additional stormwater runoff from the proposed project will infiltrate into the ground on-site.

Therefore, project will not create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

d) Finding: The project will not risk release of pollutants due to project inundation in flood hazard, seiche or tsunami risk zones. *No impact.*

Discussion: The project requires the construction of two ponds to store water for cultivation and operational use, which will potentially store up to 4.3 million gallons of water at maximum capacity. In the unlikely event of a failure in the construction of either of these ponds, water would not be directed toward structures or areas where people are working on site. Based on an analysis of the site topography, flows resulting from pond failure would be directed toward two of the streams present on the parcel and not toward any structures. Pond failure would result in a potentially large flow down the streams, but due to the location of the pond and site topography, flows would be directed away from project structures. Because of the location of the project and the relatively small size of the ponds, risk downstream of the ponds is minimal to none.

The project is not in an area that is at risk from seiche, tsunami or flood hazard. The project is not located near a large body of water capable of producing a seiche, is not located near the coast in a tsunami inundation area and is not located next to steep slopes capable of a mudflow event. The steepest slopes on the parcel are located in forested, riparian areas, and there are no historic landslides mapped on the parcels. The project is within the Mad River watershed downstream of Matthews Dam at Ruth Lake. During a major seismic event, the dam could potentially fail, resulting in inundation of downstream areas. However, this poses no threat to the project, as all facilities are located approximately 1,470 feet or higher above the Mad River.

Therefore, the proposed project will not risk release of pollutants due to project inundation In flood hazard, seiche, or tsunami risk zones.

e) Finding: The project will not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. *Less than significant impact.*

Discussion: There is no water quality control plan or sustainable groundwater management plan specific to the project area. Section b) discusses the current status of the most recent groundwater management plan in the region and that the lower Mad River basin is of "very low" priority in terms of groundwater management. The project is subject to the Construction General Permit and the requirements of a SWPPP that is intended to protect water quality.

In light of these requirements, the proposed project is anticipated to have a less than significant impact in terms of conflicting with or obstructing implementation of a water quality control plan or sustainable groundwater management plan.

Applicant Proposed Operation Restrictions:

HWQ-1. Construction activities will incorporate Best Management Practices and the standard erosion control measures described in BR-S9 Erosion Control of the Humboldt County General Plan. These measures will be incorporated in all building and grading permit applications and will be implemented at the time of ground disturbance.

HWQ-2. To prevent overflow of the rainwater catchment pond from occurring when it is full during a heavy rainfall event, ponds will be constructed in accordance with guidance from the California Department of Fish and Wildlife (CDFW). Ponds will be constructed with an armored overflow channel to prevent erosion, and in such a way that when overflow happens or draining is necessary, stored water would be able to infiltrate into the spillway or elsewhere on site without creating a hydrological connection or draining overland to a stream or other jurisdictional waters of the State.

Mitigation:

HWQ-1 Low Impact Design Improvements to Detain Stormwater

To address the increase in stormwater runoff that will occur due to the increase in impervious surface from the proposed project, the applicant shall design, construct, and maintain stormwater facilities to detain stormwater on the project site through low impact design (LID) improvements such as a pre-treatment pond, bioswales, infiltration basins, and detention basins, as applicable. The proposed stormwater improvements will ensure that additional stormwater runoff from the proposed project infiltrates into the ground on-site or is pre-treated prior to discharge without violating any water quality standards or waste discharge requirements. The final discharge from the area for all stormwater that does not infiltrate, evaporate or is consumed, will be discharged after pre-treatment through a culvert pipe outfall that is armored with rock to provide energy dissipation.

HWQ-2 Implementation of Road Improvements

The applicant will implement all recommendations included in the Road Evaluation Report prepared for the access road off of Maple Creek Road to the Adesa Organic, LLC project (SHN December 2016a). These measures include ditch enhancement and construction, placement of rock energy dissipation material, construction of rolling dips, and rocking the entire length of road, among others.

HWQ-3 Spill Prevention, Control and Countermeasures

A plan for Spill Prevention, Control and Countermeasures (SPCC) shall be developed by a California Registered Engineer for each of the diesel tanks proposed for on-site fuel storage, subject to requirements of the U.S. Environmental Protection Agency and the California Environmental Protection Agency. All SPCC measures shall be implemented during project operations.

Findings:

a) The project will not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality: **Less than significant impact with mitigation.**

b) The project will not 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.**

c) i) The project will not 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 result in substantial erosion or siltation on- or off-site*:* **Less than significant impact with mitigation.**

c) ii) The project will not 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 result in substantial erosion or siltation on- or off-site: **Less than significant impact with mitigation.**

c) iii) The project will not 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, which would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage system or provide substantial additional source of polluted runoff: **Less than significant impact with mitigation.**

d) The project will not risk release of pollutants due to project inundation in flood hazard, tsunami or seiche zones: **No impact.**

e) The project will not conflict with or obstruct implementation of a water quality control plan or a sustainable groundwater management plan: **Less than significant impact.**

11. LAND USE AND PLANNING. Would the project:	Potentially Significant	Potentially Significant Unless Mitigation Incorp.	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?	☐	☒	☐	☐

Setting:

The project area is located on the east side of Maple Creek Road, just northeast of the Mad River and about 6.0 miles south of the community of Maple Creek. The project area is generally located in the hills south of Korbel and east of Kneeland. The project area is primarily surrounded by agricultural lands, timberlands and rural residences.

The project site for the Adesa Organic, LLC project is one legal parcel (APNs 315-145-002, 315-211-003, 315-211-004) consisting of approximately 443 acres (Humboldt County GIS 2018). Major portions of both properties are planned Agricultural Grazing (AG) in the Humboldt County General Plan (Humboldt County 2017a), and are zoned Agriculture Exclusive (AE), with a Special Building Site combining zone specifying that the minimum parcel size is the per the subdivision map of record (B-5).

There is a 13.5-acre patch of land on the Adesa Organic, LLC property that is zoned Timberland Production Zone (TPZ); no project facilities exist or are proposed in the TPZ-zoned area. There is one 23-acre portion of the Adesa Organic, LLC property that has been designated Timberland by the Humboldt County General Plan (Humboldt County 2017a). Part of this 23-acre patch of plan-designated Timberland overlaps with forest, and part of it excludes forest, instead encompassing a portion of an adjacent meadow. No proposed facilities are located in actual, naturally-occurring forestland. A small number of trees of less than 12 inches dbh are proposed to be removed along the road for required turnouts. It should be noted that the areas zoned TPZ do not overlap the areas that are planned Timberland; however, these TPZ and Timberland areas generally conform to forested areas on the landscape—with the exception of the meadow area encompassed by the Timberland designation—and cumulatively cover approximately 36.5 acres of the Adesa Organic, LLC property (Humboldt County GIS 2018).

Table 1 on the following page identifies applicable zoning and land use designations for each property, by APN.

The currently adopted Humboldt County General Plan designates the majority of the project area as Agricultural Grazing (AG) (Humboldt County 2017a). AG lands may be used for the production of food, fiber, plants, timber, and timber agriculturally related uses. The AG designation applies primarily to dry-land grazing areas in relatively small land holdings that support cattle ranching or other grazing supplemented by timber harvest activities that are part of the ranching operation, and other non-prime agricultural lands. Very low intensity residential uses may be allowed if they are incidental to the property and if they support agricultural operations. Density ranges are 20-160 acres/unit.

The project area is zoned Agricultural Exclusive (AE) with a combined zoning district of B-5(160) (Humboldt County GIS 2018). The AE zone is intended to be applied in fertile area in which agriculture is and should be the desirable predominant use and in which the protection of this use from encroachment from incompatible uses is essential to the general welfare. Principal uses include general agricultural uses, accessory agricultural uses and structures. The combined zoning district describes building restrictions, and a subdivision limit of 160-acre minimum lot size.

Table 1: Zoning and land use designations for each project property, by legal parcel

Parcel	APN	APN Size	Zoning	Land Use Designation
Adesa Organic, LLC				
443-Acre Legal Parcel	315-145-002	80 acres	Agriculture Exclusive, Special Building Combining Zone (AE-B-5 (160))	Agricultural Grazing (AG)
	315-211-003	233 acres	219.5 acres Agriculture Exclusive, Special Building Combining Zone (AE-B-5 (160): 13.5 acres Timberland Production Zone (TPZ)	Agricultural Grazing (AG)
	315-211-004	130 acres	Agriculture Exclusive, Special Building Combining Zone (AE-B-5 (160))	107 acres Agricultural Grazing (AG) 23 acres Timberland (T)
	Total Acreage	*443 acres (approx.)*		
Adjacent Parcel				
185-Acre Legal Parcel	315-146-018	78 acres	Agriculture Exclusive, Special Building Combining Zone (AE-B-5 (160))	Agricultural Grazing (AG)
	315-222-003	107 acres	Agriculture Exclusive, Special Building Combining Zone (AE-B-5 (160))	Agricultural Grazing (AG)
	Total Acreage	*185 acres*		

The Humboldt County Web GIS Mapping system does not show prime agricultural soil on the parcels. A Prime Agricultural Soils Assessment (DBS 2018) was conducted for both parcels and concluded that the total prime agricultural soil between the two is 800,365 square feet or 18.4 acres. Both parcels are under Williamson Act contracts.

The Adesa Organic, LLC property includes three agriculturally exempt barns and various ponds and fences. However, the only structures that are involved in the proposed project are two of the agriculturally-exempt barns constructed circa 2009. Both will be converted to project facilities, one for agricultural storage and the other for drying cannabis.

The adjacent property includes the following existing structures and development, none of which is in the project area or associated with the proposed project: one residence, three agriculturally exempt barns, one photovoltaic system, various outbuildings, wells, water tanks, ponds and fences.

Analysis:

a) Finding: The project will not physically divide an established community. *No Impact.*

Discussion: The proposed project would involve cannabis cultivation and processing operation on a rural site zoned to allow agricultural land uses. There are no established communities on the project area or adjacent areas. One improved access route is proposed, but would not result in physically dividing an established community.

As part of the proposed project, the applicant would be required to make the improvements outlined in the Road Evaluation Report (SHN December 2016a) included as Mitigation Measure HWQ-1 under Section 9, Hydrology and Water Quality. Impacts to associated resources have been identified and would be reduced to levels that are less than significant. A condition of

project approval will require the applicant to obtain a prescriptive right to use the section of road on an adjacent parcel, and a condition of approval will require the applicant to improve the junction of the access road at its intersection with Maple Creek Road to meet County visibility and encroachment standards.

The improvement of the existing 1.1-mile access road between Maple Creek Road and the Adesa Organic, LLC site would not physically divide an established community. The proposed access routes would result in a beneficial impact, as improvements would help support commercial traffic and ensure connectivity between the properties, which are supported by the same infrastructure. The proposed access improvements would generally follow the length of existing ranch road and would not be extended. The project would also decrease the burden associated with an increase in use of other access roads within the vicinity of the project area.

Given that there are no established communities within the project vicinity, the project and proposed access route development would not result in the physical division of an established community. Therefore, the project would not physically divide an established community, and no impacts would occur as a result of the proposed project.

b) Finding: The proposed project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of mitigating an environmental effect. *Less than significant impact with mitigation incorporated*.

Discussion: The proposed project would not conflict with any goals, policies or objectives in the County's General Plan intended to mitigate potential environmental impacts. Land uses and zoning under the proposed project would remain consistent with the existing land uses and zoning. The agricultural use associated with cannabis cultivation and drying would be consistent with the allowable land uses under the General Plan and Zoning Ordinance. The CMMLUO identified AE-zoned parcels as sites where new cannabis cultivation and processing operations could be allowed, subject to the issuance of a Zoning Clearance Certificate for parcels between 5 and 320 acres; and a Use Permit for parcels 320 acres and above. The proposed project is requesting a Conditional Use Permit for the Adesa Organic, LLC project.

There are some areas within the general boundaries of the subject property of the Adesa Organic, LLC project that are designated Timberland (T) and zoned Timberland Production Zone (TPZ). These areas zoned TPZ and designated T do not overlap.

There are approximately 13.5 acres on the Adesa Organic, LLC property that are zoned TPZ; no project facilities exist or are proposed in the TPZ-zoned area.

There is one 23-acre portion of the Adesa Organic, LLC property that has been designated Timberland by the Humboldt County General Plan (Humboldt County GIS 2018). Part of this 23-acre patch of plan-designated Timberland overlaps with forest, and part of it excludes forest, instead encompassing a portion of an adjacent meadow. No proposed facilities are located in this patch nor in actual, naturally-occurring forestland. As defined in the Humboldt County General Plan, the Timberland designation is "primarily suitable for growing, harvesting and production of timber. Prairie and grazing lands may be intermixed" (Humboldt County 2017a). In addition, the Humboldt County General Plan finds that general agricultural activities are allowable in Timberland-designated areas (Humboldt County 2017a). Therefore, the project as proposed is consistent with the Timberland designation. The project would not prevent the growing and harvesting of timber. Ecosystem services provided by existing forest land would remain intact, and the potential for timber harvest would not be affected in the short-term or the long-term by any of the proposed project's activities.

The proposed improvements to the 1.1-mile access road that connects project facilities to Maple Creek Road passes through forestland, and will require removal of some trees of less than 12

inches in diameter in order to create the turn-outs needed to bring this section of road up to Road Category 4 equivalence, as required by Humboldt County Code. Based on the Road Evaluation Report prepared for the property (SHN December 2016a), four new turn-outs are identified, which will require removal of trees less than 12 inches in diameter in an area zoned AE-B-160. CALFIRE, in their referral response, noted their agency's enforcement responsibility for provisions of the Forest Practice Act of 1973 (CALFIRE 2017). A mitigation measure has been added to the project, identified under Section 2, Agriculture and Forestry Resources, to require the applicant to secure a Less Than 3 Acre Conversion Exemption from CALFIRE for any tree removal associated with the proposed road upgrade and to replace all commercial timber species at a 2:1 ratio. The impacts to forestry resources were assessed and mitigated to a level of less than significant in that section of the Initial Study, and thus no further mitigation is required for that proposed action of the project. The cannabis cultivation and processing project as conditioned would not conflict with the existing Timberland designation or the applicable regulations of the CMMLUO, and would conform with CALFIRE's requirements and jurisdiction over the project as designated in the Forest Practice Act of 1973.

All parcels associated with the proposed project are under Williamson Act contracts. The Williamson Act Committee has determined that cannabis cultivation is compatible with land uses identified as agricultural reserves under the Williamson Act. The County of Humboldt has also determined that cannabis cultivation is a compatible use on lands subject to Williamson Act contracts and concluded that implementation of the CMMLUO would not conflict with the goals or policies of the Williamson Act. The project was presented to the Williamson Act Committee in June 2018 and the committee found the project to be consistent with the Williamson Act Guidelines.

Therefore, the proposed project would not conflict with any goals, policies, or objectives in the County's General Plan or Zoning Ordinance adopted for the purposes of mitigating potential environmental effects. The impact would be less than significant with the application of the mitigation measures described in AFR-1 and AFR-2.

Findings:

a) The project will not physically divide an established community: **No impact.**

b) The project will not 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: **Less than significant impact with mitigation.**

12. MINERAL RESOURCES. Would the project:	Potentially Significant	Potentially Significant Unless Mitigation Incorp.	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?	☐	☐	☐	☒

Setting:

Current mineral resource production in the County is primarily limited to sand, gravel and rock extraction. The State Surface Mining and Reclamation Act of 1975 (SMARA) brought about a State policy for the reclamation of mineral lands. The Humboldt County GIS database includes parcels containing mineral resources pursuant to SMARA. According to the Humboldt County GIS system, there are no parcels containing mineral resources in or near the project site (Humboldt County GIS 2018).

Analysis:

a) Finding: The project will not 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. *No impact.*

Discussion: The project site is not within or adjacent to any mining operations according to the County GIS database (Humboldt County GIS 2018). Ground breaking is proposed as part of the proposed project, however, given that there are no known mineral resources within the project area, implementation of the project would not result in the loss of availability of a mineral resource that would be of value to the region or residents of the state. Therefore, no impact would occur.

b) Finding: The project will not 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. *No impact.*

Discussion: There are no known mineral deposits of significance on or near the project site. Therefore, implementation of the project would not result in the loss of availability of a locally important mineral resource recovery site, and no impact would occur.

Findings:

a) The project will not 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: **No impact.**

b) The project will not 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: **No impact**.

13. NOISE. Would the project result in:	Potentially Significant	Potentially Significant Unless Mitigation Incorp.	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 a 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?	☐	☐	☐	☒

Setting:

The project site consists of two legal parcels totaling approximately 618 acres that are located east of Maple Creek Road and approximately 6 miles south of the community of Maple Creek. The project parcels are currently used for grazing activities that are proposed to continue during and after project implementation. Current improvements include seven agriculture-exempt structures and one existing residence. The site consists of primarily open areas with sections of timberland and riparian vegetation running along the drainages. Surrounding land uses include agriculture, rural residential and timber harvest. Adesa Organic, LLC project site is approximately 1.1 mile away from the nearest northern spotted owl critical habitat (ECOS 2018).

Ambient noise levels in the project vicinity are consistent with rural agricultural uses. Three data points were taken over 24-hour periods. Ambient noise at three points collected on the project site are reported in the February 2018 Adesa Organic Acoustic Study. Ambient noise levels we observed to be 53-54 dBA. The Adesa Organic Acoustic Study modeled contribution of noise from the primary sources of noise pollution associated with proposed Adesa Organic, LLC project site: generators (two 500-kW), 14 packaged air conditioning units serving the mixed-light greenhouse, and a condensing unit serving the proposed processing building (Hybrid Tech February 2018, Frank Hubach Associates 2020).

Two additional acoustic studies were prepared in April 2018 and March 2020, also focusing on the Adesa Organic site, and including measures to dampen sound from noise-generating operating equipment of the proposed operation at the treeline (Hybrid Tech April 2018, Frank Hubach Associates 2020).

Analysis:

a) Finding: The project will not generate 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 with mitigation incorporated.*

Discussion: The project proposes cultivation and drying of cannabis products on a new site near the rural community of Maple Creek. The primary noise sources are generators used to provide power to the operation and air conditioning units for the greenhouse structure.

Noise standards in the Humboldt County General Plan are guided by policies NP-1 and NP-2 in Chapter 13 (Humboldt County 2017a). Policy NP-1 states: "*Minimize stationary noise sources and noise emanating from temporary activities by applying appropriate standards for average and short-term noise levels during permit review and subsequent monitoring*."

Policy NP-2 states, in part: "*Evaluate current noise levels and mitigate projected noise levels when making community planning and zoning decisions to minimize the exposure of community residents to nuisance noise levels.*" Table 13-c within the General Plan establishes a Maximum Interior Noise Level resulting from exterior sources of over 70dB for agricultural activities.

The County Medical Marijuana Land Use Ordinance (CMMLUO) further refines and constrains the noise standard for commercial cannabis operations by establishing performance standards for generator noise. Section 314-55.2.11o of the Humboldt County Code states, in part: "*The noise produced by a generator used for cannabis cultivation shall not be audible by humans from neighboring residences. The combined decibel level for all noise sources, including generators, at the property line shall be no more than 60 decibels. Where applicable, sound levels must also show that they will not result in the harassment of Marbled Murrelet or Spotted Owl species, when generator use is to occur in the vicinity of potential habitat. Conformance will be evaluated using current auditory disturbance guidance prepared by the United States Fish and Wildlife Service."*

Humboldt County Department of Planning and Building, Departmental Policy Statement 16-005 further clarifies the approach to analyzing and addressing impacts under the code, stating in part: "*The Department could interpret the code to allow the use of a simplified compliance method. Under the simplified method, a generator site located within 1-mile of mapped critical habitat (or potential habitat as such mapping data may subsequently become available from USF&WS or CDFW) with timberland present (or within an area subject to a less than 3-acre conversion exemption) is considered by default to contain habitat or potential habitat for Marbled Murrelet or Spotted Owl species. The optional simplified method would ensure that the maximum noise exposure from the combination of background and generator created noise measured at a distance of 100 feet or the edge of habitat, whichever is closer, is at or below 50 dB, a level considered by USF&WS not to constitute harassment of these species. This approach leaves in place the option for the operator to undertake a site-specific analysis using the USF&WS guidance protocols.*"

The Adesa Organic, LLC project site is within 1.1 miles of a northern spotted owl activity center. Based on the applicable guidance, the cultivation site is not considered potential habitat for northern spotted owl. No suitable NSO nesting habitat is found within 0.25-mile of the project (PNWB 2018)Thus, the prevailing standard that the project must meet for combined noise from all sources, including generators, is 60dB at the property line and 50dB at 100 feet or the edge of habitat, which is defined as the treeline most proximate to the proposed generators and fans.

All generators are designed with both a custom sound enclosure and an additional sound barrier wall that provide noise attenuation. Air conditioning units for the proposed greenhouses will be installed appurtenant to the greenhouses and will result in elevated noise levels exterior to the greenhouse structure. An air conditioning unit is also connected to the proposed processing building. These would be the primary sources of noise generation.

Three acoustic studies have been prepared for the Adesa Organic, LLC site. These studies identified the primary noise sources to include the proposed diesel generators, and 14 packaged air conditioning units serving the mixed-light greenhouse.

The first study, completed in February 2018, focused on attaining a less-than-3dB increase over ambient noise standard at the property line; the study demonstrated that project-generated noise can achieve both the standard of the new ordinance and the 60 dB standard under the existing CMMLUO with the installation of sound-dampening mitigation for the proposed generators and for the air conditioning units along the side of the greenhouse (Hybrid Tech February 2018).

The second and third acoustic studiesy focused on attaining the more rigorous standard of 50dB at the edge of habitat, here defined as the treeline most proximate (approx. 95 feet) to the proposed generators (Hybrid Tech April 2018, Frank Hubach Associates 2020). The analysis found

that the project, if properly mitigated for noise reduction, would produce 47 dB at the acoustic receiver modeled at treeline (Hybrid Tech April 2018, Frank Hubach Associates March 2020). The recommended noise mitigation measures will be included as mitigation measure NOI-1 below. Specific actions of the mitigation measure include:

- 8-foot-tall block wall and supplemental 2-foot barrier of not less than two pounds per square foot surface weight surrounding the generators
- 8-foot-tall block wall and supplemental 4-foot barrier of not less than two pounds per square foot surface weight surrounding the array of RTUs
- The block walls shall be continuous with solid metal doors with neoprene door jams. The walls shall be a minimum of 8 inches thick and be constructed of solid block or be filled after construction with grout or sand.

Based on the application of this mitigation measure, the Adesa Organic, LLC site is not anticipated to have a significant impact.

A large portion of project-related noise will occur during daytime operations, generally Monday through Sunday from 9:30 a.m. to 5:00 p.m. Some equipment, including A/C units, fans and generators, has the potential to run 24 hours per day, but the bulk of the activity on site will be during peak operating hours of 9:30 a.m. to 5:00 p.m. daily. A mitigation measure has been added to require all sources of operational noise, including fans associated with the greenhouses, not to exceed 50 decibels at 100 feet or edge of forest habitat. This is a threshold developed in consultation with the California Department of Fish and Wildlife to ensure that noise impacts on wildlife species are less than significant. This mitigation measure is listed as Mitigation NIO-3

In addition to the noise sources of HVAC units, generators, and A/C condensers that the acoustic study identified and analyzed as primary sources of noise, other sources of noise include temporary construction, employee shuttle traffic, and delivery truck traffic. The limited duration and noise intensity of shuttle traffic and delivery truck traffic is not expected to contribute a significant impact to noise pollution impacts. Construction noise is discussed below.

During the construction phase of the project, noise from construction activities would add to the noise environment in the immediate project vicinity. This noise increase would be of short duration, and would occur during daytime hours. It is anticipated that construction will take less than a year. Activities involved in construction would generate maximum noise levels, as indicated in Table 2, ranging from 85 to 87 dB at a distance of 50 feet.

Table 2: Construction Equipment Noise

Type of Equipment	Maximum Level, dB at 50 feet
Bulldozers	87
Heavy Trucks	88
Backhoe	85
Pneumatic Tools	85

Source: Cunniff 1977

A mitigation measure has been added to the project (NOI-2) that constrains the operation of tools or equipment used in construction, drilling, repair, alteration or demolition to between the hours of 7 A.M. and 6 P.M. daily, and further requires that stationary and construction equipment be maintained in good working order and fitted with factory approved muffler systems.

In combination with this mitigation measure, due to the size of the parcels (approximately 618 acres) containing the project and surrounding topography, temporary construction noise will be reduced beyond the boundaries of the site. Considering the surrounding rural agricultural uses and lack of nearby residences, temporary construction noise will not have a significant impact on neighboring residences. Mitigation measure BIO-1 addresses the potential impacts of construction noise to northern spotted owl by constraining the construction period for the use of heavy equipment to the period outside of northern spotted owl nesting and breeding season. There is no suitable NSO nesting habitat within 0.25 mile of the project site (Pacific NorthWestern Biological 2018).

Based on the application of the identified mitigation measures, the proposed project will not result in the 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 standard of other agencies.

b) Finding: The project will not generate excessive groundborne vibration or groundborne noise levels. *No impact.*

Discussion: The closest land uses potentially impacted from groundborne vibration and noise (primarily from the use of heavy equipment during construction activities) are the single-family residential units located 0.9 miles west of the project site.

Neither the short-term construction activities nor the proposed cannabis facility would be expected to generate significant groundborne noise or vibration. Any uses proposed on adjacent parcels that could result in groundborne noise will be required to be mitigated so that noise levels do not exceed Humboldt County noise standards. Some short-term minor vibrations may occur during future construction phases of the project, but the distance to other uses and projects is too great for any potential minor vibration to be of concern.

Therefore, the proposed project will not expose persons to or generate excessive groundborne vibration or groundborne noise levels.

c) Finding: The project will not, for a project located within the vicinity of a 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, expose people residing or working in the project area to excessive noise levels. *No impact.*

Discussion: The project site is not located in the vicinity of a private airstrip or within two miles of a public airport or public use airport. The closest airport to the project area is the Kneeland Airport approximately 6.4 aerial miles northwest of the project site. The closest public airport with commercial air service is the Arcata/Eureka Airport in McKinleyville, approximately 25 aerial miles northwest of the project area.

Therefore, the proposed project will not expose people residing or working in the project are to excessive noise levels.

Mitigation:

See BIO-2 for constraints on construction period to address potential noise impacts to northern spotted owl.

NOI-1. Implementation of Noise Pollution Mitigation Measures for Adesa Organic, LLC project site

The project shall implement all measures described in the Acoustic Study and Noise Pollution Prevention Plan prepared by Hybrid Tech in April 2018 as modified by the Frank Hubach Associates 2020 noise study, to include:

- 8 foot tall block wall and supplemental 2-foot barrier of not less than two pounds per square foot surface weight surrounding the generators
- 8 foot tall block wall and supplemental 4-foot barrier of not less than two pounds per square foot surface weight surrounding the array of RTUs
- The block walls shall be continuous with solid metal doors with neoprene door jams. The walls shall be a minimum of 8 inches thick and be constructed of solid block or be filled after construction with grout or sand.

NOI-2. Construction Related Noise

The following shall apply to construction noise from tools and equipment:

- The operation of tools or equipment used in construction, drilling, repair, alteration or demolition shall be limited to between the hours of 7 A.M. and 6 P.M. daily.
- All stationary and construction equipment shall be maintained in good working order and fitted with factory approved muffler systems.

NOI-3. Operations Related Noise

All noise generated from the project, including generators, ACU units and greenhouse fans, shall not exceed 50 decibels at 100 feet or edge of forest habitat, whichever is closer.

Findings:

a) The project will not expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies: **Less than significant impact with mitigation incorporated.**

b) The project will generate excessive groundborne vibration or groundborne noise levels: **No impact.**

c) The project will not, for a project located within the vicinity of a private airstrip or 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, expose people residing or working in the project area to excessive noise levels: **No impact.**

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

Setting:

Humboldt County is a rural county with a large land area and low population density. The 2010 Census reported the county's population to be 134,623, which represents an increase of 8,105 over the population reported in the 2000 Census. The California Department of Finance (DOF) prepares estimates of statewide, county and city populations for years between the decennial census that are used by state and local government to allocate funding and for planning purposes. The DOF estimates the 2015 population of Humboldt County to be 134,398, which is a decrease of 225 people since the 2010 Census.

The DOF also develops projections of State and county population 50 years beyond the decennial census. Between 2010 and 2020, the Humboldt County population is project to increase by approximately 2.2% from 136,056 to 139,033 (an increase of 2,977 people). Between 2020 and 2030, the population is projected to increase by approximately one percent, from 139,033 to 140,608 (an increase of 1,575 people).

Analysis:

a) Finding: The project would not induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure). *Less than significant.*

Discussion: The project proposes the cultivation and drying of cannabis products. For parcels identified as APN 314-145-002, 315-211-003 and 315-211-004 (Adesa Organic LLC), the proposed project would result in the construction of two 43,200-square-foot mixed-light greenhouses, an onsite ADA-compliant restroom facility and onsite wastewater treatment system, two rainwater catchment ponds totaling 4.3 million gallons, and a proposed parking area to accommodate 3 vehicles, 3 shuttle vehicles and one ADA-accessible parking space. The parcels identified as APN 315-146-003 and 315-222-003 would result in no additional construction. Operation of the Adesa Organic, LLC project would result in the hiring of 15 full-time and 5 part-time employees, a combined total of 20 employees. No employees will live onsite. The proposed project would not result in a substantial growth in the area, as none of the employees live onsite and will be commuting in from established communities.

Growth inducing impacts are generally caused by projects that have a direct or indirect effect on economic growth, population growth, or when the project taxes community service facilities that require upgrades beyond the existing remaining capacity. The project would result in the improvement of an access road (approximately 1.1 mile) that connects the project facilities to Maple Creek Road. The road upgrades would be designed to accommodate commercial traffic associated with the proposed project. The redevelopment of the former ranch road (access route) would be the financial responsibility of the applicant and designed to meet County safety standards. The proposed access route would be used solely by affiliates of the proposed project. Furthermore, the proposed access road would not be considered an extension of roads; instead, the project would result in improvements to an existing road that does not meet current safety standards.

The project would result in infrastructure improvements (water resources, wastewater, stormwater drainage as described in Mitigation Measure HWQ-1), but none that would require use of community service systems. The project would not be connected to community service facilities.

The proposed project is not anticipated to result in any substantial growth inducing impacts as 1) no employees live on site and 2) the proposed project would result in infrastructure improvements that support the size and scale of the proposed use without an impact to existing service facilities. Therefore, impacts associated with population growth would be less than significant and no mitigation would be necessary.

b) Finding: The project would not displace existing people or housing, necessitating the construction of replacement housing elsewhere. *No impact.*

Discussion: The cumulative project area supports one existing residential dwelling, located on the adjacent parcel APN 315-146-018 and 315-222-003. No new dwellings are proposed. Employees will not live on site. The proposed project would not displace a substantial number of existing housing, necessitating the construction of replacement housing elsewhere.

Findings:

a) The project will not induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)**: Less than significant.**

b) The project will not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere: **No impact.**

15. PUBLIC SERVICES. Would the project:

a) 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	Potentially Significant Unless Mitigation Incorp.	Less Than Significant Impact	No Impact
i. Fire protection?	☐	☐	☒	☐
ii. Police protection?	☐	☐	☒	☐
iii. Schools?	☐	☐	☒	☐
iv. Parks?	☐	☐	☐	☒
v. Other public facilities?	☐	☐	☐	☒

Setting:

The project site for Adesa Organic, LLC is one legal parcel of approximately 443 acres (APNs 315-145-002, 315-211-003, and 315-211-004), which is located in the Maple Creek area, approximately 8 miles south of the intersection of Butler Valley Road and Maple Creek Road, with access from Maple Creek Road via a private driveway of approximately 1.1 miles in length. A Road Evaluation Report has been completed for the approximately 8 miles of Maple Creek Road certifying equivalence to a Road Category 4 standard (Borusas January 2018). A Road Evaluation Report for the 1.1-mile private driveway has been completed by SHN Consulting Geologists and Engineers, proposing upgrades to this road to make it adequate for the proposed commercial uses (SHN December 2016a). Other proposed improvements to the Adesa Organic, LLC site include an emergency turnaround area near the proposed pond and a fire hydrant to be installed near the proposed greenhouses (SHN February 2018a). There are two rainwater catchment ponds proposed as part of the Adesa Organic, LLC project, totaling up to 4,298,000 gallons, to be used for irrigation and graywater needs of the proposed project; water would also be made available for fire suppression in emergency situations.

The distance from Eureka to the project site is 31 miles, requiring approximately one hour and 15 minutes to drive.

Fire protection in Humboldt County is provided by local districts, cities, and the California Department of Forestry and Fire Protection (CALFIRE). The project site is within the buffer zone response area of the Kneeland Fire Protection District. The Kneeland Fire Protection District was formed in 1990 and consists of a rural volunteer fire department that supports 10-12 volunteer fire fighters who respond to an average of 30 calls per year, including structure fires, vehicle accidents, wildland fires, medical aid, and hazardous situation calls. The Kneeland Fire Protection District's response area is approximately 38 square miles, but it also serves a nearly 90 square mile buffer zone response area that include parts of Maple Creek, where the proposed project is located (KFPD 2018, Humboldt County GIS 2018). In out of district areas, response times can exceed 30 minutes (KFPD 2018). The project site is also located within a State Responsibility Area (SRA) which means that fire protection services for wildland fires are provided by CALFIRE. CALFIRE has responsibility for enforcement of Fire Safe Standards as required by Public Resources Code (PRC) 4290 and 4291. Also, CALFIRE is the primary command and control dispatch for most local agency fire districts and departments.

The Humboldt County Sheriff's Office is responsible for law enforcement in the unincorporated areas of the County, including the community of Maple Creek and the rural areas beyond Maple Creek where the project is located. The Humboldt County Sheriff's Office provides a variety of public safety services countywide (court and corrections services) and law enforcement services for the unincorporated areas of the County. The California Highway Patrol is responsible for enforcing traffic laws on roadways within

the unincorporated areas and on state highways throughout the County. The Sheriff's Office Operations Bureau is made up of seven units under the command of the Undersheriff. The most visible of these units is the Patrol Unit. Sheriff's Deputies assigned to the Patrol Unit are responsible for responding to emergency calls for service, criminal investigations, and crime prevention through neighborhood and beat patrols. The Patrol Unit has one main station in Eureka, and substations in Garberville and McKinleyville. The Eureka main station serves the Maple Creek area.

The closest school to the project site is the Maple Creek School, which is located 6 miles by direct line (or 8 miles by road) from the proposed project. Maple Creek School is in the Maple Creek Elementary School District and serves grades K-8.

The nearest park or public land to the proposed project site is the Six Rivers National Forest, which is approximately 1.5 miles away at its nearest point (Humboldt County GIS 2018). There are intervening private parcels between the proposed project site and the Six Rivers National Forest, and there is no access to Six Rivers National Forest that traverses the proposed project site.

Analysis:

a) i) Finding: The project will not 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 fire protection. *Less than significant impact.*

Discussion: The proposed project proposes to build and expand agricultural facilities for the cultivation and drying of cannabis, including mixed-light greenhouses, in a rural area approximately 8 miles south and east of the community of Maple Creek by road. During peak operations, the project will provide employment for approximately 20 persons, and will not significantly increase the population in the Maple Creek area, as the majority of employees are anticipated to come from the more populated areas of Humboldt Bay and travel by vanpool shuttles daily to the project site (Borusas April 2018).

As required by fire code, the proposed processing facility will be developed with a fire suppression system. A fire hydrants is proposed for installation at the project site, located near the proposed greenhouses. In addition, the applicant proposes to allow access to the stored rainwater for CALFIRE or local fire departments in the case of an emergency.

The project will be required to comply with the Humboldt County Fire Safe Ordinance 1952, which the California Board of Forestry and Fire Protection has accepted as functionally equivalent to PRC 4290. The County Fire Safe Ordinance provides specific standards for roads providing ingress and egress, signing of buildings, minimum water supply requirements, and setback distances for maintaining defensible space. The improvement plans for the proposed project will be reviewed to verify compliance with the County's Fire Safe Ordinance.

Due to the size and nature of the proposed operation and required compliance with fire code requirements, it is not anticipated that the project would result in a significant increase in the number of calls for service. As such, the project would not result in the need for new or physically altered fire protection facilities. Impacts to fire protection services from the proposed project would be less than significant, and no mitigation would be necessary.

a) ii) Finding: The project will not 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 for police protection. *Less than significant impact.*

Discussion:
The project proposes the cultivation and drying of cannabis products. Cannabis-related operations are commonly associated with greater security-related demands, which may result in an increase in law enforcement services provided by the County Sheriff's Department. The proposed Adesa Organic, LLC project is a new operation that each include a Security Plan, including a staff security guard for each cultivation area and for the drying facility (Adesa Organic 2018). The security plan contained in the Cultivation and Operations Plans for the proposed project would be implemented during cannabis cultivation and processing operations. The plan must be consistent with § 5044 of the Bureau of Cannabis Control Regulations. Implementation of the security plan measures would minimize impacts of the proposed project on local law enforcement; the proposed project would thereby not result in the need for new or physically altered law enforcement facilities. Potential impacts would be less than significant, and no mitigation would be necessary.

a) iii) Finding: The project will not 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 schools. *Less than significant impact.*

Discussion: The proposed project, during peak operations, would provide employment for approximately 20 persons. The project is not anticipated to significantly increase the population in the Maple Creek area, as the majority of employees are likely to come from the more populated areas of Humboldt Bay and travel by vanpool shuttles daily to the project site (Borusas April 2018). The proposed project would not include any residential housing development and would not directly or indirectly induce population growth in the area.

In the referral response from Maple Creek School District, there was a request to consider the condition of Maple Creek Road, the potential increase in traffic volume from the proposed project, and the safety of students traveling on school buses via Maple Creek Road. A Road Evaluation Report has been completed for the approximately 8 miles of Maple Creek Road certifying equivalence to a Road Category 4 standard. An applicant-proposed operating restriction for the project will require all employees to travel to and from the project site in employer-provided vanpools, reducing the number of vehicle trips per day to and from the proposed facility from 78 to 10. This proposed operating restriction would reduce the potential for increase in traffic on Maple Creek Road and the accompanying potential impact to school bus traffic to a less than significant level.

Therefore, the project would not result in the need for new or expanded school facilities, and the impacts to local schools from the proposed project are considered less than significant.

a) iv) Finding: The project will not 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 for parks. *No impact.*

Discussion: The proposed project is located 1.5 miles from the nearest public land or park (Six Rivers National Forest), is not visible from that public land site, and does not provide access to that public land site. As previously mentioned, the proposed project would not directly or indirectly induce local population growth and would not result in the need for new or expanded park facilities. No impact to park facilities would occur.

a) v) Finding: The project will not 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 for other public facilities. *No impact.*

Discussion: Since the project does not propose residential development and will not significantly increase the population in the Maple Creek area, the project would not significantly increase the demand for other public facilities, including but not limited to public health services and library services. Therefore, no impacts to other public facilities would occur as a result of the proposed project.

Applicant Proposed Operating Restrictions:

PUB-1. The project will implement the Security Plan developed as part of its Cultivation and Operations Plan for the project.

PUB-2. All employees of the proposed project will be required to vanpool in employer-provided shuttles, reducing the number of vehicle trips on a daily basis from 78 to 10 at peak shift and full build-out, reducing the number of trips on Maple Creek Road and the potential impact to school bus operation and safety on Maple Creek Road.

Findings:

a) i) The project will not 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 for fire protection: **Less than significant impact**.

a) ii) The project will not 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 for police protection: **Less than significant impact**.

a) iii) The project will not 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 schools: **Less than significant impact**.

a) iv) The project will not 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 for parks: **No impact**.

a) v) The project will not 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 for other public facilities: **No impact**.

16. RECREATION.

	Potentially Significant	Potentially Significant Unless Mitigation Incorp.	Less Than Significant Impact	No Impact
a) Would the project 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) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Setting:

As a rural area, Humboldt County has a wealth of outdoor recreational opportunities. More than 20% of the County's 2.3 million acres are protected open space, forests, and recreation areas. Within the County boundaries, there are federal and state parks, 16 County parks and beaches operated by the Humboldt County Parks Division, recreational areas and reserves, city parks, and parks operated by special districts and non-profit organizations. However, most parks in Humboldt County are regional in scope. Outside the seven Humboldt County cities, there are few local community or neighborhood parks (Humboldt County 2017a).

There are no existing recreational resources in or near the project site. The nearest public land is Six Rivers National Forest, which is located approximately 1.5 miles east of the project area. Additional public lands are located 1.5 miles to the south and 3.0 miles to the west. There are no existing or planned bicycle trails in or near the project site (HCAOG 2012).

Analysis:

a) Finding: The project will not 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. *No impact.*

Discussion: There are no recreational facilities located within the vicinity of the project area. While the proposed project would provide employment for up to 15 full-time and 5 part-time persons, the project would not directly induce population growth or otherwise result in an increased demand on existing recreational facilities. All employees live off site and commute in daily. There are no existing recreational facilities and the project would not increase the use of recreational facilities in the region. No impacts are anticipated, and no mitigation would be necessary.

b) Finding: The project will not include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment. *No impact.*

Discussion: The proposed project does not include construction of recreational facilities. The project would provide employment for approximately 15 full-time and 5 part-time persons. Employees will not live on site. Employees will be shuttled in from Eureka and Arcata. As such, the proposed project would not induce population growth or otherwise result in an increased demand on existing recreational facilities that would require the construction or expansion of recreational facilities. No impacts requiring the construction or expansion of recreational facilities would occur.

Findings:

a) The project will not 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: **No impact.**

b) The project will not include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment: **No impact**.

17. TRANSPORTATION. Would the project:	Potentially Significant	Potentially Significant Unless Mitigation Incorp.	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) Would the project 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?	☐	☐	☒	☐

Setting:

The project site for Adesa Organic, LLC is one legal parcel of 433 acres (APNs 315-145-002, 315-211-003, and 315-211-004), which is located in the Maple Creek area, approximately 8 miles south of the intersection of Butler Valley Road and Maple Creek Road, with access from Maple Creek Road via a private driveway of approximately 1.1 miles in length. A Road Evaluation Report has been completed for the approximately 8 miles of Maple Creek Road certifying equivalence to a Road Category 4 standard. A Road Evaluation Report for the 1.1-mile private driveway has been completed by SHN Consulting Geologists and Engineers, proposing upgrades to this road to make it adequate for the proposed commercial uses (SHN December 2016a). The County Department of Public Works will require improvements to the junction of the private road and Maple Creek Road in order to meet County visibility and encroachment standards.

The project site is located approximately 31 miles from Eureka, traveling the most direct route via Kneeland Road, Butler Valley Road, and Maple Creek Road. All of these roads are County maintained. Of these, Kneeland Road and Maple Creek Road have been identified as Regionally Significant Roads by the Humboldt County Association of Governments (HCAOG 2017a). In determining Regionally Significant Roads, HCAOG generally follows the federal definition which describes a regionally significant facility as one that serves regional transportation needs: "At a minimum, this includes all principal arterial highways and all fixed guideway transit facilities that offer a significant alternative to regional highway travel" (23 CFR 450.140). Regional transportation needs include access to and from the area outside the region, major activity centers in the region, major planned developments (commercial, recreation, and employment), and transportation terminals (HCAOG 2017a).

Maple Creek Road is not identified in the Humboldt County Regional Bike Plan as an area supporting an existing or proposed bikeway (HCAOG 2012) or identified in the Humboldt County Trails Master Plan as an area of existing or proposed pedestrian trails (HCAOG 2010). Maple Creek Road is not serviced by a public transportation system, and is not identified as an area for potential development of a public transportation system in the Humboldt County Transit Development Plan for 2017-2022 (HCAOG 2017b).

The Kneeland Airport is the closest airport to the project site, and is just over 6 miles away by direct-line measurement (Humboldt County GIS 2018). The project site is not located within an Airport Compatibility Zone or any other airport land use plan.

Analysis:

a) Finding: The project will not conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities? *. Less than significant impact.*

Discussion: The proposed project is located approximately 8 miles south of the intersection of Butler Valley Road and Maple Creek Road, with access from Maple Creek Road via a private driveway of approximately 1.1 miles in length. A Road Evaluation Report has been completed for the approximately 8 miles of Maple Creek Road certifying equivalence to a Road Category 4 standard. A Road Evaluation Report for the 1.1-mile private driveway has been completed by SHN Consulting Geologists and Engineers, proposing upgrades to this road to make it adequate for the proposed commercial uses (SHN December 2016a). The County Department of Public Works will require improvements to the junction of the private road and Maple Creek Road in order to meet County visibility and encroachment standards; all improvements to the 1.1-mile private driveway, including conformance with County standards, are included as Mitigation Measure HWQ-2 under Hydrology and Water Quality.

Construction traffic for the project would result in a short-term increase in construction-related vehicle trips on Maple Creek Road, and potentially on Butler Valley Road and Kneeland Road, depending on the route of the construction-related traffic. Construction would result in vehicle trips by construction workers and haul-truck trips for delivery and disposal of construction materials to construction areas. Due to their short-term nature, construction activities would not result in substantial adverse effects or conflicts with the local roadway system.

As mentioned previously in the operating restrictions for Air Quality, Greenhouse Gas Emissions, and Public Services, all employees of the proposed project would be required to vanpool in employer-provided shuttles, reducing the number of vehicle trips on a daily basis from 78 to 10 at peak shift and full build-out. This operating restriction would reduce the number of trips on Maple Creek Road and other associated County roads to a level of less than significant impact.

There are no bicycle, pedestrian, or transit systems on Maple Creek Road, or planned for Maple Creek Road (HCAOG 2010, HCAOG 2012, HCAOG 2017b).

Therefore, the proposed project will not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. The expected impacts of the project are less than significant, and no mitigation is necessary.

b) Finding: Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b). *Less than significant impact.*

Discussion: CEQA Guidelines section 15064.3 dictate criteria for analyzing transportation impacts for land use and transportation projects. Projects that reduce or do not have any impact on vehicle miles traveled are considered to have a less than significant transportation impact. However, this does not necessarily mean that projects that increase total vehicle miles traveled are assumed to have a significant impact.

The Humboldt County Association of Governments (HCAOG) is the regional transportation planning agency for Humboldt County. Under its authority as the Regional Transportation Planning Agency for Humboldt County, HCAOG adopts and submits an updated Regional Transportation Plan to the California Transportation Commission and the California Department of Transportation every five years. The Regional Transportation Plan is a long-range (20-year) transportation planning document for Humboldt County. The most recent five-year update, adopted in December 2017, does not currently establish vehicular level of service criteria for County roadways in the Maple Creek area. HCAOG has also not adopted any significance standards applying vehicle miles traveled ("VMT") pursuant to CEQA Guidelines section 15064.3,

subdivision (b)(1.) Thus, there is no threshold of significance from an applicable transportation plan that can be applied to the project.

The proposed project would result in a short-term increase in construction traffic and an ongoing increase in vehicle trips for project employees. Without and understanding of the construction equipment required, it is difficult to quantify the increase in vehicle miles. However, this is not required. (See CEQA Guidelines, § 15064.3, subd. (b)(3)("For many projects, a qualitative analysis of construction traffic may be appropriate").) The increase in VMT resulting from construction would be short-term and any additional traffic would cease after each phase of construction for the project.

There would be a permanent increase in vehicle miles due to cultivation staff traveling to the project site. The applicant estimates that there will be an average of 10 one-way trips between the project site and the communities of Eureka and/or Arcata for employee shuttle vans and material delivery and haul. Using a one-way trip distance of 31 miles, this is an estimated increase of 310 vehicle miles per day.

HCAOG has not adopted any recommended significance standards applying VMT, and so a qualitative analysis is appropriate under CEQA Guidelines section 15064.3, subdivision (b)(3). Here, the VMT increase is far less than it would have been had the applicant not committed to using employer-provided shuttle vans for employee transportation, an operating restriction discussed in previous sections. Without the use of vans, there would be approximately 78 daily one-way trips, which equates to 2,418 daily vehicle miles travelled. According to the California Office of Planning and Research Technical Advisory on Evaluating Transportation Impacts in CEQA, published December 2018, absent substantial evidence of a project related significant level of VMT, projects that generate less than 110 trips per day may generally be assumed to cause a less than significant transportation impact. The 78 daily one way trips is below the guidance threshold in OPR's Technical Advisory.

Given the rural project location and resulting absence of any transit service or potential development such transit service in the future, the lack of a numerical vehicle trip threshold of significance, the use of company shuttle vans for employee transportation, and the relatively low increase in daily trips and daily vehicle miles, the proposed project is not found to be inconsistent with the transportation impact criteria in the CEQA Guidelines.

Therefore, the proposed project will not conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).

c) Finding: The project will not substantially increase hazards due to geometric design features (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). *Less than significant impact.*

Discussion: A Road Evaluation Report has been completed for the approximately 8 miles of Maple Creek Road used to access the proposed project site certifying equivalence to a Road Category 4 standard, and the County Department of Public Works has reviewed and approved the evaluation.

A Road Evaluation Report for the 1.1-mile private driveway has been completed by SHN Consulting Geologists and Engineers, proposing upgrades to this road to make it adequate for the proposed commercial uses (SHN December 2016a). Some of these improvements include stream crossing upgrades, creating turnouts on blind turns to improve safety, reducing grades, and rocking the road surface to make the road more durable in year-round conditions. The County Department of Public Works has reviewed the project, and will require improvements to the junction of the private road and Maple Creek Road in order to meet County visibility and encroachment standards. All improvements to the 1.1-mile private driveway, including

conformance with County standards, will be completed as Mitigation Measure HWQ-2 as described under Hydrology and Water Quality. Impacts to associated resources would already be reduced to levels of less than significant, and as such, additional mitigation would not be required.

All activities associated with the proposed agricultural project would occur entirely within the project site and would not involve driving or operating farm equipment on public roadways.

Therefore, the proposed project would not substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersection) or incompatible uses (e.g. farm equipment). Potential impacts would be less than significant, and no mitigation would be necessary.

d) Finding: The project will not result in inadequate emergency access. *Less than significant impact.*

Discussion: As part of the proposed project, an emergency turnaround area is proposed for development near the proposed pond. Additionally, a fire hydrant is proposed for installation near the greenhouse. In addition, the applicant proposes to allow access to the stored rainwater for CALFIRE or local fire departments in the case of an emergency.

The project will also be required to comply with the Humboldt County Fire Safe Ordinance 1952, which the California Board of Forestry and Fire Protection has accepted as functionally equivalent to PRC 4290. The County Fire Safe Ordinance provides specific standards for roads providing ingress and egress, signing of streets and buildings, minimum water supply requirements, and setback distances for maintaining defensible space (CALFIRE 2017). The improvement plans for the proposed project will be reviewed to verify compliance with the County's Fire Safe Ordinance which will ensure that adequate access for emergency vehicles is provided.

Therefore, the proposed project will not result in inadequate emergency access. Potential impacts would be less than significant, and no mitigation would be necessary.

Applicant Proposed Operating Restrictions:

TT-1. The project will complete the road upgrades on the 1.1-mile private driveway outlined in the Road Evaluation Report that has been completed for the project, as well as the improvements required by the Humboldt County Department of Public Works in order to meet County visibility and encroachment standards, per Mitigation Measure HWQ-2.

TT-2. All employees of the proposed project will be required to vanpool in employer-provided shuttles, reducing the number of vehicle trips on a daily basis from 78 to 10 at peak shift and full build-out, reducing the number of trips on Maple Creek Road.

Findings:

a) The project will not conflict with a, program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities: **Less than significant impact**.

b) The project will not conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b): **Less than significant impact**.

c) The project will not substantially increase hazards due to geometric design features (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment): **Less than significant impact**.

d) The project will not result in inadequate emergency access: **Less than significant impact**.

18. TRIBAL CULTURAL RESOURCES. Would the project:	Potentially Significant	Potentially Significant Unless Mitigation Incorp.	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a tribal cultural resource listed or eligible for listing in the California Register of Historical Resources, or in the local register of historical resources as defined in Public Resources Code §5020.1(k)?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of a tribal cultural resource determined by the lead agency to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code §5024.1?	☐	☒	☐	☐

Setting:

A cultural resources study for the project site was prepared prior to approval of the CMMLUO Permits for the cannabis cultivation operations proposed on the site. The study included a records search, Native American Heritage Commission (NAHC) inquiry, coordination with local tribes, and pedestrian survey of the site (Roscoe and Associates 2017). In addition, a Phase II Subsurface Investigation of the *Cowan Creek 433 Site A* was conducted (Roscoe and Salisbury 2017).

The project area is within the ethnographic territory of the Mad River Whilkut tribe. As part of preparation for a cultural resources survey, representatives of the Whilkut Tribe, Bear River Band of the Rohnerville Rancheria THPO were contacted. Erika Cooper, Rohnerville Rancheria THPO, was present during archaeological field investigation as a Native American representative on December 14, 2016 and helped formulate recommendations regarding protection of cultural resources during the proposed project (Roscoe and Associates 2017).

A search of records at the Northwest Information Center (NWIC) revealed that a portion of the project area has been subject to previous cultural resources investigation, and that a total of four cultural resources surveys have been conducted within ¼ mile of the proposed project (Roscoe and Associates 2017). These investigations collectively resulted in the identification of three Native American archaeological sites within ¼ mile study area. Site P-12-1969 is located outside of the direct project area, approximately 40 meters east of the project road forming the private driveway at 23333 Maple Creek Road (Roscoe and Associates 2017). The other two archaeological sites are more than 180 meters from the current project area. These sites will be avoided during the project.

At the time of the pedestrian survey, the project site was mostly undeveloped and used for grazing and hay production. Two new surface resources were identified: Cowen Creek 433 Site A and Cowen Creek 433 Site B (Roscoe and Associates 2017). Cowen Creek 433 Site A was subjected to a Phase II subsurface investigation which resulted in a recommendation for eligibility for the California Register of Historic Resources under Criterion 4 as well as possibly under Criterion 1 (Roscoe and Salisbury 2017).

Analysis:

a) Finding: The project would not cause a substantial adverse change in the significance of a tribal cultural resource as defined in §5020.1 (k). *Less than significant with mitigation incorporated.*

Discussion: A Cultural Resources Investigation of the project site conducted by Roscoe and Associates in April 2017 found two archaeological resources as defined in Public Resources Code §5020.1 (k). Two pre-contact resources have been recorded within the project site, and upon notification of the results of the cultural resources survey, the THPO of Bear River expressed concerns. A Phase II subsurface investigation of Cowen Creek 433 Site A, resulted in a recommendation for eligibility for the California Register of Historic Resources under Criterion 4 as

well as possibly under Criterion 1. Subsequent to the excavation in June 2017, a meeting was held on July 13, 2017 with Bear River Tribal Council member Edwin Smith, THPO Erika Cooper, and Mr. Roscoe. At that meeting, the Bear River agreed that the proposed cannabis cultivation greenhouses and other proposed project elements be constructed within the identified archaeological site, provided that certain mitigation measures are followed as well as implementation of standard cultural resource construction mitigation (included as Mitigation Measure CUL-2) regarding inadvertent discoveries, which would reduce potential impacts to a level of less than significant (Roscoe and Salisbury 2017).

b) Finding: The project would not cause a substantial adverse change in the significance of a tribal cultural resource as defined in §5024.1. *Less than significant with mitigation incorporated.*

Discussion: A Cultural Resources Investigation of the project site conducted by Roscoe and Associates in April 2017 found two archaeological resources as defined in subdivision (c) of Public Resources Code §5024.1. Two pre-contact resources have been recorded within the project site, and upon notification of the results of the cultural resources survey, the THPO of Bear River expressed concerns. A Phase II subsurface investigation of Cowen Creek 433 Site A, resulted in a recommendation for eligibility for the California Register of Historic Resources under Criterion 4 as well as possibly under Criterion 1. Subsequent to the excavation in June 2017, a meeting was held on July 13, 2017 with Bear River Tribal Council member Edwin Smith, THPO Erika Cooper, and Mr. Roscoe. At that meeting, the Bear River agreed that the proposed cannabis cultivation greenhouses and other proposed project elements be constructed within the identified archaeological site, provided that certain mitigation measures are followed (Mitigation Measure CUL-1), as well as implementation of standard cultural resource construction mitigation (Mitigation Measure CUL-2) regarding inadvertent discoveries, which would reduce potential impacts to a level of less than significant (Roscoe and Salisbury 2017).

Mitigation:

See Mitigation Measures CUL-1 and CUL-2, Cultural Resources**.**

Findings:

a) Cause a substantial adverse change in the significance of a tribal cultural resource listed or eligible for listing in the California Register of Historical Resources, or in the local register of historical resources as defined in Public Resources Code §5020.1(k): **Less than significant impact with mitigation incorporated.**

b) Cause a substantial adverse change in the significance of a tribal cultural resource determined by the lead agency to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code §5024.1: **Less than significant impact with mitigation incorporated.**

19. UTILITIES AND SERVICE SYSTEMS. Would the project:	Potentially Significant	Potentially Significant Unless Mitigation Incorp.	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?	☐	☐	☒	☐

Setting:

The project is located in a rural area of the county, approximately 8 miles by road south of the town of Maple Creek. The project site does not receive municipal water or wastewater utility services. The property is off the grid and proposes to use generators and solar PV installations to provide power.

Solid waste from Humboldt County is largely transported to one of three out-of-area landfills for disposal: the Anderson Landfill in Shasta County; Dry Creek Landfill in Medford/ Oregon; and Potrero Hills Landfill in Suisun City. In rural areas of the county/ residents and businesses not served by commercial waste haulers or other solid waste transport arranged by the Humboldt County Public Works Department may haul solid waste to permitted transfer station and container sites located in several areas of Humboldt County where it is transported to an out-of-area landfill. In a Commercial Medical Marijuana Permit application with the County Department of Environmental Health, the applicant indicated the preferred solid waste facility is Humboldt Waste Management Authority in Eureka. The applicant will self-haul waste to the facility. Solid waste is then transported for disposal to the Anderson Landfill for disposal. This landfill is not expected to close until 2036.

Sources of water that will be used by the proposed project include rainwater which will be captured by greenhouse rooftop collection and two rainwater catchment ponds. The total water that will be collected by rainfall catchment is approximately 6,201,000 gallons annually. There is also an existing, permitted well on the project area which would also provide irrigation water. A new well is proposed as part of the project for irrigation purposes.

There are no existing wastewater generating structures associated with the project area. An ADA-restroom facility with an onsite septic system and accompanying leach filed is proposed for parcel APN 315-211-003 (Adesa Organic, LLC site).

Analysis:

a) Finding: The project will not require or result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electrical power, natural gas, or

telecommunications facilities, the construction or relocation of which could cause significant environmental effects. *Less than significant impact*.

Discussion: There are no public water or wastewater treatment systems, stormwater drainage systems, electrical power systems, natural gas systems, or telecommunications systems serving the project site.

Irrigation water used for both projects is primarily sourced from rainwater, collected from precipitation onto greenhouse roofs and ponds. The greenhouses would have pervious floors; however, their roofs would be effectively turned into impervious surfaces. All runoff associated with mixed-light greenhouses would be collected as the primary water source for irrigation. All excess irrigation runoff would be captured and recycled through an Everfilt mixed-media filtration system. No excess irrigation water is anticipated to run off site. The two projects will be able to collect approximately 2,888,000 gallons of rainfall each year from water falling directly onto two proposed ponds. The project will also collect approximately 3,312,000 gallons annually off of the greenhouse roofs. The total water that will be collected by rainfall catchment is approximately 6,201,000 gallons annually. The water harvest calculations are based on rainfall data from Bridgeville, California which is similar in elevation and distance inland as the project area. The project proposes to store rainwater in two lined, open ponds. Pond A, located near the processing facility, will have a total storage capacity of 3,221,000 gallons. Pond B, located to the west of the cultivation area and away from other infrastructure a total storage capacity of up to 1,077,000 gallons. The total available water storage among the two proposed ponds and all hard tanks is 4,330,000 gallons. All elements of the water source and storage facilities will effectively be shared between the two projects. There is an existing, permitted well, which would provide a potential source of irrigation water for the cultivation and processing operation. There is also a proposed well, which would also provide a potential source of irrigation water for the cultivation and processing operation. The well water would serve as a backup to rainwater catchment, and would be stored in the ponds as needed to meet any forbearance requirements and irrigation or operational needs.

The project would employ 15 full-time and 5 part-time persons. Drinking water for employees will be imported to the project site and provided in water coolers placed in all work and break areas throughout the project area. The project would result in the installation of a new onsite wastewater treatment system to accommodate the staff, which would be constructed in accordance with the Humboldt County Department of Environmental Health sewage disposal system requirements. No construction of new public wastewater systems would be required.

The installation of the rainwater catchment ponds, the proposed well, and the onsite wastewater treatment system, as proposed by the project, would result in physical impacts to the surface and subsurface of the project area. However, the impacts are part of the project's construction phase and are evaluated throughout this document. In instances where significant impacts have been identified as a result of project construction and/or operation, mitigation measures have been included to reduce those impacts to levels of less than significant. As such, additional mitigation would not be required.

The project would require the construction of a new on-site electrical system including the development of rooftop solar and a photovoltaic array. The construction of these facilities would not result in significant environmental effects, primarily due to their placement on existing structures (in the case of the rooftop arrays) and the relatively small footprint (in regard to the PV array). The PV array would not result in any additional net impervious surface, nor would it pose a significant environmental risk. No new natural gas nor telecommunications facilities are proposed.

Therefore, the proposed project will not result in significant environmental effects due to the relocation or construction of new water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities.

b) Finding: The project will not have insufficient water supplies available to serve the project and reasonable foreseeable future development during normal, dry, and multiple dry years. *Less than significant impact.*

Discussion: The project site is not served by a municipal water system. Anticipated annual water usage is estimated to be 1,864,000 gallons for Adesa Organic, LLC. Water is sourced from rainwater, collected from precipitation onto greenhouse roofs and catchment ponds. The project will be able to collect approximately 2,888,000 gallons of rainfall each year from water falling directly onto two proposed ponds. The project will also collect approximately 3,312,000 gallons annually off the greenhouse roofs. The total water that will be collected by rainfall catchment is approximately 6,201,000 gallons annually. The water harvest calculations are based on rainfall data from Bridgeville, California which is similar in elevation and distance inland as the project area.

The project proposes to store rainwater in two lined, open ponds. Pond A, located near the drying and storage facilities, will have a total storage capacity of 3,221,000 gallons. Pond B, located to the west of the cultivation site and away from other infrastructure a total storage capacity of up to 1,077,000 gallons. This pond would only be constructed on an as-needed basis. Pond A alone will likely be sufficient to provide for the needs of the project. The total available water storage among the two proposed ponds and all hard tanks is 4,330,000 gallons. All elements of the water source and storage facilities will effectively be shared between the two projects. Installation of the rainwater catchment ponds would result in physical impacts to the project area.

There is an existing, permitted well which would provide a potential source of irrigation water for the cultivation and processing operation. There is also a proposed well which would also provide a potential source of irrigation water for the cultivation and drying operation. The applicant has submitted a Lake and Streambed Alteration Agreement to the California Department of Fish and Wildlife, and if the wells are found to be hydrologically connected to jurisdictional waters of the State, these sources will be subject to any applicable forbearance requirements. The applicant shall coordinate with the County Department of Environmental Health regarding the proposed well and required permits. The well water would serve as a backup to rainwater catchment, and would be stored in the ponds as needed to meet any forbearance requirements and irrigation or operational needs.

The Adesa Organic, LLC project proposes to install three 10,000-gallon water storage tanks for a total of 30,000 gallons of hard tank storage.

Project cultivation needs demand is approximately 1,864,000 gallons per year. The project will be able to weather both dry and multiple dry years, given the total proposed storage.

Drinking water for employees will be imported to the project site and provided in water coolers placed in all work and break areas throughout the project area.

Therefore, the proposed project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years. No mitigation would be necessary.

c) Finding: The project will not result in a determination by the wastewater treatment provider which services or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments. *No impact.*

Discussion: There are no public wastewater treatment providers serving the project area.

The proposed project would install a new, on-site wastewater treatment system that will be designed to adequately treat the estimated wastewater discharge volume and strength from the proposed cultivation facility and will be reviewed for compliance with the requirements of the North Coast Regional Water Quality Control Board (NCRWQCB) and Humboldt County Division of Enviro-mental Health (DEH).

The proposed project will not 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) Finding: The project will not 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.*

Discussion: Solid waste generated by the project would include the following: 1) plant material, nutrient supplement and soil containers generated from cultivation and 2) typical office and domestic solid waste generated by employees.

The applicant proposes to self-haul solid waste to the Humboldt Waste Management Authority transfer station in Eureka. The applicant would haul waste once per week and recycling once per month. The transported waste would be part of the larger existing operation on the project site. The Humboldt Waste Management Authority generally transports waste to the Anderson Landfill, which is not expected to close until 2036. The amount of waste generated does not constitute an appreciable increase that would be beyond what can reasonably be handled by local infrastructure. Therefore, the proposed project will be served by landfills with sufficient permitted capacity to accommodate the project's solid waste disposal needs.

Therefore, the proposed project would not 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) Finding: The project will not violate any federal, state, and local management and reduction statutes and regulations related to solid waste. *Less than significant impact.*

Discussion: The California Integrated Waste Management Act of 1989 (Public Resources Code Division 30), enacted through Assembly Bill 939 and modified by subsequent legislation, required all California cities and counties to implement programs to divert waste from landfills (Public Resources Code Section 41780). Compliance with AB 939 is determined by the Department of Resources, Recycling, and Recovery (Cal Recycle), formerly known as the California Integrated Waste Management Board (CIWMB). Each county is required to prepare and submit an Integrated Waste Management Plan for expected solid waste generation within the county to the CIWMB. In 2012, the unincorporated area of Humboldt County met or exceeded the waste diversion mandate of 50 percent set by the Integrated Waste Management Act of 1989 (Humboldt County 2017a).

The proposed project would comply with all federal, state, and local statutes related to solid waste, including AB 939. This would include compliance with the Humboldt Waste Management Authority's recycling, hazardous waste, and composting programs in the county to comply with AB 939. The proposed project will use a soil fertility management plan from a crop management company to continuously test soil nutrient levels and recommend organic amendments to rebalance the soil. This process will allow the applicant to recycle soil, therefore minimizing the quantity of soil waste that will go to the landfill. The project will also use all 'vegan' certified organic ingredients in a soilless potting media.

Therefore, the proposed project will not violate any federal, state, and local statutes and regulations related to solid waste. Impacts would be less than significant, and no mitigation would be necessary.

Findings:

a) The project will not require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electrical power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects: **Less than significant impact.**

b) The project will not have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years: **Less than significant impact.**

c) The project will not result in a determination by the wastewater treatment provide which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments: **No impact.**

d) The project will not 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.**

e) The project will not violate any federal, state, and local management and reduction statutes and regulations related to solid waste: **Less than significant impact.**

20. WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant	Potentially Significant Unless Mitigation Incorp.	Less Than Significant Impact	No Impact
a) Substantially 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 changes?	☐	☐	☒	☐

Setting:

The Adesa Organic, LLC project site is predominantly undeveloped with some existing structures that have been used to support the agricultural use of the 433-acre property. The adjacent parcel contains a rural residence which occupies approximately 1 acre and is not part of the proposed cannabis cultivation project. Grazing has historically and continues at present to be the primary agricultural use of both properties.

Portions of the project site are within a Wildland Fire Rating Zone of "High," and portions of the project site are within a Wildland Fire Rating Zone of "Moderate," indicating that the area is at moderate to high risk of wildland fire (Humboldt County GIS 2018). The fire hazard severity zone for the project is classified as "Very High." The subject properties are located in the Kneeland Volunteer Fire Response Area, but are in State Responsibility Area (SRA) lands, which means the site is an area of legal responsibility for fire protection by CALFIRE.

Analysis:

a) Finding: The project will not substantially impair an adopted emergency response plan or emergency evacuation plan. *Less than significant impact.*

Discussion: The project would develop cannabis cultivation and drying facilities on rural property approximately 6 miles south and east of the community of Maple Creek on a direct line. From Butler Valley Road, the project site is accessed via approximately 8 miles of Maple Creek Road, which is a County-maintained road that provides access to rural residential, agricultural and public facilities. The applicant provided documentation of evidence that the entire section of Maple Creek Road from Butler Valley Road to the intersection of the private driveway leading to the project site is equivalent to a Road Category 4 Standard. The applicant retained SHN Consulting Engineers and Geologists to prepare a road evaluation report for the 1.1-mile section of private road between Maple Creek Road and the barn complex. The road is an average of 15 feet wide and with a grade that varies between 0-15%. The report identified the road as being very low traffic with less than 10 average daily trips.

Recommended improvements included installing additional turnouts and rocking the surface (SHN December 2016a). The Department of Public Works referral response indicates that the

intersection of Maple Creek Road and the Adesa Organic, LLC access road will need to be upgraded to meet the County visibility ordinance and encroachment ordinance standards (Humboldt County 2017a). The project also proposes to improve existing access roads within the project site and construct emergency turnaround and parking areas on the Adesa Organic property to serve the proposed cannabis uses. All of the proposed access improvements will improve emergency access and circulation within the project site.

The project will be required to comply with the Humboldt County Fire Safe Ordinance 1952, which the California Board of Forestry and Fire Protection has accepted as functionally equivalent to PRC 4290. The County Fire Safe Ordinance provides specific standards for roads providing ingress and egress, signing of streets and buildings, minimum water supply requirements, and setback distances for maintaining defensible space (CALFIRE 2017). The improvement plans for the proposed project will be reviewed to verify compliance with the County's Fire Safe Ordinance which will ensure that adequate access for emergency response and evacuation is provided. The project proposes to impound irrigation water that will be more than sufficient for on-site firefighting. Given these measures, the project will comply with fire safe regulations and will not impair any emergency response or evacuation plan.

Therefore, the proposed project will not substantially impair an adopted emergency response plan or emergency evacuation plan.

b) Finding: The project will not expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors, or otherwise exacerbate wildfire risks. *Less than significant impact*.

Discussion: The proposed Adesa Organic, LLC cannabis developments are located on a rural agricultural parcel primarily in open clearings. New and existing infrastructure will be developed on approximately 10.75 acres across the combined 618 acres between the two legal parcels. There is little surrounding the parcel that can be considered sources of pollutants in the event of a wildfire beyond the typical pollutants (carbon dioxide, carbon, and ozone precursors) resulting from wildfire. The project area is characterized by forest and open, grassy clearings on a general uphill slope.

The primary on-site fire hazards include two 5,000-gallon diesel tanks, multiple generators, and batteries for the photovoltaic system. The diesel tanks will have required secondary containment that will prevent fuel from migrating away from the site and/or contaminating the site and increasing fire risk in the event of a leak. Leaks will be able to be spotted when tanks are routinely filled. The generator and battery units will be enclosed, greatly reducing their risk of starting a wildfire.

Given the project site, features, and the surrounding area, the proposed project is unlikely to expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors, or otherwise exacerbate wildfire risks.

c) Finding: The project will not 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. Less than significant impact.

Discussion: The Adesa Organic, LLC project require the installation of infrastructure related to the project, including infrastructure related to on-site utilities and emergency response. The 1.1-mile private drive to the project location will be upgraded based on the recommendations of the road evaluation report, including rocking the surface and installing additional turnouts (SHN

December 2016a). The construction of the road does not represent a change that will exacerbate wildfire risk.

The project will require the installation of a cultivation water source, an emergency fire hydrant, and emergency turnaround. These are required by the County Fire Safe Ordinance standards. The installation and maintenance of this infrastructure will not exacerbate fire risk nor result in temporary or ongoing impacts to the environment in regard to wildfire. On the contrary, these are required for fire safety. The proposed pond will impound water that can be used during fire emergency on- or off-site.

The project will require the installation of rooftop solar, a PV array, and a battery bank. These facilities operate at a far lower voltage than typical utility service, which will not be installed or located on site for the project. Photovoltaic systems and their associated infrastructure have a degree of fire risk. While photovoltaic fires are relatively rare, they can occur, and are most often the result of cell mismatch or DC-arcing due to improper installation (SFPE 2015). Due to improvements in materials, installation, and fire resistance requirements, the wildfire risk from a properly-installed photovoltaic system, both standalone panels and rooftop, is considered less than significant.

Therefore, the project will not 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) Finding: The project will not 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 changes. Less than significant impact.

Discussion: Slope failures, commonly referred to as landslides, include many phenomena that involve the downslope displacement and movement of material, either triggered by static (i.e., gravity) or dynamic (i.e., earthquake) forces. The lack of vegetative cover after wildfire can exacerbate landslide and flooding risks due to increased runoff and less infiltration of water into the ground.

Slopes within the proposed development areas range from near-level to 15%, with all proposed development located on slopes of less than 15%. Areas adjacent to proposed development have slopes ranging up to approximately 30%. No evidence of slope failure was observed during site reconnaissance for the Geotechnical Report, and the slope stability hazard was characterized as low (SHN November 2016). Humboldt County Web GIS data does not identify any areas of historic landslides on the subject property (Humboldt County GIS 2018).

The project area is well outside the flood zone and the risk of flooding due to increased runoff following a wildfire is low. The project also will not alter any slopes in such a way that they would pose an increased risk of instability or downslope landslides. Based on these analyses, the potential risk to people or structures from landslide, even following a wildfire, is determined to be low, and there will be a less than significant impact.

Therefore, the proposed project will not 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 changes.

Findings:

a) The project will not substantially impair an adopted emergency response plan or emergency evacuation plan: **Less than significant impact**.

b) The project will not expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors, or otherwise exacerbate wildfire risks: **Less than significant impact**.

c) The project will not 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. **Less than significant impact.**

d) The project will not 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 changes. **Less than significant impact.**

21. MANDATORY FINDINGS OF SIGNIFICANCE.

	Potentially Significant	Potentially Significant Unless Mitigation Incorp.	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 project, 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?	☐	☒	☐	☐

Setting:

The project information provided for each of the topics above has been reviewed for all actions associated with it; during both temporary construction and long-term operation. Based on the project description and its location, the proposed project will not result in any significant impacts with the incorporated operating restrictions, mitigation measures, as well as those standards and requirements of other regulating resource agencies.

Analysis:

a) Finding: The project will not have the potential to 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, 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 impact with mitigation incorporated.*

Discussion: All impacts to the environment, including impacts to habitat for fish and wildlife species, fish and wildlife populations, plant and animal communities, rare and endangered plants and animal species, and historical and prehistorical resources were evaluated as part of the analysis in this document. Where impacts were determined to be potentially significant, mitigation measures have been imposed to reduce those impacts to less than significant levels. Accordingly, with incorporation of the mitigation measures imposed throughout this document, the proposed project would not substantially degrade the quality of the environment and impacts would be less than significant.

Mitigation:

All Mitigation Measures discussed in this document shall apply (See Section 20 – Discussion of Mitigation Measures, Monitoring, and Reporting Program). Proposed Mitigation Measures include AES-1, AFR-1, AFR-2, BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, CUL-1, CUL-2, ENE-1, GEO-1, GEO-2, HWQ-1, HWQ-2, HWQ-3, NOI-1, NOI-2, NOI-3 shall apply.

b) Finding: The project will not 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 impact with mitigation incorporated.*

Discussion: Adesa Organic, LLC has proposed 86,400 square feet of mixed-light cannabis cultivation, on-site drying and storage facilities, bathrooms and wastewater disposal systems, use of existing agricultural building/building sites, diesel generators, fuel tanks, air conditioning units, photovoltaic systems and battery sheds, clone sheds, rainwater catchment ponds, wells, water storage tanks, road improvements, and parking areas on an approximately 443-acre parcel.

Impacts have been described and assessed based on their cumulative implementation of the proposed project has the potential to result in impacts to the environment that are individually limited, but cumulatively considerable, including impacts to Aesthetics, Agriculture and Forestry Resources, Biological Resources, Cultural Resources, Geological Resources and Soils, Hydrology and Water Quality, Noise, and Tribal Cultural Resources.

There are a number of other cannabis developments in the general vicinity of the Adesa Organic, LLC project. These include two applications in the immediate vicinity of the Adesa project, and four more further afield, only one of which is approved. There are a number of other permit applications in the vicinity of the proposed projects that were either withdrawn, denied, or canceled. Within a three-mile radius of the project site, there are a total of 5 applications under review and one cannabis application that is approved. There are no non-cannabis discretionary permit applications within the vicinity of the project site.

An applicant has applied for two conditional use permits and a special permit for 56,235 square feet of commercial cannabis cultivation on a parcel to the south of the Adesa Organic LLC project. This project consists of both outdoor and mixed-light cultivation, an associated nursery, and a commercial processing facility. Project water is sourced from two existing ponds and a permitted well. Power will be sourced from a 100kW diesel generator and propane generators with appropriate noise attenuation. This project is not yet approved.

There is a second proposed cannabis cultivation on a 417-acre parcel directly to the southwest of the Adesa project. This project permit application consists of four conditional use permits for a new mixed-light cultivation operation with the development of 37 greenhouses totaling four cultivated acres. Irrigation water will be sourced from rainwater catchment with 2.5-million-gallon pond and additional storage tanks. The project would employ approximately 24 full-time and up to 2 part-time employees. Power would initially be supplied by generators, with PG&E service being installed in the future. Up to six acres onsite will be reserved for RRR cultivation that would consist of outdoor cultivation and require separate land use approvals.

These two projects all require the use of Maple Creek Road for project access and are all located between 0.5 mile and 1.5 miles of the project sites.

There are three additional projects further afield from the Adesa Organic, LLC project. These include an application for an existing 9,600-square-foot mixed-light operation located approximately 3 miles to the northwest, an application for 17,780 square feet of existing outdoor medical cannabis cultivation located approximately 2.2 miles to the southwest, an application for 10,000 square feet of existing outdoor cannabis cultivation located approximately 2.1 miles to the southwest, an application for 22,000 square feet of existing mixed-light cultivation located approximately 2.3 miles to the southwest, and an application for a zoning clearance certificate

for 10,000 square feet of new mixed-light cultivation approximately 3.2 miles to the southeast. None of these projects are yet approved.

There is only one approved project in the general vicinity, consisting of 17,500 square feet of outdoor and mixed-light cultivation located 2.5 miles southwest of the Adesa project. Power for this project is provided by solar panels. Project access uses Mountain View Road and does not require use of Maple Creek Road.

The project sites closest to the Adesa Organic, LLC project have the theoretical potential to be cumulatively considerable, given the relatively small distance between them. Nearly all of the proposed activities and development associated with these projects will take place on the opposite side of Maple Creek Road at a lower elevation than the project site. There is no public viewing point where all of these project sites are viewable.

The other proposed cannabis projects in the vicinity of Adesa Organic, LLC all have the potential to create individual aesthetic impacts. Specifically, each is a mixed-light operation with lights running through some nighttime hours, which could add unwanted light and visually alter public views. However, each project is required by the CMMLUO to adhere to the International Dark Sky Association standards. The blackout curtains that will be implemented as part of the Adesa Organic, LLC project will ensure that these two projects do not result in any light pollution that will be cumulatively considerable with other projects.

The project's impact on the golden eagle species, population or range is not cumulatively considerable. While two golden eagle individuals have been observed in the general area, a protocol-level study confirms that the Project site is located with an adequate buffer distance away (i.e. greater than one mile) from the nearest golden eagle nest as well as observed flight paths of the observed golden eagle individuals. Further, multiple studies have confirmed that the Project site provides lower quality habitat in comparison to much higher habitat that is abundantly available closer to the nest site for this pair of golden eagles. Thus, the Project's contribution to any impact is insubstantial, and less than cumulatively considerable. (*Save the Plastic Bag Coalition v. City of Manhattan Beach* (2011) 52 Cal.4th 155.) While other proposed cannabis operations are located much closer to these golden eagle individuals and may, therefore, have a greater impact, "[t]he mere existence of significant cumulative impacts cause by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable." (CEQA Guidelines, § 15064, subd. (h)(4)); see also *Sierra Club v. West Side Irrigation Dist*. (2005) 128 Cal.App.4th 690, 702 ("Merely listing . . . other projects occurring in the area that may cause significant cumulative impacts is not evidence that the assignments will have impacts or that their impacts are cumulatively considerable"); *Leonoff v. Monterey County Board of Supervisors* (1990) 222 Cal.App.3d 1337, 1358 [impacts of project not cumulatively considerable when no substantial evidence that any incremental impacts of the project are potentially significant]).

The noise impacts of the projects are not cumulatively considerable. Each individual project is required to adhere to the same 60 dBA standard at the property line, and it is highly unlikely the noise impacts will not add to each other, given the distance between projects and forested land separating each development. Additionally, all projects are likely subject to the 50 dBA standard at tree line, and at least one is required to implement noise attenuation measures. Given this stricter standard, each will have a localized noise impact specific to its individual project.

With respect to cumulative transportation impact, each of these four projects uses Maple Creek Road as its primary County road access. The two other projects are anticipated to require an estimated 30 full time employees and 28 part-time employees. All of these employees would use Maple Ridge Road to access their cultivation jobs. The Road Evaluation Report for the Adesa Organic, LLC project has determined that Maple Creek Road is consistent with a Road Category 4 standard. Although it has a number of narrow points, it generally meets the required width.

Construction traffic for each of the projects will result in a short-term increase. It is unlikely that construction for all projects occurs simultaneously, and the staggered, short-term nature of the construction traffic is anticipated to have a less than significant impact on Maple Creek Road. Worker trips for all area projects will result in an increased number of trips along Maple Creek Road. Even a cumulative increase of 160 trips would not be a cumulatively significant impact given the rural project location and resulting absence of any transit service or potential development such transit service in the future. Further, however, the operating restrictions for Air Quality, Greenhouse Gas Emissions, and Public Services, require all employees of the Adesa project to vanpool in employer-provided shuttles, thereby reducing the number of vehicle trips on a daily basis from 78 to a less than cumulatively-considerable10 at peak shift and full build-out. If the other projects are required to do likewise through either applicant-committed measures or required mitigation, the number of daily trips along the road would be reduced from an estimated 160 to approximately 30. This would further reducecumulative VMT to well below significant levels.

The six projects that are further from the Adesa Organic, LLC projects have effects that will not be cumulatively considerable, given their distance. The traffic impacts from these projects are not cumulative, as the access routes are different. Noise impacts that are mitigated to the required standard at property line are not cumulatively significant, since each are localized. The mixed-light operations are all required to meet International Dark Sky Association Standards, which will not lead to cumulative glare or light pollution during nighttime hours. The cumulative impacts from the projects over two miles from the projects are considered less than significant.

In all instances where the project has the potential to contribute to cumulatively considerable impacts to the environment (including the resources listed above) mitigation measures have been imposed to reduce the potential effects to less than significant levels. As such, with incorporation of the mitigation measures imposed throughout this document, the proposed project would not contribute to environmental effects that are individually limited, but cumulatively considerable, and impacts would be less than significant.

Mitigation:

Mitigation Measures
AES-1, AFR-1, AFR-2, , BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, CUL-1, CUL-2, ENE-1, GEO-1, GEO-2, HWQ-1, HWQ-2, HWQ-3, NOI-1, NOI-2, NOI-3 shall apply.

c) Finding: The project will not have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly*. Less than significant impact with mitigation incorporated.*

Discussion: The proposed project's potential to result in environmental effects that could adversely affect human beings, either directly or indirectly, has been discussed throughout this document. In instances where the proposed project has the potential to result in direct or indirect adverse effects to human beings, including impacts to Aesthetics, Agriculture and Forestry Resources, Biological Resources, Cultural Resources, Geological Resources and Soils, Hydrology and Water Quality, Noise, and Tribal Cultural Resources, mitigation measures have been applied to reduce the impact to below a level of significance. With required implementation of mitigation measures identified in this document, construction and operation of the proposed project would not involve any activities that would result in environmental effects which would cause substantial adverse effects on human beings.

Mitigation:

Mitigation Measures
AES-1, AFR-1, AFR-2, , BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, CUL-1, CUL-2, ENE-1, GEO-1, GEO-2, HWQ-1, HWQ-2, HWQ-3, NOI-1, NOI-2, NOI-3 shall apply.

22. DISCUSSION OF MITIGATION MEASURES, 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. A Mitigation and Monitoring Report checklist is attached.

Mitigation:

AES-1 Light Pollution Prevention Plan

Prior to issuance of any permits or clearances the applicant shall provide to the County Planning Division a lighting plan demonstrating that all outdoor lighting for the proposed project would not deliver or have the potential to deliver light pollution, from sunset to sunrise. The lighting plan shall meet the International Dark Sky Association standards and be approved by the County Planning Division prior to the issuance of building permits.

AFR-1 Less Than 3 Acre Conversion Exemption

The applicant shall secure a Less Than 3 Acre Conversion Exemption from CALFIRE for any tree removal associated with the project, including tree removal required for the road improvements (turn-outs) identified in the Road Evaluation Report for the project.

AFR-2 Timberland Mitigation

Timber species over 12 inches in diameter at breast height shall not be removed as part of the proposed project. Prior to the initiation of cultivation activities, native timber species shall be replanted on the property at a 2:1 ratio for every commercial timber species that is removed for proposed road improvements.

BIO-1 Limits of Construction Period for Northern Spotted Owl and other raptors

No construction work shall occur during the northern spotted owl nesting season (February 1st- July 31st) unless a wildlife biologist with experience in northern spotted owl protocol surveys completes a biological assessment of the property to determine whether the area has northern spotted owl presence and whether site specific avoidance measures are necessary to avoid any impact to the species. Any measures developed by the biologist must be adhered to during the nesting season. Regardless of northern spotted owl or other raptor presence on the property, no proposed activity generating noise levels 25 or more decibels above ambient noise levels or with maximum noise levels above 90 decibels shall occur at 100 feet from the project site or edge of habitat, whichever is closer, during the northern spotted owl nesting season.

BIO-2 Pond Maintenance to Prevent Bullfrog Infestation

All constructed ponds shall be kept free of American bullfrog infestations to prevent this non-native species from impacting special status aquatic species, such as the northern red-legged frog. To prevent significant bullfrog populations from developing due to the aquatic environment provided by the rainwater catchment ponds, the following measures shall be implemented as part of the project:

d) Controlling the bullfrog population following colonization will be achieved by draining the rainwater catchment ponds throughout the summer until no water remains at the end of the principal cultivation and irrigation period. This shall be repeated for 2 years to disrupt bull frog life cycles.
e) Direct removal methods shall be used, should de-watering be ineffective for the removal of bullfrog populations.
f) Monitoring for bullfrog populations shall occur on an annual basis in order to prevent subsequent establishment.

BIO-3 Screening of Water Pumps

To prevent impacts to wildlife species including amphibians and reptiles during the term of the project, water pumps used for the operation shall contain screens meeting the CDFW fish screening criteria (http://www.dfg.ca.gov/fish/Resources/Projects/Engin/Engin_ScreenCriteria.asp).

BIO-4 Replacement of Riparian Vegetation and Special Status Vegetation Alliances

Any riparian vegetation and special status vegetation alliances (identified in section 6.3.2 of the Natural Resources Assessment prepared by SHN) that are impacted by project activities, including but not limited to road improvement and maintenance, shall be replaced at a 3:1 ratio. The replacement of riparian vegetation will occur on the project site and could include enhancement of existing wetland and riparian areas. A mitigation plan will be prepared and submitted to regulatory agencies for review and concurrence prior to any construction that encroaches on SMAs, wetlands, or riparian areas.

BIO-5 Fencing During Construction to Protect Wetlands and Streamside Management Areas

To protect the riparian habitat at the project site during construction activities, temporary fencing shall be installed and maintained on the edge of SMAs and delineated wetlands. The fencing shall be installed prior to the beginning of construction activities and shall be removed after the final inspection is completed by the Building Department.

BIO-6 Demarcation of Special Status Biological Resources

To protect special status biological resources, all resource populations, including the two northern meadow sedge populations, northern red-legged frog habitat, Oregon white oak woodlands, California bay forests, and California oat grass prairies, must be demarcated by high visibility construction fencing during the project construction period in a manner sufficient to avoid unintentional impacts when project construction activities (aside from transportation along roads) will occur within 100 feet of these resources.

BIO-7 Minimize Northern red-legged frog impacts

To protect northern red-legged frogs during restoration activities in CDFW project PO-1, conduct excavation activities August-October.

BIO-8 Nesting Bird Surveys to Protect Migratory Birds including Grasshopper Sparrow

Project-related vegetation clearing should occur outside the bird nesting season, which is generally considered to be March 15 through August 1. 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 in those locations by a qualified biologist to ensure that active nests are not destroyed or disturbed.

CUL-1 Protocols for Construction Specific to Cowen Creek Documented Site

4. A qualified, trained archaeological monitor must be present during the mechanical excavation of soils and sediments from the pond area.
5. All project-related activities involving heavy equipment (excavators, bulldozers, pickup-trucks, etc.) adjacent to the archaeological site boundaries; which includes the location of the greenhouse, leach fields, photovoltaic installation, sheds, etc., must be conducted with an archaeological monitor present.
6. It is also recommended that all project-related ground disturbance activities in the vicinity of both archaeological sites identified be monitored by qualified cultural resources monitors.

CUL-2 Inadvertent Discoveries of Cultural and Paleontological Resources, and Human Remains

The following provides means of responding to the circumstances of a significant discovery during the cultural monitoring of the final implementation of the proposed agricultural development

within the project parcel. If cultural materials for example: chipped or ground stone, historic debris, building foundations, or bone are discovered during ground-disturbance activities, work shall be stopped within 20 meters (66 feet) of the discovery, per the requirements of CEQA (January 1999 Revised Guidelines, Title 14 CCR 15064.5 (f)). Work near the archaeological finds shall not resume until a professional archaeologist, who meets the Secretary of the Interior's Standards and Guidelines, has evaluated the materials and offered recommendation for further action.

In the event that paleontological resources are discovered, work shall be stopped within 20 meters (66 feet) of the discovery and a qualified paleontologist shall be notified. The paleontologist shall document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in CEQA Guidelines Section 15064.5. If fossilized materials are discovered during construction, excavations within 66 feet of the find shall be temporarily halted or diverted until the discovery is examined by a qualified paleontologist. The paleontologist shall notify the appropriate agency to determine procedures that would be followed before construction is allowed to resume at the location of the find.

If human remains are discovered during project construction, work will stop at the discovery location, within 20 meters (66 feet), and any nearby area reasonably suspected to overlie adjacent to human remains (Public Resources Code, Section 7050.5). The Humboldt County coroner will be contacted to determine if the cause of death must be investigated. If the coroner determines that the remains are of Native American origin, it is necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the NAHC (Public Resources Code, Section 5097). The coroner will contact the NAHC. The descendants or most likely descendants of the deceased will be contacted, and work will not resume until they have made a recommendation to the landowner or the person responsible for the excavation work for means of treatment and disposition, with appropriate dignity, of the human remains and any associated grave goods, as provided in Public Resources Code, Section 5097.98.

ENE-1 Renewable Energy Generation Standards

The applicant shall ensure a minimum of 80% of project electrical energy is generated by renewable sources. This shall be accomplished through the use of solar arrays on-site with generator for backup. Alternatively, the project could interconnect into the local grid and obtain electrical energy from a local utility providing power generated from up to 80% renewable sources.

GEO-1 Geotechnical Report Compliance

The applicant shall comply with all recommendations from the SHN Geotechnical Report (SHN November 2016), which makes site-specific development recommendations to reduce risks and impacts in the areas of (1) Site Preparation and Grading, (2)Foundations for Structures, (3) Engineered Fill, (4)Water and Diesel Tanks, (5)Solar Array, (6) Greenhouse Structures, (7) ADA Parking Area, and (8) Other Considerations.

GEO-2 Geologist Review of Plans

The grading, foundation design, drainage plans, and plan specifications shall be reviewed by a registered geologist prior to approval by the County.

HWQ-1 Low Impact Design Improvements to Detain Stormwater

To address the increase in stormwater runoff that will occur due to the increase in impervious surface from the proposed project, the applicant shall design, construct, and maintain stormwater facilities to detain stormwater on the project site through low impact design (LID)

improvements such as a pre-treatment pond, bioswales, infiltration basins, and detention basins, as applicable. The proposed stormwater improvements will ensure that additional stormwater runoff from the proposed project infiltrates into the ground on-site or is pre-treated prior to discharge without violating any water quality standards or waste discharge requirements. The final discharge from the area for all stormwater that does not infiltrate, evaporate or is consumed, will be discharged after pre-treatment through a culvert pipe outfall that is armored with rock to provide energy dissipation.

HWQ-2 Implementation of Road Improvements

The applicant will implement all recommendations included in the Road Evaluation Report prepared for the access road off of Maple Creek Road to the Adesa Organic, LLC project (SHN December 2016a). These measures include ditch enhancement and construction, placement of rock energy dissipation material, construction of rolling dips, and rocking the entire length of road, among others.

HWQ-3 Spill Prevention, Control and Countermeasures

A plan for Spill Prevention, Control and Countermeasures (SPCC) shall be developed by a California Registered Engineer for each of the diesel tanks proposed for on-site fuel storage, subject to requirements of the U.S. Environmental Protection Agency and the California Environmental Protection Agency. All SPCC measures shall be implemented during project operations.

NOI-1. Implementation of Noise Pollution Mitigation Measures

The project shall implement all measures described in the Acoustic Study and Noise Pollution Prevention Plan prepared by Hybrid Tech in April 2018 as modified by the Frank Hubach Associates 2020 noise study, to include:

- 8 foot tall block wall and supplemental 2-foot barrier of not less than two pounds per square foot surface weight surrounding the generators
- 8 foot tall block wall and supplemental 4-foot barrier of not less than two pounds per square foot surface weight surrounding the array of RTUs
- The block walls shall be continuous with solid metal doors with neoprene door jams. The walls shall be a minimum of 8 inches thick and be constructed of solid block or be filled after construction with grout or sand.

NOI-2. Construction Related Noise

The following shall apply to construction noise from tools and equipment:

- The operation of tools or equipment used in construction, drilling, repair, alteration or demolition shall be limited to between the hours of 7 A.M. and 6 P.M. daily.
- All stationary and construction equipment shall be maintained in good working order and fitted with factory approved muffler systems.

NOI-3. Operations Related Noise

All noise generated from the project, including generators, ACU units and greenhouse fans, shall not exceed 50 decibels at 100 feet or edge of forest habitat, whichever is closer.

MITIGATION MONITORING AND REPORTING PROGRAM CHECKLIST:

AES-1 Light Pollution Prevention Plan

The applicant shall provide to the County Planning Division a lighting plan demonstrating that all indoor and outdoor lighting for the proposed project would not deliver or have the potential to deliver light pollution, from sunset to sunrise. The lighting plan shall be approved by the County Planning Division prior to the issuance of building permits.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to issuance of the building permit, and during project operations.	Continuous		HCP&BD**		

AFR-1 Less Than 3 Acre Conversion Exemption

The applicant shall secure a Less Than 3 Acre Conversion Exemption from CALFIRE for any tree removal associated with the project, including tree removal required for the road improvements (turn-outs) identified in the Road Evaluation Report for the project.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to any tree removal associated with road improvements.	Once		HCP&BD*** and CALFIRE*		

AFR-2 Timberland Mitigation

Timber species over 12 inches in diameter at breast height shall not be removed as part of the proposed project. Prior to the initiation of cultivation activities, native timber species shall be replanted on the property at a 2:1 ratio for every commercial timber species that is removed for proposed road improvements.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to initiation of cultivation activities.	Once		HCP&BD***		

BIO-1 Limits of Construction Period for Northern Spotted Owl

No construction work shall occur during the northern spotted owl nesting season (February 1st- July 31st) unless a wildlife biologist with experience in northern spotted owl protocol surveys completes a biological assessment of the property to determine whether the area has northern spotted owl

presence and whether site specific avoidance measures are necessary to avoid any impact to the species. Any measures developed by the biologist must be adhered to during the nesting season. Regardless of northern spotted owl presence on the property, no proposed activity generating noise levels 20 or more decibels above ambient noise levels or with maximum noise levels above 90 decibels may occur during the northern spotted owl nesting season.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
During construction activity.	Continuous for the period of construction		HCP&BD*** and CDFW**		

BIO-2 Pond Maintenance to Prevent Bullfrog Infestation

All constructed ponds shall be kept free of American bullfrog infestations to prevent this non-native species from impacting special status aquatic species, such as the northern red-legged frog. To prevent significant bullfrog populations from developing due to the aquatic environment provided by the rainwater catchment ponds, the following measures shall be implemented as part of the project:

a) Controlling the bullfrog population following colonization will be achieved by draining the rainwater catchment ponds throughout the summer until no water remains at the end of the principal cultivation and irrigation period. This shall be repeated for 2 years to disrupt bull frog life cycles.

b) Direct removal methods shall be used should de-watering be ineffective for the removal of bullfrog populations.

c) Monitoring for bullfrog populations shall occur on an annual basis in order to prevent subsequent establishment.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
During project operations.	Continuous		HCP&BD*** and CDFW**		

BIO-3 Screening of Water Pumps

To prevent impacts to wildlife species including amphibians and reptiles during the term of the project, water pumps used for the operation shall contain screens meeting the CDFW fish screening criteria (http://www.dfg.ca.gov/fish/Resources/Projects/Engin/Engin_ScreenCriteria.asp).

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to the building permit final inspection.	Once		HCP&BD*** and CDFW**		

BIO-4 Replacement of Riparian Vegetation

Any riparian vegetation that is impacted by project activities, including but not limited to road improvement and maintenance, shall be replaced at a 3:1 ratio. The replacement of riparian vegetation will occur at appropriate locations on the project site and could include the enhancement of existing wetland and riparian areas at the site. If applicable, a mitigation plan will be prepared and submitted to regulatory agencies for review and concurrence prior to any construction that encroaches on SMAs, wetlands, or riparian areas.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to issuance of the building permit, during construction activity, and during project operations.	Once		HCP&BD*** and CDFW**		

BIO-5 Fencing During Construction to Protect Wetlands and Streamside Management Areas

To protect the riparian habitat at the project site during construction activities, temporary fencing shall be installed and maintained on the edge of SMAs and delineated wetlands. The fencing shall be installed prior to the beginning of construction activities and shall be removed after the final inspection is completed by the Building Department.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to issuance of the building permit and during construction activity.	Once		HCP&BD*** and CDFW**		

BIO-6 Demarcation of Special Status Biological Resources

To protect special status biological resources, all resource populations, including the two northern meadow sedge populations, northern red-legged frog habitat, Oregon white oak woodlands, California bay forests, and California oat grass prairies, must be demarcated by high visibility construction fencing during the project construction period in a manner sufficient to avoid unintentional impacts when project construction activities (aside from transportation along roads) will occur within 100 feet of these resources.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
During construction activities.	Once		HCP&BD***		

BIO-7 Minimize Northern red-legged frog impacts

To protect northern red-legged frogs during restoration activities in CDFW project PO-1, conduct excavation activities August-October.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
During construction activities.	Once		HCP&BD***		

BIO-8 Nesting Bird Surveys to Protect Migratory Birds including Grasshopper Sparrow

Project-related vegetation clearing should occur outside the bird nesting season, which is generally considered to be March 15 through August 1. 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 in those locations by a qualified biologist to ensure that active nests are not destroyed or disturbed.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
During construction activities.	Once		HCP&BD***		

CUL-1 Protocols for Construction Specific to Cowen Creek Documented Site

1. A qualified, trained archaeological monitor must be present during the mechanical excavation of soils and sediments from the pond area.
2. All project-related activities involving heavy equipment (excavators, bulldozers, pickup-trucks, etc.) within the archaeological site boundaries; which includes the location of the greenhouse, leach fields, photovoltaic installation, sheds, etc., must be conducted with an archaeological monitor present.
3. It is also recommended that all project-related ground disturbance activities in the vicinity of both archaeological sites identified be monitored by qualified cultural resources monitors.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to and during construction activity.	Once		HCP&BD***		

CUL-2 Inadvertent Discoveries of Cultural and Paleontological Resources, and Human Remains

The following provides means of responding to the circumstances of a significant discovery during the cultural monitoring of the final implementation of the proposed agricultural development

within the project parcel. If cultural materials for example: chipped or ground stone, historic debris, building foundations, or bone are discovered during ground-disturbance activities, work shall be stopped within 20 meters (66 feet) of the discovery, per the requirements of CEQA (January 1999 Revised Guidelines, Title 14 CCR 15064.5 (f)). Work near the archaeological finds shall not resume until a professional archaeologist, who meets the Secretary of the Interior's Standards and Guidelines, has evaluated the materials and offered recommendation for further action.

In the event that paleontological resources are discovered, work shall be stopped within 20 meters (66 feet) of the discovery and a qualified paleontologist shall be notified. The paleontologist shall document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in CEQA Guidelines Section 15064.5. If fossilized materials are discovered during construction, excavations within 66 feet of the find shall be temporarily halted or diverted until the discovery is examined by a qualified paleontologist. The paleontologist shall notify the appropriate agency to determine procedures that would be followed before construction is allowed to resume at the location of the find.

If human remains are discovered during project construction, work will stop at the discovery location, within 20 meters (66 feet), and any nearby area reasonably suspected to overlie adjacent to human remains (Public Resources Code, Section 7050.5). The Humboldt County coroner will be contacted to determine if the cause of death must be investigated. If the coroner determines that the remains are of Native American origin, it is necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the NAHC (Public Resources Code, Section 5097). The coroner will contact the NAHC. The descendants or most likely descendants of the deceased will be contacted, and work will not resume until they have made a recommendation to the landowner or the person responsible for the excavation work for means of treatment and disposition, with appropriate dignity, of the human remains and any associated grave goods, as provided in Public Resources Code, Section 5097.98.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
During construction activity and project operations.	Continuous		HCP&BD***		

ENE-1 Renewable Energy Generation Standards

The applicant shall ensure a minimum of 80% of project electrical energy is generated by renewable sources. This shall be accomplished through the use of solar arrays on-site with generator for backup. Alternatively, the project could interconnect into the local grid and obtain electrical energy from a local utility providing power generated from up to 80% renewable sources.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to cultivation and during project operations.	Annually		HCP&BD***		

GEO-1 Geotechnical Report Compliance

The applicant shall comply with all recommendations from the SHN Geotechnical Report (SHN, November 2016), which makes site-specific development recommendations to reduce risks and impacts in the areas of (1) Site Preparation and Grading, (2)Foundations for Structures, (3) Engineered Fill, (4)Water and Diesel Tanks, (5)Solar Array, (6) Greenhouse Structures, (7) ADA Parking Area, and (8) Other Considerations.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to the issuance of building and/or grading permits for the project.	Once		HCP&BD***		

GEO-2 Geologist Review of Plans

The grading, foundation design, drainage plans, and plan specifications shall be reviewed by a registered geologist prior to approval by the County.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to the issuance of building and/or grading permits for the project.	Once		HCP&BD***		

HWQ-1 Low Impact Design Improvements to Detain Stormwater

To address the increase in stormwater runoff that will occur due to the increase in impervious surface from the proposed project, the applicant shall design, construct, and maintain stormwater facilities to detain stormwater on the project site through low impact design (LID) improvements such as a pre-treatment pond, bioswales, infiltration basins, and detention basins, as applicable. The proposed stormwater improvements will ensure that additional stormwater runoff from the proposed project infiltrates into the ground on-site or is pre-treated prior to discharge without violating any water quality standards or waste discharge requirements. The final discharge from the area for all stormwater that does not infiltrate, evaporate or is consumed, will be discharged after pre-treatment through a culvert pipe outfall that is armored with rock to provide energy dissipation.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to the building permit final inspection.	Once		HCP&BD***		

HWQ-2 Implementation of Road Improvements

The applicant will implement all recommendations included in the Road Evaluation Report prepared for the access road off of Maple Creek Road to the Adesa Organic, LLC (SHN December 2016a). These measures include ditch enhancement and construction, placement of rock energy dissipation material, construction of rolling dips, and rocking the entire length of road, among others.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to the building permit final inspection.	Once		HCP&BD***		

HWQ-3 Spill Prevention, Control and Countermeasures

A plan for Spill Prevention, Control and Countermeasures (SPCC) shall be developed by a California Registered Engineer for each of the diesel tanks proposed for on-site fuel storage, subject to requirements of the U.S. Environmental Protection Agency and the California Environmental Protection Agency. All SPCC measures shall be implemented during project operations.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to the issuance of building and/or grading permits for the project.	Once		HCP&BD***		

NOI-1. Implementation of Noise Pollution Prevention Mitigation for Adesa Organic, LLC project site 433A

The project shall implement all measures described in the Acoustic Study and Noise Pollution Prevention Plan prepared by Hybrid Tech in April 2018 as modified by the Frank Hubach Associates 2020 noise study, to include:

-
- 8 foot tall block wall and supplemental 2-foot barrier of not less than two pounds per square foot surface weight surrounding the generators
- 8 foot tall block wall and supplemental 4-foot barrier of not less than two pounds per square foot surface weight surrounding the array of RTUs
- The block walls shall be continuous with solid metal doors with neoprene door jams. The walls shall be a minimum of 8 inches thick and be constructed of solid block or be filled after construction with grout or sand.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to the building permit final inspection.	Once		HCP&BD***		

NOI-2. Construction Related Noise

The following shall apply to construction noise from tools and equipment:

- The operation of tools or equipment used in construction, drilling, repair, alteration or demolition shall be limited to between the hours of 7 A.M. and 6 P.M. daily.
- All stationary and construction equipment shall be maintained in good working order and fitted with factory approved muffler systems.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
During construction activity.	Continuous during period of construction.		HCP&BD***		

NOI-3. Operations Related Noise

All noise generated from the project, including generators, ACU units and greenhouse fans, shall not exceed 50 decibels at 100 feet or edge of forest habitat, whichever is closer.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
During project operations.	Continuous		HCP&BD***		

* CALFIRE = California Department of Fire and Forestry
** CDFW = California Department of Fish & Wildlife
*** HCP&BD = Humboldt County Planning and Building Department
NCUAQMD = North Coast Unified Air Quality Management District

23. EARLIER ANALYSES.

Earlier analysis may be used where, pursuant to the tiering, program EIR, or other CEQA process, one or more effects have been adequately analyzed in an earlier EIR or negative declaration. Section 16063(c)(3)(D). In this case a discussion should identify the following on attached sheets:

a) Earlier analyses used. Identify earlier analyses and state where they are available for review.

1. Humboldt County General Plan & EIR
2. Humboldt County Zoning Ordinance

Items 1 and 2 are available for review at Humboldt County Planning Division.

The following documents in Section 22, available at the Planning and Building Department, have adequately analyzed one or more effects of the project. Earlier analysis has been used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration (CEQA Guidelines Section 15063 (c)(3)(D)).

b) Impacts Adequately Addressed. Some of the effects from the above checklist were within the scope of and adequately analyzed in the document(s) listed in Section 22, pursuant to applicable legal standards.

c) Mitigation Measures. It was not necessary to include mitigation measures, which were incorporated or refined from the document(s) described above (21. a) to reduce effects that are "Less than Significant with Mitigation Incorporated."

24. SOURCE/REFERENCE LIST

The following documents were used in the preparation of this Initial Study. The documents are available for review at the Humboldt County Planning Department during regular business hours.

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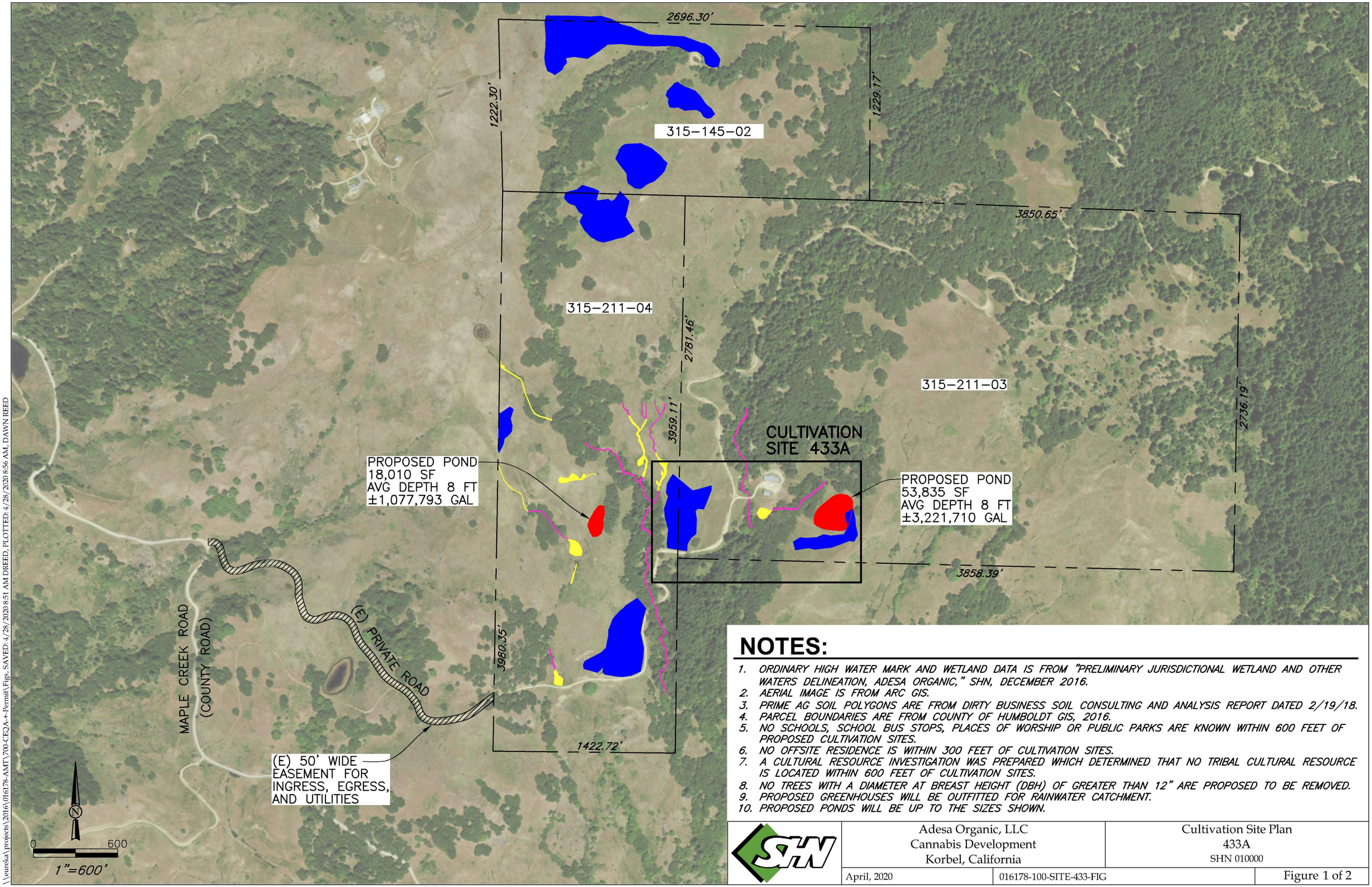
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ATTACHMENT A

Site and Operations Plans, Technical Documents



NOTES:

1. ORDINARY HIGH WATER MARK AND WETLAND DATA IS FROM "PRELIMINARY JURISDICTIONAL WETLAND AND OTHER WATERS DELINEATION, ADESA ORGANIC," SHN, DECEMBER 2016.
2. AERIAL IMAGE IS FROM ARC GIS.
3. PRIME AG SOIL POLYGONS ARE FROM DIRTY BUSINESS SOIL CONSULTING AND ANALYSIS REPORT DATED 2/19/18.
4. PARCEL BOUNDARIES ARE FROM COUNTY OF HUMBOLDT GIS, 2016.
5. NO SCHOOLS, SCHOOL BUS STOPS, PLACES OF WORSHIP OR PUBLIC PARKS ARE KNOWN WITHIN 600 FEET OF PROPOSED CULTIVATION SITES.
6. NO OFFSITE RESIDENCE IS WITHIN 300 FEET OF CULTIVATION SITES.
7. A CULTURAL RESOURCE INVESTIGATION WAS PREPARED WHICH DETERMINED THAT NO TRIBAL CULTURAL RESOURCE IS LOCATED WITHIN 600 FEET OF CULTIVATION SITES.
8. NO TREES WITH A DIAMETER AT BREAST HEIGHT (DBH) OF GREATER THAN 12" ARE PROPOSED TO BE REMOVED.
9. PROPOSED GREENHOUSES WILL BE OUTFITTED FOR RAINWATER CATCHMENT.
10. PROPOSED PONDS WILL BE UP TO THE SIZES SHOWN.

SHN	Adesa Organic, LLC Cannabis Development Korbel, California	Cultivation Site Plan 433A SHN 010000
	April, 2020	016178-100-SITE-433-FIG	Figure 1 of 2

\\eureka\projects\2016\016178-AMT\700-CEQA+Permit\Figs, SAVED: 4/28/2020 8:51 AM DREED, PLOTTED: 4/28/2020 8:56 AM, DAWN REED

EXPLANATION

- STREAMS
- (12) CEMENT PADS & TIE-DOWN
- (13) TANK ALARMS
- (14) CHECK FOR IRRIGATION LEAKS
- (15) REVIEW FERTILIZER/HERB/PEST FOR LABELS & STORAGE
- (16) REVIEW OF PETROLEUM STORAGE
- (17) CHECK COMPOST FOR LEACHING
- (18) MONITOR GARBAGE AREA

N

1" = 100'±

0 100

FEET

PHOTO SOURCE: SHN 2016

<P> SOLAR

<P> THREE 10,000 GALLON WATER TANKS

12

13

CUT/FILL TRANS.

<P> DIESEL TANKS

<P> GENERATOR SHED (750 SQFT)

16

~8' FILL

~12' CUT

~15' CUT

<E> WELL

ELEC.

<P> FIRE HYDRANT

<P> WATER LINE

EXISTING AG EXEMPT BARN, CONSTRUCTED 2009. PROPOSED DRYING/PROCESSING

15

<P> POWER LINE

<P> ADA PARKING

18

<P> GARBAGE

17

<P> COMPOST

<P> ADA BATHROOM

100' POND BUFFER

<P> LIMITS OF GRADING

~5' CUT

<P> CONCRETE PAD FINISHED FLOOR ELEV. 2,319.0'

CULVERT

~15' FILL

<E> FENCE

<P> CULTIVATION AREA (43,200 SQFT)

<P> CULTIVATION AREA (43,200 SQFT)

<E> POND

EXISTING AG EXEMPT BARN, CONSTRUCTED 2009. PROPOSED STORAGE ROOM

<P> POND

<P> CULVERT

<P> PRIME AG SOILS BOUNDARY (85,519 SQFT)

~3.5' CUT

14

RTU

~4' FILL

CUT/FILL TRANSITION

<P> ROAD TO <P> POND

<P> LEACH FIELD

<P> 100% RESERVE AREA LEACH FIELD

2380 2370 2360 2350 2340 2330 2320 2310 2300 2290 2340 2330 2320 2310 2320

SHN	Adesa Organic 2019 Site Plan Modifications Maple Creek, Humboldt County, California	433 A Site Map SHN 016178.800
	June 2019 | 800FigX_433A_SiteMap	Figure 2 of 2

\\eureka\projects\2016\016178-AMT\GIS\PROJ_MXD\800\ USER:hhummel DATE:4/28/2020

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Humboldt County
Cannabis Svcs.

Cultivation and Operations Plan

Four Mixed Light Cultivation Projects at 23550 Maple Creek Road
(APNs 315-145-002, 315-211-003, and 315-211-004)
Adesa Organic
REVISED June 9, 2019 (Additions are **underlined**. Deletions are ~~**struck out**~~.)

1. Mission Statement

Adesa Organic seeks to provide the highest quality, sustainably grown cannabis using organic agricultural methods. We aim to better the lives of our customers, the community we serve and live in, and to inspire others to do the same.

2. Water

2.1 Water Source

Effectively all elements of Water Source are shared between the Deva Amrita, LLC (Deva Amrita or Deva) and Adesa Organic, LLC (Adesa Organic or Adesa) projects. Rainwater will be the primary water source, collected from precipitation onto ponds and greenhouse roofs. Water may also be sourced from a well or wells located onsite (some yet to be developed). Average annual rainfall in Maple Creek is estimated at 64.5 inches (5.375 feet) per year (http://www.weatherbase.com). Deva and Adesa will be able to collect approximately 2,888,729 gallons of rainfall from precipitation falling onto the two proposed ponds (71,845 sf of total ponds x 5.375 ft = 386,166 cu ft = 2,888,729 gallons). They will also collect approximately 3,311,836 gallons of water from Adesa's 82,368 sf total greenhouse roof (82,368 sf of roof x 5.375 ft = 442,728 cu ft = 3,311,836 gallons) and approximately 382,135 gallons of water from Deva's 9,504 sf total greenhouse roof (9,504 sf of roof x 5.375 ft = 51,084 cu ft = 382,135 gallons). Total water collected annually from rainfall will be 6,582,700 gallons (2,888,729 gallons from ponds + 3,693,971 gallons from roofs = 6,582,700 gallons).

2.2 Water Storage

Effectively all elements of Water Storage are shared between the Deva Amrita, LLC and Adesa Organic, LLC projects. Two ponds are proposed. East of Site A, a 3,221,710-gallon pond is proposed (53,835 sq ft x average depth 8 ft = 430,680 cu ft = 3,221,710 gal). At Site B, a 1,077,793-gallon pond is proposed (18,010 sq ft x average depth 8 ft = 144,080 cu ft = 1,077,793 gal). **The second pond will be built only on a as-needed basis.** Three 10,000-gallon water tanks will be located next to each of the two **Adesa** greenhouses, and three 10,000-gallon water tanks will also be located next to the Deva greenhouse, for an

additional 90,000 gallons of water storage. Total proposed water storage is 4,389,503 gallons (4,299,503 gallons in ponds and 90,000 gallons in tanks).

2.3 Water Usage

By removing two winter cycles and growing smaller, shorter life-cycle plants, annual water use was drastically reduced.

Annual Water Usage	Site A	Site B	Total 82,368 sf
Flowering Water Use			
Square Feet per Harvest	2,052	2,052	
Gallons per Square Foot	0.5	0.5	
Number of Watering per 63 Day Cycle	21	21	
Total Water use per Harvest in Gallons	20,748	20,748	
Number of Harvests a Year	33	33	
Yearly Water Use in Gallons	684,684	684,684	1,369,368
Vegetative Water Use			
Number of 1 Gallon Plants per Cycle	4,200	4,200	
Gallons per Plant	0.1	0.1	
Number of Waterings per 10 Day Cycle	5	5	
Water Use per Veg Cycle	2,100	2,100	
Number of Veg Cycles	33	33	
Yearly Water Use in Gallons	69,300	69,300	138,600
Mother Plants			
Number of 5 Gallons Plants	559	559	
Gallons per Plant	3	3	
Number of Waterings a Year	92	92	
Yearly Water Use in Gallons	154,284	154,284	308,568
Clones Plants			
Number of Clones per Cycle	5000	5000	
Water Use in Gallons a Day	0.008	0.008	
Number of Waterings per 18 Day Cycle	18	18	
Number of Cycles a Year	33	33	
Yearly Water Use in Gallons	23760	23760	47,520
TOTAL YEARLY WATER USE	**Site A**	**Site B**	**Total 82,368 s.f.**
Yearly Total in Gallons	932,028	932,028	1,864,056.00

2.4 Irrigation Plan

A drip system will be used to irrigate the mixed-use greenhouses. Any excess irrigation runoff will be captured and collected through a gutter system beneath the growing benches (PVC or pitched plastic gutters and piped directly to a mixed-media water filtration system (everfilt.com/). This water filtration system works efficiently enough to clean all of the excess irrigation water, preventing any runoff. Presently, the plan is to use a customized multi-tank system at each greenhouse. This cleaned irrigation water can then be reintroduced back into the onsite water holding tanks or pushed back into the ponds.

3. Site Drainage

As explained above in Section 2.4, all excess irrigation runoff will be captured and recycled through a mixed-media water filtration system. Therefore, no excess irrigation water will run off the site. Rainwater falling on the greenhouse and production building roofs will be captured and stored for use. Site topography is relatively flat at the cultivation and processing sites, with slopes of 5-15%.

4. Watershed and Habitat Protection

The proposed cultivation and processing areas are over 100 feet from wetland areas. Since there will be little to no irrigation water leaving the greenhouses, there are no expected impacts on the nearby watersheds or habitats. There will be erosion control measures surrounding the water tanks in case of any accidental leaking. Adesa will be using all OMRI certified organic ingredients, which will further reduce the potential for adverse impacts to the watershed.

5. Storage and Use of Fertilizers and Pesticides

All certified organic amendments, teas, and pesticides/fungicides are certified for organic farming. The materials will be stored in locked storage stations in the proposed drying/~~processing~~ **storage** buildings, and will be taken back to the stations immediately after use. **All fertilizers, pesticides, fungicides and cleaning products will be stored individually in safety catchment containers.** There will be full-body disposable zip-ups with hand and face protection, and ventilation available for anyone using these products.

Adesa will be very focused on preventative measures to minimize chemical pesticide and fungicide use. Adesa is working with an insectary to implement biological predators in our greenhouses that will live on the plants and control unwanted pest populations. The predatory insects will be released on a regular schedule and contained within the greenhouses.

6. Cultivation Activities

This cultivation and operations plan describes four "mixed light" projects/permits. ~~– two at Site A and two at Site B.~~

~~Two permits will be used on Site A:~~ **All four permits will be located in a quad adjacent to one another:** ~~one~~ **two** permit**s** for 22,000 square feet of mixed-light greenhouse and ~~one~~ **two** permit**s** for 21,200 square feet of mixed-light greenhouse~~.~~
~~Another two permits will be used for Site B: one permit for 22,000 square feet of mixed-light greenhouse, and one permit for 17,168 square feet of mixed-light greenhouse.~~

Total proposed cultivation area is ~~82,368~~ **86,400** square feet. ~~Total proposed area of prime soil used including the greenhouses is 83,492 square feet.~~

The "mixed light" greenhouse operation will use photoperiod controls such as supplemental lighting and light deprivation to have three harvest cycles in a year. There will be a harvest every one week, and new clones will be moved into that space, thus creating a perpetual harvest season. Adesa will be using a soil fertility management plan from a crop management company to continuously test soil nutrient levels and recommend organic amendments to rebalance the soil. This process will allow Adesa to recycle soil. Adesa will use all ~~'vegan'~~ certified organic ingredients in a soilless potting media.

7. Processing Plan

7.1 Summary of Processing Practices

- Processing operations will be maintained in a clean and sanitary condition including all work surfaces and equipment.
- All employees will follow strict sanitary guidelines to prevent mold, mildew and bacterial contamination.
- Employees who are handling cannabis in our processing operations will have access to facemasks and gloves in good operable condition as applicable to their job function.
- Employees will be required to wash their hands sufficiently or use gloves when handling cannabis.

7.2 Processing Activities and Location

At harvest the product will be taken to the proposed processing buildings on APN 315-211-003 where employees will hang the wet product in a drying room. This room will be humidity- and temperature-controlled to remove moisture. Once the drying is finished, the dry flowers will be moved to another climate controlled room at the processing buildings and put in curing bins. With minimal human intervention, and proper ventilation and humidity levels, these procedures will ensure a contaminant-free finished product. After curing is completed, the product will **be transferred to a separate facility in another jurisdiction for further** processing, packaging and storage~~. It is noted that the processing facilities will be shared with the Deva Amrita, LLC cultivation project which is located on an adjacent legal parcel.~~

7.3 Employees

There will be approximately ~~20~~**15** full time employees. Up to ~~8~~ **5** part time employees will be hired during harvest for up to 10 days per month.

7.4 Summary of Employee Safety Practices

All cultivation and processing operations will comply with the following Employee Safety Practices:

- Adesa will implement safety protocols and provide all employees with adequate safety training relevant to their specific job functions, which may include:
  - Emergency action response plan
  - Employee accident reporting and investigation policies
  - Fire prevention plan
  - Hazard communication policies, including maintenance of material safety data sheets (MSDS)
  - Materials handling policies
  - Job hazard analyses
  - Personal protective equipment policies, including respiratory protection
- Adesa will visibly post and maintain an emergency contact list which will include, at a minimum:
  - Operation manager contacts
  - Emergency responder contacts
  - Poison control contacts
- At all times, employees will have access to safe drinking water and toilets and Handwashing facilities that comply with applicable federal, state, and local laws and regulations.

7.5 Toilet and Handwashing Facilities

ADA-compliant toilet and handwashing facilities will be located in a proposed new stand-alone building near the processing facilities. This is within a one-minute walk from **the** cultivation site~~. A, and a one-minute ride from cultivation Site B. At each cultivation site there will be 'quads' available for employees to take back to the restroom facilities.~~

7.6 Plumbing and/or Septic System

A new onsite sewage disposal system will be constructed in accordance with the County's sewage disposal system requirements. The system will serve the toilet and handwashing facilities located near the processing facilities.

7.7 Source of Drinking Water for Employees

There will be ADA compliant restrooms and water coolers near the ~~processing and~~ drying facilities. Drinking water will be treated onsite well water or purchased water coolers.

7.8 Road Use

The site is accessed from Maple Creek Road, the nearest public road. An approximately 1-mile-long unpaved driveway provides access to the project site. Although Adesa will have ~~20~~ **15** employees working in the greenhouses at all times, we plan on minimizing road use by having a company shuttle car that picks up employees in Eureka and Arcata, and then drops them off after the end of shift. If employees prefer they can carpool and park in the parking lot at the processing buildings, which will have at least one ADA accessible spot.

8. Cultivation Cycles

Crop cycles will be offset so that harvests occur every one week. ~~In each of the two cultivation sites (comprised of two permits each)~~ There will be three harvests planned per year, with 9 day breaks in between flower cycles. ~~For Site A (permits one and two),~~ **W**e will harvest ~~2,052~~ **4,104** square feet of flowering canopy every one week. ~~For Site B (permits three and four), we will harvest 2,052 square feet every one week.~~ We expect each flower cycle to take on average 64 days.

9. Schedule of Activities

Clone propagation will start mid-January. The first crop will be moved into the flowering space mid-February and the first harvest will be mid-April. The last harvest will occur around the first of November. The vegetative greenhouse space will have supplemental

light to ensure a consistent 16 hours of sunlight every day. The light plan for the flower space will also adjust with the season to ensure 12 hours of sunlight. The amount of supplemental light used will depend on sunrise and sunset times, and also if the plant receives the DLI (Daily Light Interval) necessary throughout the day.

Using the Astronomical Application Department's online Duration of Daylight Calendar, we were able to calculate the hours needed to use supplemental light in Korbel. Because Korbel is closer to the coast than the actual cultivation site, we expect to have slightly less overcast days throughout the year.

The vegetative plants will receive light from 6 am to 10 pm. The flowering plants will always receive light from 8 am to 8 pm even during Daylight Savings time so as to not turn the light on in the morning. The time was chosen because at our location the latest the sun rises is 7:40 am on any given day, essentially removing the need to use lighting in the morning. Because our mixed-light greenhouses will be using solar energy we want to run the lights, if at all needed, later in the day when the solar batteries have had time to charge. Below is a chart showing necessary hours of light needed monthly in both sections of the greenhouse.

Supplemental Light Use Daily	Flowering	Vegetative
January		6 -7 hr
February	1 - 2 hr	5 - 6 hr
March	.5 - 1 hr	5 - 3 hr
April		2 -3 hr
May		1 -2 hr
June		1 hr
July		1 -2 hr
August		2 -3 hr
September	0.25 hr	3 - 4 hr
October	.5 - 1.5 hr	4.5 - 5.5 hr
November		5.5 - 6.5 hr
December		6.5 - 7 hr

10. Security Plan

All ~~greenhouses and processing~~ buildings will be under off-site wireless camera supervision, including all doors, gates, storage and processing facilities. The ~~processing~~ **drying** facility and ~~each~~ **the** greenhouse will have a security officer present during all business hours. All employees will be background screened and only managers will have keys to locked areas such as the greenhouse, drying, curing, processing and storage facilities. All doors and gates will have motion-sensor activated cameras and lights. All doors will also have sensors and wireless transmission to notify when doors are opened outside business hours. We will be immediately implementing a seed-to-sale software, in coordination with State requirements. Each plant will be labeled and the finished product will be accounted for per each plant. This will prevent any diversion into the black-market. All exchanges between distributors will take place in an area that is under camera supervision and they will move the product with armored cars. Those with access to the track and trace system will go through mandatory compliance training.

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JUN 25 2019
Humboldt County
Cannabis Svcs.

June 9, 2019

Laura Borusas
23333 Maple Creek Rd
Korbel, CA 95550
LBorusas@gmail.com

To Whom It May Concern:

The relocation of the proposed greenhouses at Sites A and B are the best available on the property for the following reasons: no activities will take place on any areas of cultural events, consolidating the cultivation activities will reduce disturbance to the available habitat, and this is the most efficient use of existing road work and infrastructure to minimize our footprint on the site.

The new site location will avoid an area of interest for the Bear River Tribe and better preserve the cultural resources available on site. Although the cultivation area seems to be only a nominal distance from its original location, most of the new site is located on an existing farm road and previously graded area. Looking at the provided diagrams, you can see that the ditch will be filled from the surrounding mounds on either side and leveled off and feathered to the edges, which will look natural on the site and more similar to what it looked like prior to the road development.

By consolidating our entire project to this one stretch from the greenhouses to the pond, we have eliminated more than half of our total project area. Previously, from the most western point of Site B to the eastern part of the proposed main pond, our entire space for potential disturbance was about 1.48 million square feet. With our new plan, the total area of disturbance is reduced to 522,000 square feet. This consolidation removes sources of light and noise —specifically, the greenhouse and generator system. By joining the cultivation areas, we now have sound and light emanating from only one condensed area.

Previously the proposed sites were on either side of two unnamed tributaries to Cowen Creek (Site A and B, and Site A and the processing area). In our new proposal, the consolidation allows for a more natural wildlife corridor to exist on the west side of the tributaries that will no longer have adjacent project activities.

11923 315-211-004

The new site location is also better than our previous plan with respect to Golden Eagles. Eagles like to conduct their activities within eyesight of their nest, and our new consolidated project would be 'tucked' into the woods out of the direct line of sight of the nest. Andrew Orahoske of CDFW first told us this on a site visit in summer 2018, and later our biologist and raptor expert Sandra Hunt von Arb confirmed this opinion.

Without using Site B and doing everything in the flat between Site A and the processing buildings, we are placed well out of the direct line of sight of the Mad River Valley, Maple Creek road, and every other property besides our own and the Green Diamond property to the north of us. For this reason Site B was eliminated from our decision process- it was entirely exposed to the Mad River Valley.

Our new consolidated plan would eliminate the proposed metal support building and associated activities. We will instead only renovate the existing ag exempt barn to dry on site. All trimming and packaging would occur at a different site in another agency's jurisdiction. Without the construction and the associated ongoing operations of the support building, our impact is even further reduced from our original plan.

In short, relocating the cultivation areas is the most elegant method for accomplishing our project while also achieving the lowest impact with regards to habitat take, disturbance potential, ease of mitigation, construction, and daily operation.

Sincerely,

Laura Borusas

January 24, 2018

Joshua Dorris, Planner II
Humboldt County Planning & Building Department
1106 Second Street
Eureka, CA
95501

Subject: **Self-Certification of Maple Creek Road**

Dear Mr. Dorris,

This letter is in response to the road evaluation report that we have been asked to prepare as part of our CUP16-452. In order to determine if the road meets Category 4 standards we performed an analysis of road width of Maple Creek Road from Butler Valley Road to roughly 8 miles out to the site at APN 315-146-018.

To complete the assessment we measure the road width at 26 locations. A rope was painted black and white alternating at 12" increments to clearly show the measured width. A picture at each location was taken as well as the GPS coordinates. Attached is a map showing the locations along the road, as well as the 26 pictures allowing you to see the black and white portions of the rope to verify the widths.

We have determined that this segment of Maple Creek Road is developed to a Road Category 4 standard. The roadway is generally 20 feet wide, but does contain some areas that are slightly narrower. These locations are not necessarily at pinch points such as bridges, culverts, trees, or rocks but merely areas where the rocked or paved portion of the road narrows. At the few locations that were less than 20 feet wide there were wide shoulders, turnouts, driveways, or other road connections that provided for a road section that was much wider than 20 feet.

Attached you will find the photos and an aerial view of the road showing the location of each photo.

If you have comments or concerns regarding this report, please call me at 707-391-7847.

Sincerely,

Laura Borusas

Laura Borusas

Attachment: Road Photos and Location Map

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SHN
Consulting Engineers & Geologists, Inc.

Adesa Organic
Road Analysis
Maple Creek Road

Road Width
Sample Locations
SHN 016178.400

January 2018

\\eureka\projects\2016\016178-AMT\400-Road-Analysis\Figs\20180112-SampleLocMap.doc







Photo #1-Approximate road width: 20 feet



Photo #2-Approximate road width: 20 feet



Photo #3-Approximate road width: 20 feet



Photo #4-Approximate road width: 20 feet



Photo #5-Approximate road width: 22 feet



Photo #6-Approximate road width: 18 feet (does not include driveway)



Photo #7-Approximate road width: 19 feet (does not include driveway)



Photo #8-Approximate road width: 18 feet (does not include driveway)

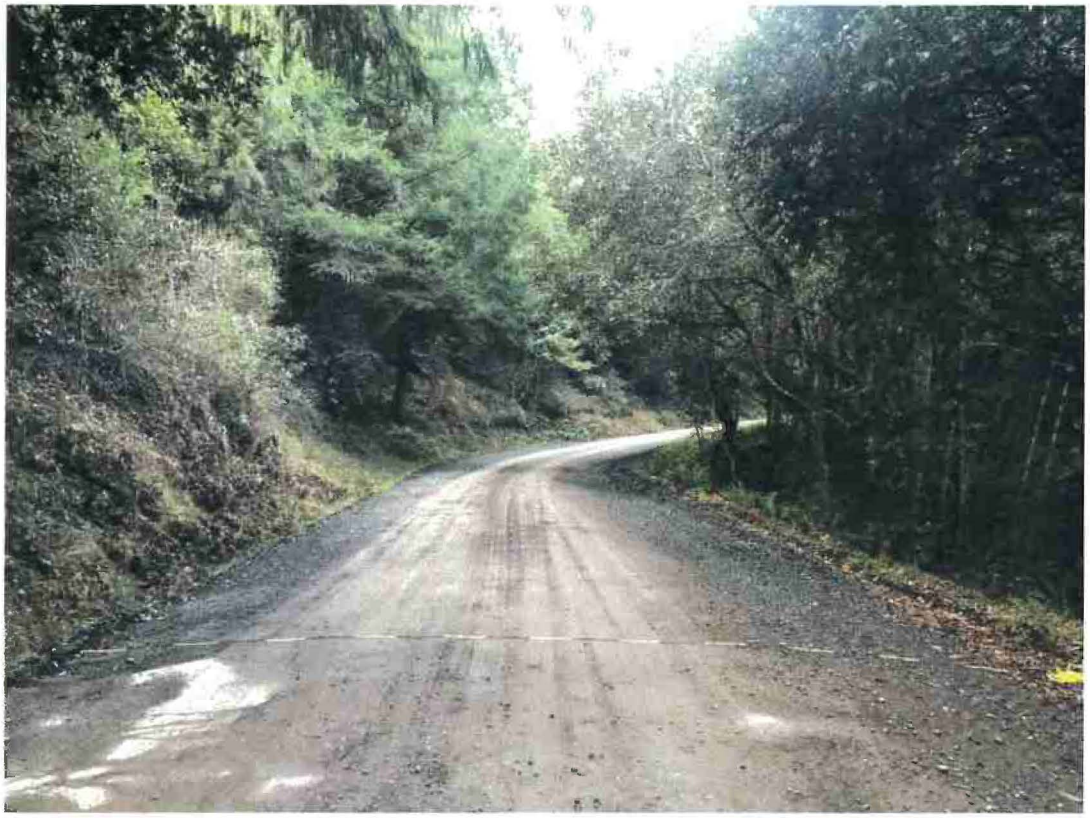


Photo #9-Approximate road width: 20 feet



Photo #10-Approximate road width: 17 feet (does not include shoulder)



Photo #11-Approximate road width: 20 feet



Photo #12-Approximate road width: 20 feet



Photo #13-Approximate road width: 20 feet



Photo #14-Approximate road width: 19 feet



Photo #15-Approximate road width: 21 feet



Photo #16-Approximate road width: 20 feet



Photo #17-Approximate road width: 22 feet



Photo #18-Approximate road width: 17 feet (does not include shoulder)



Photo #19-Approximate road width: 18 feet



Photo #20-Approximate road width: 19 feet



Photo #21-Approximate road width: 19 feet

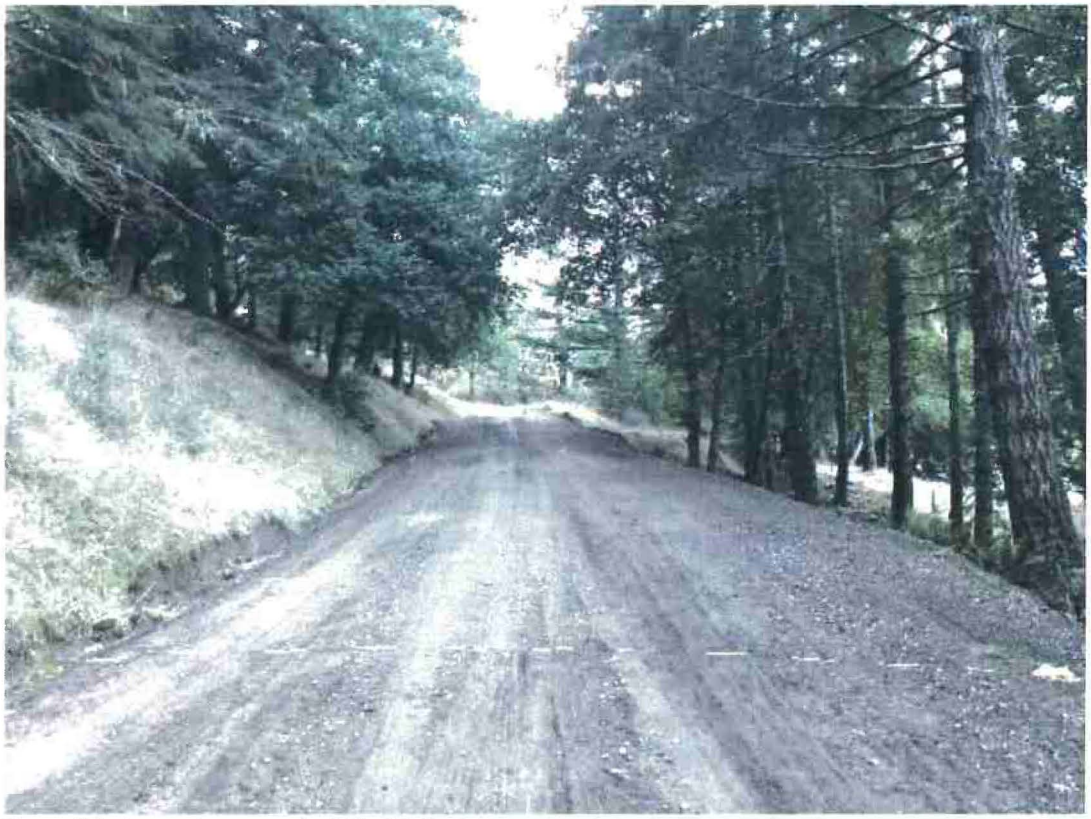


Photo #22-Approximate road width: 21 feet



Photo #23-Approximate road width: 23 feet

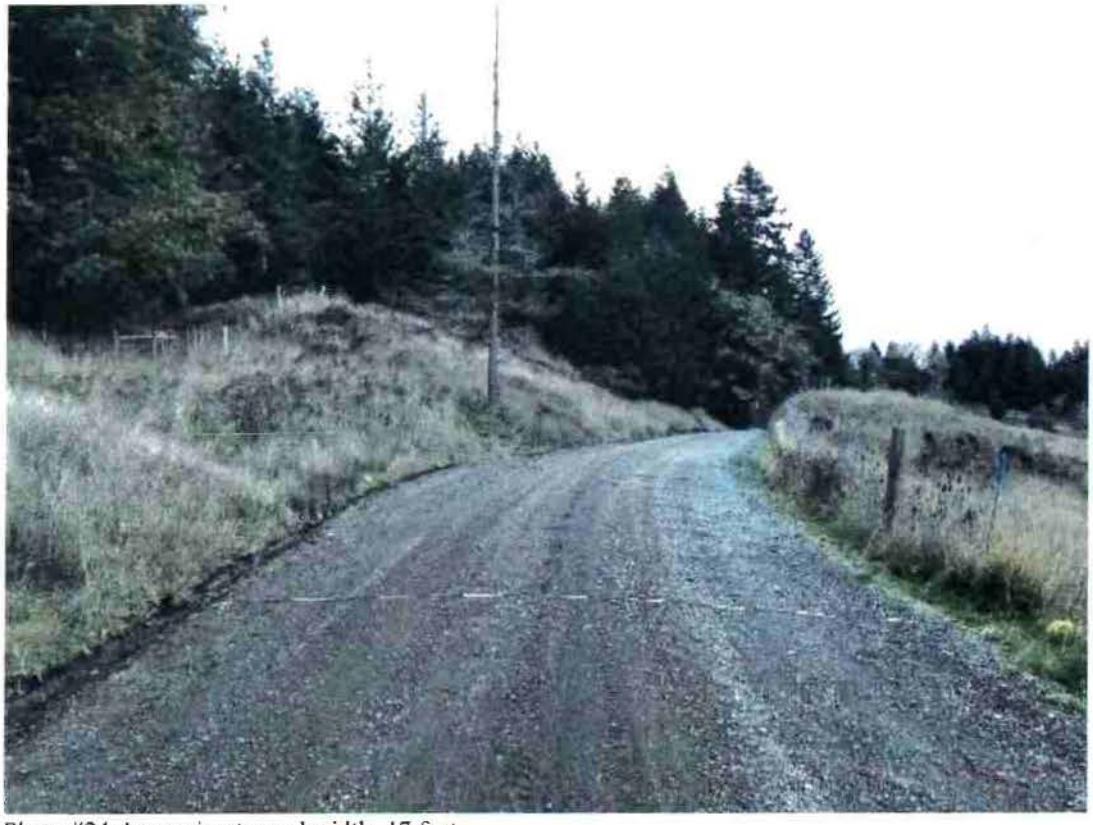


Photo #24-Approximate road width: 17 feet

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Photo #25-Approximate road width: 18 feet (does not include shoulder)



Photo #26-Approximate road width: 17 feet

Adesa Organic
Maple Creek
Humboldt County, CA
Environmental Noise Control
11 March 2020

It is understood that the County has raised a question regarding the environmental noise impact due to operation of diesel electric generators and air-conditioning units proposed for this facility. This report is based on review of drawings, reports and specifications provided by the Owner, and our calculations. This study is limited to the generators and RTUs (packaged air-conditioning units). Frank Hubach, of Frank Hubach Associates, Inc. (FHA) has conducted this investigation.

The noise criterion is given as a significance standard of 50 dB at the "tree line". Source data for a 500 kW generator with a custom sound enclosure was provided as 60 dBA at 7 meters (23 feet), as shown in a 28 February 2020 letter from Global Power Supply, LLC. This generator noise rating has no breakdown of octave band spectral values. In our analyses we have taken barrier loss values at 250 Hz as this is typically the maximum octave band for acoustically enclosed diesel generators. Sound data for the RTUs were taken from the Hybrid Tech LLC report (*20180426-Acoustic Study HT-Adesa.pdf*). The Site Plan used in these analyses is by SHN (*800FigX_433A_SiteMap20190614.pdf*).

The two generators will only operate one at a time. All fourteen RTUs are assumed to be operating simultaneously. The eight feet tall masonry walls at the generators and RTUs recommended by Hybrid Tech have been included in our analyses. Initial analyses determined additional noise mitigation will be needed. The selected treatment is to add supplementary acoustic barriers on top of the eight feet tall masonry walls.

Frank Hubach Associates, Inc *4905 Central Ave, Ste 100*
Richmond, CA 94804

Acoustics and Vibration
Engineering Consultants

Phone 510-528-1505
Fax 510-528-1506
Email: info@fha-eng.com

The following are our analyses results.

The closest receptor is a minimum 95 feet to the east. The spreadsheet calculations include distance attenuation, summing of fourteen RTUs and one generator, and acoustic barrier loss. The spreadsheet is complex and not presented herein for brevity. A maximum noise level at the closest receptor is predicted to be 47.0 dBA.

Recommendations

The supplementary barriers on top of the eight feet tall masonry walls are to extend to ten feet above grade for the generators and twelve feet above grade for the RTUs. The construction is to be airtight and not less than two pounds per square foot surface weight.

It is my opinion that employing these recommendations will result in the 50 dBA criterion being achieved with reasonable certainty.

Respectfully submitted:

Frank J. Hubach
President

FJH:fjh

J:\73203\N\GeneratorStudy3.wpd

Laura Borusas
23333 Maple Creek Rd
Korbel, CA 95550
Lborusas@gmail.com
January 27, 2019

Elizabeth Schatz, Senior Planner
Planning and Building Department, Cannabis Services Division
County of Humboldt

Dear Ms. Schatz:

In order to reduce our project's air quality impact and net PM10 emissions, we will implement both quantified measures and best management practices (BMP) that avoid, sequester and create fewer emissions. These include providing a company vanpool, overhauling our energy system on the property, rocking an unpaved road, and investing in ultra-efficient equipment in our mitigation efforts

As Humboldt County is in non-attainment for the state 24-hour particle (PM_{10}) ambient air quality standard, we have paid particular attention to ways we can decrease these emissions. PM_{10} is any combination of mineral, metal, soot, smoke and dust particles under 10 microns in diameter. Primary sources of particulate matter are engine exhaust and dust from paved and unpaved roads, open burning of vegetation, residential wood stoves, and stationary industrial sources such as timber mills or factories.

As a farming business has unavoidable emissions of transporting employees to the site and taking products out, our transportation-related project elements focus on increasing efficiency and creating fewer emissions. We will first rock the approximate mile-long driveway between the County road and project area, and as part of this work, will post 15-mph speed limit signs on the way. A rocked road still emits some dust, but much less than a dirt road. Also, maintaining a 15-mph speed limit reduces kicked up dust emissions.

To further reduce transportation-related air quality emissions, we are also choosing to implement a mandatory employee vanpool that will drive employees to and from work. We will combine errands to the best of our abilities for picking up things in town with the shuttle instead of making individual trips.

Since the vans we are looking into can seat 15 people, which is the entire full-time staff, this reduces daily miles traveled to $1/15^{th}$ the impact compared to each person taking their vehicle. Some adventurous souls like to bicycle Butler Valley Ranch Road all the way from Freshwater to Maple Creek Rd and to encourage more bicycle use for future employees; we will offer to pick them up at that intersection as part of the shuttle. Another way we will create fewer emissions is by choosing to take the paved Butler Valley Ranch Road to get to town rather than the unpaved Maple Creek Rd.

in addition to the migration efforts listed above, we will be upgrading the existing energy system on the property to meet or exceed 80% of power generation from renewable sources. We will install a new solar system as the current one has very outdated technology and has become inefficient, although we will look into a small additional wind system as well. There are two wood-burning stoves on the property

presently in use: one in the principal residence that is used almost daily for six months of the year and one in the adjacent ag building which gets used about 45 to 60 days a year.

By adding more renewable energy, we will be able to discontinue burning wood on the property entirely and instead use electric heat which avoids direct emissions of PM_{10}. This, in turn, reduces our ozone gas emissions because we will use thousands of fewer gallons of propane, and it also removes the need for propane trucks to come out as often. As part of this process, we will also switch out appliances and lighting fixtures to new more energy efficient versions.

Lastly, there are many life-cycle best management practices that we are proposing which additionally reduce emissions. These include on-site sequestering of carbon material from the facility using bokashi fermentation, reusing our soil, sourcing recyclable materials for our packaging, and using the highest efficiency agricultural lights in the industry.

Bokashi is a natural fermentation process that quickly decomposes waste into a highly usable fertilizer liquid. We will be able to compost all of our biomass waste, paper, and food scraps and then reuse the material as fertilizer for the grow and the property. Using the bokashi method will eliminate all green waste from leaving the property. We will also recycle our soil which removes the need to bring potting soil from town every harvest as is the standard practice in cannabis now. Collectively, composting and reusing materials reduces our contribution to on-road PM10 emissions as well as the ozone generation from vehicle exhaust and contributing to landfills. The entire process of farming and composting is inherently a form of sequestering atmospheric carbon.

As time goes on, there will inevitably be new technology and opportunities that evolve beyond our dedicated contribution today, and we look forward to working within our company and our community to reduce air quality emissions.

Respectfully,

Laura Borusas

Adesa Organic, LLC

February 28, 2020

Via email to: Bill@citysound.us

RE: 500kw, 60 dBA Generator

Attn: Mr. Bill Bigley

Global Power Supply, LLC can provide Adessa, from one of our suppliers, a 500 kW generator, rated at 60 decibels, at 23 feet in a free field environment, with a custom sound enclosure in accordance with your specifications.

If there are any other questions, please feel free to contact me directly either by email, ron.zamir@globalpwr.com or by phone at 805-724-0596.

Sincerely,

Ron Zamir
President of Global Power Supply, LLC

MONITORING AND REPORTING PROGRAM
FOR
WAIVER OF WASTE DISCHARGE REQUIREMENTS
ORDER NUMBER R1-2015-0023

The Monitoring and Reporting Program has two components (Monitoring and Reporting), reflected in the two sections below. The information collected through site monitoring and inspections, per Section I and reporting forms completed per Section II must be retained on site and made available upon request by Regional Water Board staff. As part of the initial enrollment, a filled copy of the Annual Reporting form in Section II must be submitted, in addition to the Notice of Intent and filing fee. Following enrollment, the Annual Reporting form shall be submitted annually by March 31.

Monitoring, including periodic site inspections and reviews of operational practices, helps to ensure that standard conditions are being met, that management measures and controls are effectively protecting water resources, and that any newly developing problems representing a water quality concern are identified and corrected quickly. Whether submitted directly to the Regional Water Board or through an approved third party program, the required reporting elements allow the Regional Water Board to assess general program implementation and compliance by tier category and by subwatershed. For example, reporting form information can allow staff to determine how many Tier 2 Dischargers are in the process of developing water resource protection plans, how many have developed and are implementing plans, how many are in compliance with standard conditions, how effectively BMPs are performing, and what changes or improvements are needed to improve program effectiveness or compliance rate.

On a sub-watershed-wide scale, this information enables the Regional Water Board staff to comprehensively track activity from Tier 3 cleanup and restoration sites and individual instream work proposed under Tier 2 water resource protection plans to help correlate cleanups and activities or restoration or remediation work in streams or wetlands that are proposed and underway in individual watersheds and subwatersheds. It may be necessary to limit the number of individual potential construction-related impacts occurring at any given time in any given subwatershed.

I. Monitoring

This information below is applicable to all sites and may also be part of or incorporated into the water resource protection plan for Tier 2 sites.

A. Site Map:

Please create a legible map identifying the features listed below where applicable. You may need to use a full-page satellite map (e.g. Bing, Google, or similar) and one or more additional maps at appropriate scales. The map(s) may be preliminary upon enrollment and refined upon completion of a thorough site inventory:

1. Property topography
2. Perimeter of land owned or leased
3. Watercourses and stream crossings
4. Roads, clearings, and developed areas
5. Perimeters of cultivation areas
6. Water source types and locations (surface water diversion, well, rainwater catchment) and water storage types and locations (storage tanks, ponds, bladders)[1]
7. Nutrient and chemical storage locations (i.e. fertilizers, pesticides, petroleum)
8. Buildings
9. Garbage/refuse storage facilities/locations
10. Human waste facilities (e.g. septic tanks and leach fields, privy, composting toilet)
11. Unstable earthen features
12. Soil or spoils storage/stockpile/disposal areas
13. Controllable sediment discharge sources identified for upgrade, cleanup, remediation, or restoration (as part of Tier 2 Water Resource Protection Plan or Tier 3 Cleanup and Restoration Plan)
14. Mark or highlight those locations where wastes or pollutants, whether spilled, placed, or stored could be transported into surface water or leached into groundwater
15. Management measures to control wastes and other water quality factors
16. Map legend

[1] A basis of water right and relevant documentation shall be kept on site with the site map and monitoring records. Relevant documentation may include:

- A letter, or email from the State Water Board acknowledging that a statement has been filed with the State Water Board in support of a pre-1914 or riparian water right claim.
- A copy of an appropriative water permit, license, registration, or filed statement.
- A true and correct copy of an application, or other documentation verifying that an application has been submitted to the State Water Board to obtain such a right, permit, registration, or license.
- Explanation of why such documentation cannot be provided.

Note: Copies of documents may be downloaded from the State Water Board's Electronic Water Rights Information Management System (eWRIMS).

B. Monitoring Inspections:

Sites shall be inspected periodically to ensure conformance with standard conditions. Site inspections should include visual inspection of the site, including any management measures, to ensure they are being implemented and are functioning as expected. Inspections include photographic documentation of any controllable sediment discharge sites, as identified on the site map, and a visual inspection of those locations on the site where pollutants or wastes, if uncontained, could be transported into receiving waters, and those locations where runoff from roads or developed areas drains into or towards surface water. At a minimum, sites shall be inspected at the following times to ensure timely identification of changed site conditions and to determine whether implementation of additional management measures is necessary to prevent or minimize discharges of waste to surface water:

1. Before and after any significant alteration or upgrade to a given stream crossing, road segment, or other controllable sediment discharge site. Inspection should include photographic documentation, with photo records to be kept on site.
2. Prior to October 15 to evaluate site preparedness for storm events and stormwater runoff.
3. By December 15.
4. Following any rainfall event with an intensity of 3 inches precipitation in 24 hours Precipitation data can be obtained from the National Weather Service by entering the site zip code at http://www.srh.noaa.gov/forecast.

Note that Tier 2 Dischargers must include a monitoring element in their water resource protection plan that at a minimum provides for periodic inspection of the site, checklist to confirm placement and efficacy of management measures, and document progress on any plan elements subject to a time schedule. Tier 3 Dischargers must incorporate monitoring and reporting elements into their cleanup and restoration plans for approval by the Executive Officer.

II. Annual Reporting

The information in the following form must be submitted upon initial enrollment, and annually thereafter by March 31. The reported information shall be reflective of site conditions.

Enrollees shall submit this information either directly to the Regional Water Board or through an approved third party program.

The preferred method of submittal is electronically via e-mail to NorthCoast@waterboards.ca.gov or on disk (CD or DVD) in Portable Document Format (PDF) file in lieu of paper-sourced documents. The guidelines for electronic submittal of documents can be found on the Regional Water Board website at http://www.waterboards.ca.gov/northcoast.

If electronic submission is infeasible, hard copies may be submitted to: North Coast Regional Water Quality Control Board, 5550 Skylane Blvd. Suite A, Santa Rosa, CA 95403.

The Regional Water Board is developing a method for submittal of reporting information directly to the CIWQS Program Web site at http://www.waterboards.ca.gov/ciwqs/index.html. Information about this alternative submittal process will be made available on the North Coast Regional Water Board website at: http://www.waterboards.ca.gov/northcoast/water_issues/programs/cannabis/. Once this method is established, direct submittal to CIWQS will be available for enrollees and approved third party programs, and will become the preferred reporting mechanism.

✂ ---------- ✂ ---------- ✂ ----------

REPORTING FORM BEGINS ON NEXT PAGE. PLEASE COMPLETE AND SUBMIT THE REPORTING FORM UPON ENROLLMENT AND ANNUALLY THEREAFTER

Order No. R1-2015-0023
REPORTING FORM

A. Site WDID: _____

B. Subwatershed (HUC-12)[2]: 180101020403

C. Enrollment date: _____

D. Reporting date: _____

E. Please check the box corresponding to the enrolled site's current tier (Tier 3 sites with cultivation must also check Tier 2).

☐ Tier 1 ☒ Tier 2 ☐ Tier 3

Has the site's tier status changed since the last reporting period? Y☐/N☐ NA
If YES, briefly explain: New Site

F. Check all fields that apply to the enrolled site:

i. Tier 1 sites: NA
(see Order at page 6 for details on Tier 1 characteristics)
- ☐ Average slope of each individual cultivation area is no more than 35% slope.
- ☐ Total cultivation area is no more than 5,000 square feet.
- ☐ No cultivation areas or associated facilities are located within 200 feet of a surface water. (Surface waters include wetlands and Class I, II, and III watercourses.)
- ☐ No surface water diversion from May 15 through October 31.
- ☐ The site is in compliance with all Standard Conditions under Order R1-2015-0023, section I.A.

ii. Tier 2 sites:

a. A Water Resource Protection Plan has been developed and is being implemented?
Y☐/N☒

If NO, expected date when plan will be ready and implementation will begin:
180 days after NOI is accepted.

If YES, have there been changes to the implementation schedule since the prior year of reporting? Y☐/N☐

[2] 12-digit HUC-12 subwatershed codes are available online at http://iaspub.epa.gov/apex/grts/f?p=110:95:::NO::APP_SHOW_HIDE:

REPORTING FORM
Page 2/5

ii. Tier 2 sites continued:

b. Check below as to whether or not the site meets Standard Conditions under Order R1-2015-0023, section I.A. If a standard condition is not yet met, please indicate the expected date of compliance as identified in the Water Resource Protection Plan. Upon initial enrollment, provide an estimated expected date of compliance.

Standard Condition Met	If NO, expected date of compliance
1. Site maintenance, erosion control, and drainage features Y☐/N☒	May 15 - Oct 15 2017
2. Stream crossing maintenance Y☐/N☒	May 15 - Oct 15 2017
3. Riparian and wetland protection and management Y☒/N☐	
4. Spoils management Y☒/N☐	
5. Water storage and use Y☒/N☐	
6. Irrigation runoff Y☒/N☐	
7. Fertilizers and soil amendments Y☒/N☐	
8. Pesticides and herbicides Y☒/N☐	
9. Petroleum products and other chemicals Y☒/N☐	
10. Cultivation-related wastes Y☒/N☐	
11. Refuse and human waste Y☒/N☐	

c. All management measures are being implemented as part of the Water Resource Protection Plan? Y☐/N☐ NA - Site is not developed yet.

If YES, do management measures appear to be effective in preventing and minimizing discharges of waste to surface water? Y☐/N☐ NA - Site is not developed yet.

If management measures do not appear to be effective, are additional measures being implemented iteratively to prevent and minimize discharges of waste to surface water? Y☐/N☐ NA

If NO, describe management measures or practices that have not been effective in preventing and minimizing discharges of waste to surface water, if applicable. Describe plans for new or additional management measures to prevent and minimize discharges of waste, if applicable. Attach additional sheets as necessary.

Standard Conditions to be upgraded: *
#1:- Apply aggregate to road surface.
- Upgrade inboard ditch in specific areas.
- Create turn-outs in specific areas.
- Construct water breaks in specific areas.
#2: - Place rock beneath culvert drainage outlet for specific road crossings.

* Addressed in STN's December 2016 "Road Evaluation Report"

REPORTING FORM
Page 3/5

d. Will work to bring site into compliance with Standard Conditions require disturbance to a stream or wetland over the coming year? Y☐/N☒

If YES, indicate status of work authorization by Regional Water Board. Specifically, check one or more of the following and provide the date if/as applicable.

☐ I plan to submit my project plans to the Regional Water Board by the following date:_____

☐ I submitted my project plans to the Regional Water Board on the following date:_____

☐ The Regional Water Board Executive Officer authorized my project plans on the following date:_____

☐ I have elected to receive authorization for instream work under a different Regional Water Board permitting mechanism as follows:

_____

☐ Instream work anticipated to occur between the following dates: _____

iii. Tier 2* sites: NA

Total cultivation area is less than 10,000 square feet? Y☐/N☐

Water resource protection plan developed and fully implemented? Y☐/N☐

All Standard Conditions met? Y☐/N☐

Site was inspected and verified as Tier 2* by Regional Water Board staff (NAME)_____ or approved third party program (NAME): _____ on (DATE) _____.

iv. Tier 3 Sites: NA

☐ A Cleanup and Restoration Plan has been submitted to the Regional Water Board for approval.

☐ The Cleanup and Restoration Plan has been approved by the Regional Water Board.

☐ The timeline for the approved Cleanup and Restoration plan is being followed.

Will restoration work require disturbance to a stream or wetland in the coming year? Y☐/N☐

Instream work anticipated to occur between the following dates:_____

☐ Cannabis cultivation is occurring or will occur on the site over the coming year. (If this box is checked, ensure that Tier 2 portions of the reporting form are completed as well).

REPORTING FORM
Page 4/5

v. For All Sites:

Annual Reporting Period (Calendar Year), or CHECK HERE ☒ if this is the report accompanying initial enrollment.

0	1	0	1	1	6	TO	1	2	3	1	1	6
Month/Day/Year							Month/Day/Year					

(See Order at page 6 for details regarding cultivation area and slope measurements, and watercourse definitions).

Total cultivation area (square feet)	82,368
Distance to surface waters (feet) from nearest edge of each cultivation area or associated facility. Provide distance measurement for each cultivated area separately, as appropriate.	Cultivation activities all >100' except existing trim building which is 90' from wetland.
Average slope (percent slope) of each cultivated area List each cultivated area separately, as appropriate.	Site A = 0-15%. Site B = 0-15%.
Total number of road crossings of surface waters Surface waters include wetlands and Class I, II, or III watercourses.	Class II - 4 Class III - 1
Annual soil amendment and chemical use (pounds or gallons). Total mass and/or volume of soil amendment and/or chemical usage by type, product name, and nutrient content such as N-P-K ratio, if applicable.*	See attached sheet.
Total water storage capacity (gallons or acre feet)	ponds 4,299,503 gal tanks 60,000 gal

Total surface water diversion by month (gallons or acre feet)*

Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø

Water input to storage by source and month (gallons or acre-feet) Report water volume input to storage, listing each source separately. This may include inputs from rainfall catchment, surface water diversions, groundwater pumping, or water delivery. If water is delivered, list delivery date, delivery volume, and name and address of water purveyor.*

Source	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Rainfall catchment	861,315	785,595	1,126,366	466,995	113,580	66,255	Ø	18,930	151,440	312,345	1,088,476	1,164,196

Water use by source and month (gallons or acre feet) Report water volume used, listing each source separately. This may include use of stored water, immediate use of pumped groundwater, diverted surface water, or delivered water. If water is delivered, list delivery date, delivery volume, and name and address of water purveyor*

Source	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
ponds/tanks	467,154	467,154	467,154	467,154	467,154	467,154	467,154	467,154	467,154	467,154	467,154	467,154

see Table #1

* Upon initial enrollment only, a best estimate is acceptable for reporting annual soil amendment and chemical use, monthly water stored, and monthly water use. Attach additional sheets if more space is needed for your responses.

REPORTING FORM
Page 5/5

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. The information contained in this document and all attachments is, to the best of my knowledge and belief, true, accurate, and complete.

Print name: Laura Borusas

Signature: Laura Borusas **Date:** 12/10/16

Preparer: Complete if MRP was prepared by someone other than the discharger, including an approved third-party

Organization Name (if applicable):
SHN

Prepared by:
First Name, Middle Initial
Stein E

Last Name
Coriell

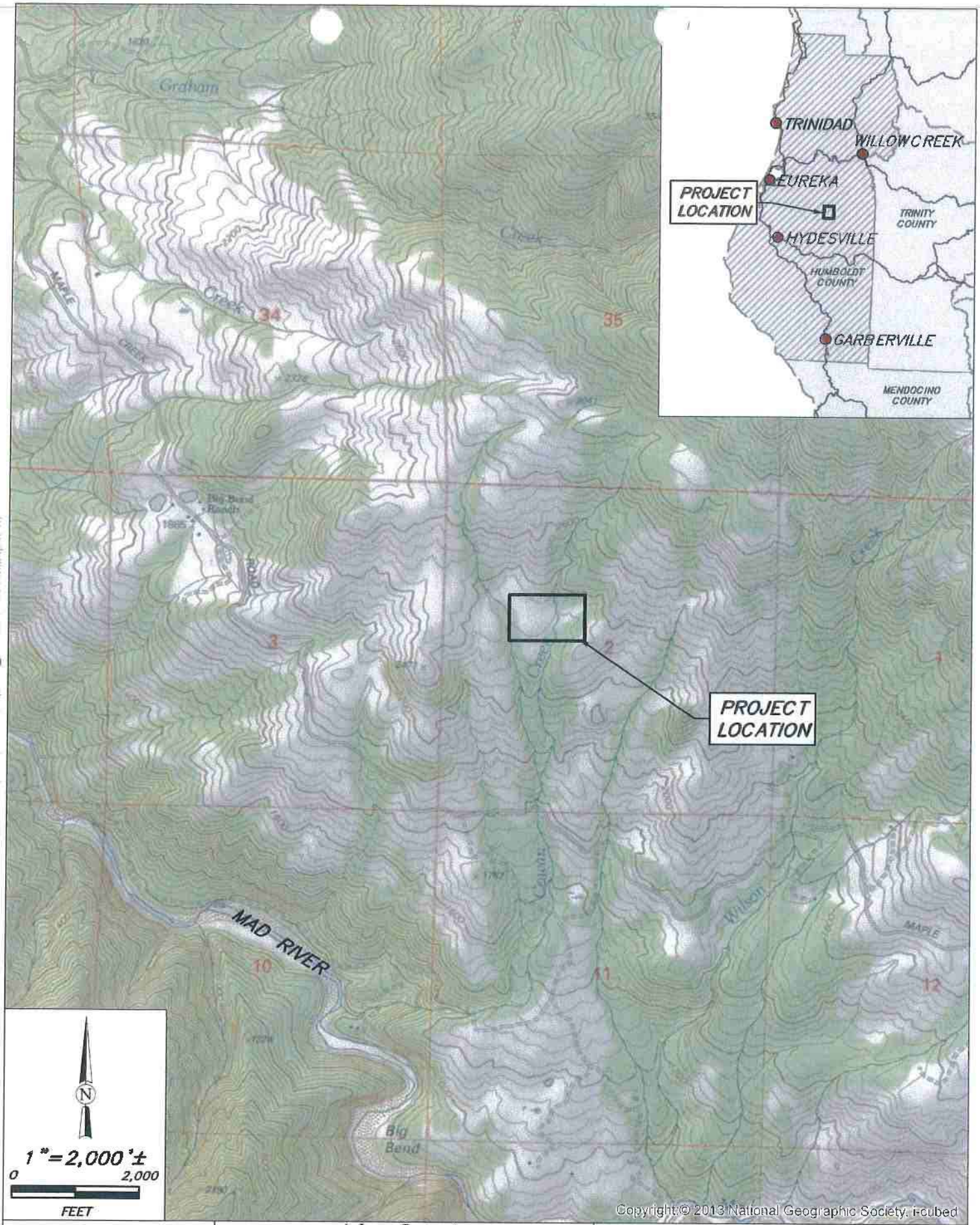
Preparer Address:
Street
812 W. Wabash Ave

City
Eureka

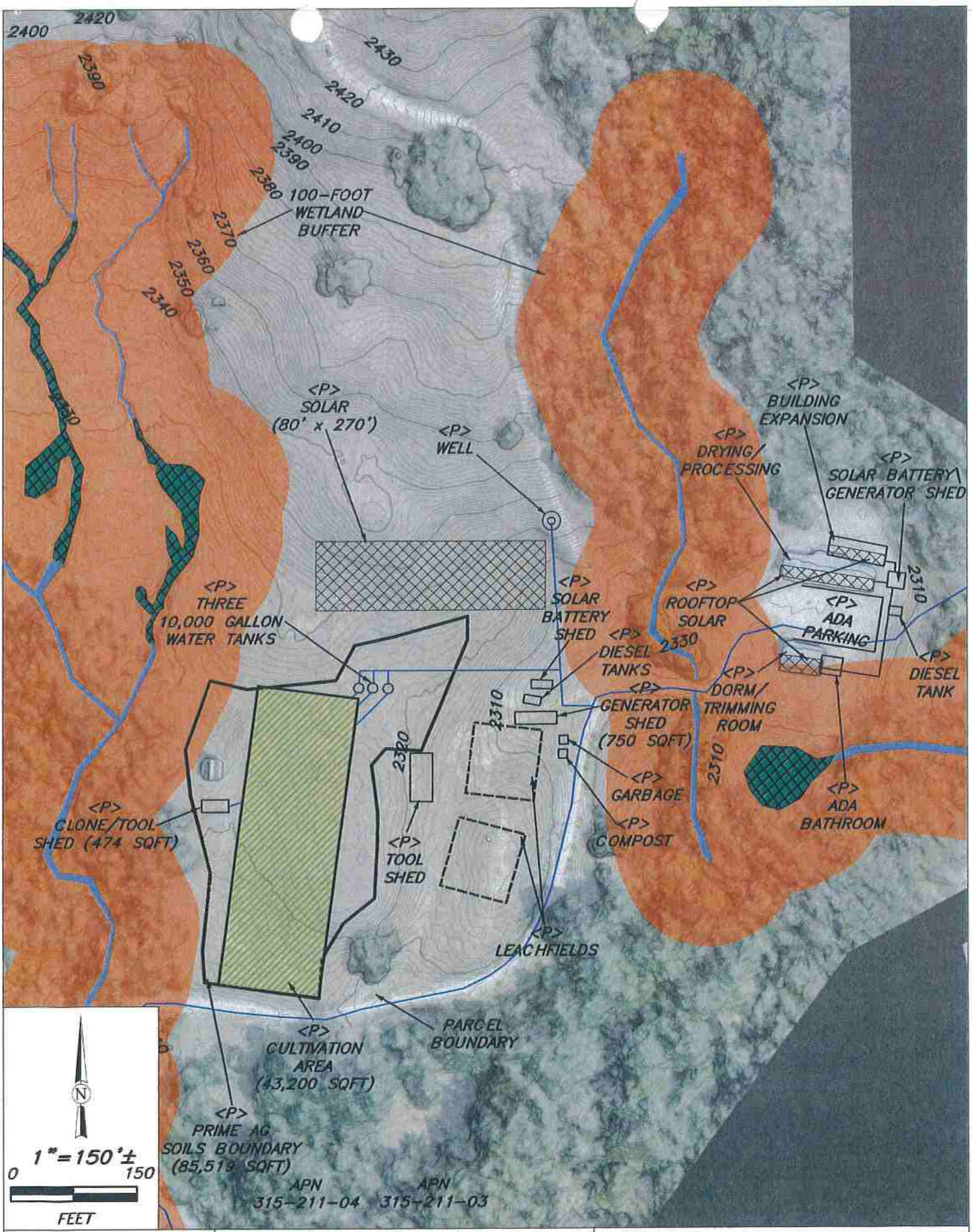
State CA ZIP 95501

Phone Number:
707 441 8855

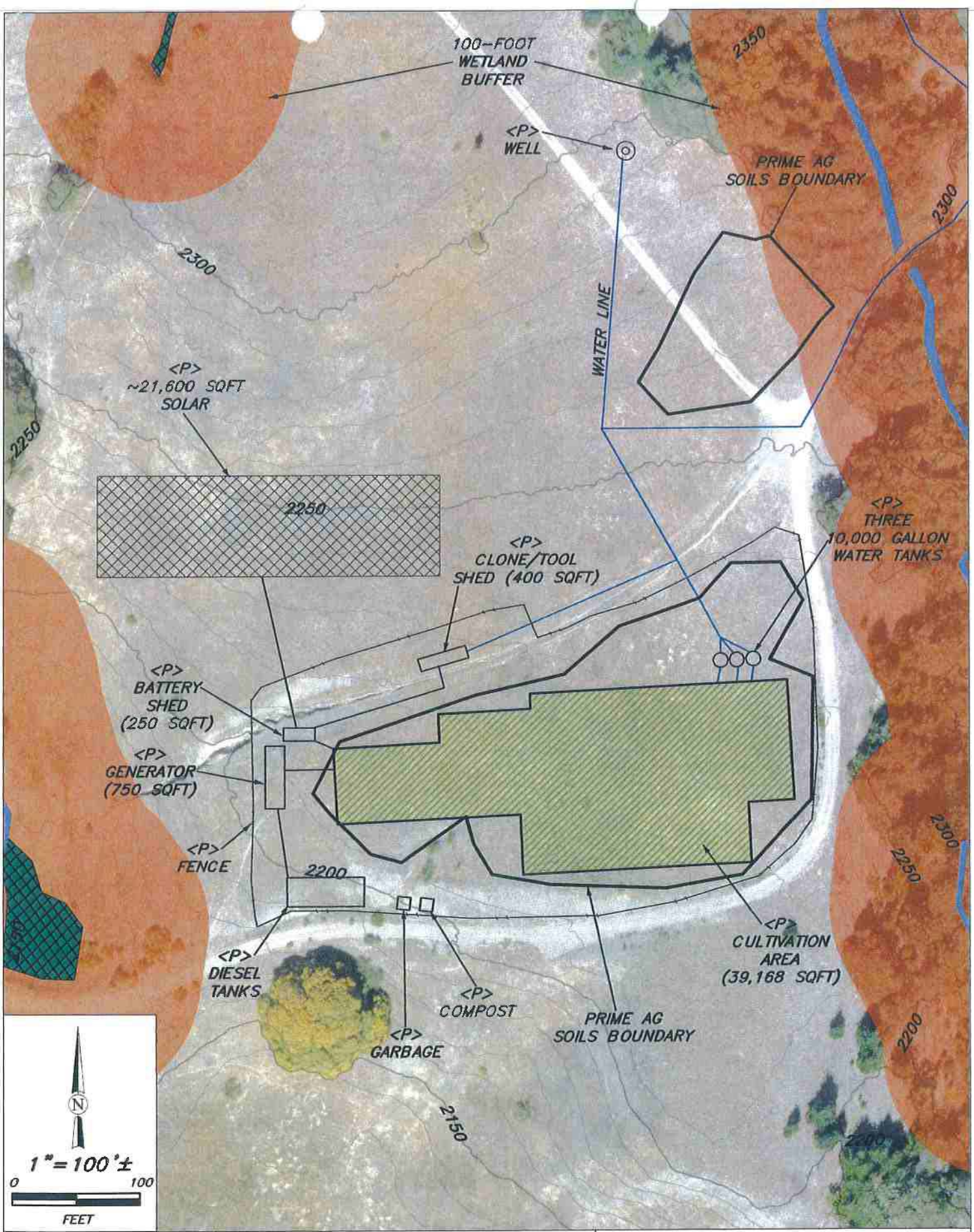
Email:
scoriell@shn-engr.com



SHN Consulting Engineers & Geologists, Inc.	Adesa Organic RWQCB NOI Maple Creek, Humboldt County, California	Project Location Map SHN 016178.100
	December 2016 | Figure1_ProjectLocationMap	Figure 1



Consulting Engineers & Geologists, Inc.	Adesa Organic RWQB NOI Maple Creek, Humboldt County, California		433 "A" Site Map Showing Proposed Developments SHN 016178
	December 2016	Figure3_433A_SiteMap_ProposedDevelopments	Figure 3



SHN Consulting Engineers & Geologists, Inc.	Adesa Organic RWQCB NOI Maple Creek, Humboldt County, California	433 "B" Site Map Showing Proposed Developments SHN 016178	
	December 2016	Figure4_433B_SiteMap_ProposedDevelopments	Figure 4

Table 1 Adesa Organic - 23500 Maple Creek Road, Korbel, CA (in gallons)			
Month	**Potential Rainfall From Gutters[1]**	**Anticipated Water Usage**	**Surplus Water Available in Storage Tanks and Ponds[2]**
Previous Dec.			1,164,196
January	861,315	467,154	1,558,357
February	785,595	467,154	1,876,799
March	1,126,336	467,154	2,535,980
April	406,995	467,154	2,475,822
May	113,580	467,154	2,122,248
June	66,255	467,154	1,721,349
July	0	467,154	1,254,195
August	18,930	467,154	805,971
September	151,440	467,154	490,257
October	312,345	467,154	335,448
November	1,088,476	467,154	956,770
December	1,164,196	467,154	1,653,811

1. Rainfall data from http://www.weatherbase.com Maple Creek, CA rainfall average and using a 151,845 square foot roof and ponds surface area.
2. Using six, 10,000-gallon tanks and two storage ponds (4,359,503 gallon maximum surplus holding)

Estimated Pesticide, Herbicide, and Fertilizer use - Adesa Organic 23500 Maple Creek Road:

Pesticide Use: Adesa intends to use an integrated pest management system (IPM) that focuses on biological pest controls as a first means of offense against insect predators. AzaMax use was based on a backup use amount for a maximum of 3 outbreaks a year.
Herbicide Use: Adesa intends to use biofungacides as preventatives. Bacillus Subtillus and Procidic 2 will be used regularly as preventatives. Regalia is used as a preventative against botrytis, powdery mildew and other fungal infections that are common in cannabis. Hydrogen peroxide will be used as a disinfectant.
Fertilizer Use: Walt's Organic Garden Blend and High P Bat Guano will be used for nutrient amendment. Estimated annual amounts of N is (41,000 lbs * 6% = 2460 lbs); P ([41,000 lbs * 2%= 820 lbs] + [35800 lbs * 13%= 4654 lbs] = 5474 lbs); K ([41,000 lbs * 5%= 2050 lbs] + [35,800 lbs * 1% = 358 lbs] = 2408 lbs). **N=2460 lbs, P= 4654 lbs, K= 2408 lbs annually**

Adesa Organic, LLC	Use Amount
Insectacide (AzaMax)	18 gallons a year
Fungacide (Regalia)	1240 gallons a year
Hydrogen Peroxide	20 gallons a year
Fertilizer (Walts Organic Garden Blend)	41,000 pounds
"6-2-5"	
Fertilizer (High P Bat Guano)	35,800 pounds
"0-13-1"	
Fungacide Foliar (Bacillus Subtillus)	15 gallons a year
Bactericide/Fungacide (Procidic 2)	30 gallons a year

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Northern Region
619 Second Street
Eureka, California 95501
(707) 445-6493
www.wildlife.ca.gov

EDMUND G. BROWN, Jr., Governor
CHARLTON H. BONHAM, Director

RECEIVED
AUG 23 2019
Humboldt County
Cannabis Svcs

September 14, 2018

Kevin Spreng, Manager
AMT, LLC
585 Mount Curve Blvd.
St. Paul, Minnesota 55116
(612) 419-5197
info@amtllca.com

Subject: Draft Lake or Streambed Alteration Agreement
Notification No. 1600-2018-0047-R1
AMT, LLC Water Diversion, Impoundment and Stream Crossings Project

Dear Kevin Spreng:

The California Department of Fish and Wildlife (Department) has determined that your project requires a Lake or Streambed Alteration Agreement (Agreement) because it could substantially adversely affect an existing fish or wildlife resource. Enclosed is a draft Agreement that includes measures the Department has determined are necessary to protect existing fish and wildlife resources.

Within 30 days of receipt of this draft Agreement, you must notify the Department in writing whether the measures to protect fish and wildlife resources are acceptable (Fish and Game Code section 1603). If you agree with the measures set forth in the draft Agreement, you or your authorized representative **must return the draft Agreement with original signature to the address above for the Department.**

If you disagree with any measures in the draft Agreement, please contact the Department staff identified below. In the event that mutual agreement is not reached, you may follow the dispute resolution process described in Fish and Game Code section 1603(a), Part III of the "Notification Instructions and Process." If you fail to respond in writing within 90 days of receiving the draft Agreement, the Department may withdraw the draft Agreement.

Please be advised the Department may not execute the Agreement until it has complied with the California Environmental Quality Act (CEQA) (Public Resources Code section 21000 *et seq.*) as the lead or a responsible agency. Please note that the draft Agreement may be subject to change upon receipt and review of the environmental document for the project.

After you receive a final Agreement executed by the Department, you may begin the project the Agreement authorizes provided you have obtained all other necessary local, state, and federal permits or other authorizations.

For more information on the process described above, please refer to Part IV in the "Notification Instructions and Process" included with your notification materials, which is also available at: https://www.wildlife.ca.gov/Conservation/LSA/Notify-CDFW.

If you have any questions regarding this letter, please contact Environmental Scientist Andrew Orahoske at andrew.orahoske@wildlife.ca.gov.

Sincerely,

Cheri Sanville
Senior Environmental Scientist Supervisor

Ec: Stein Coriell, SHN, scoriell@shn-engr.com

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
REGION 1 – NORTHERN REGION
619 Second Street
Eureka, CA 95501

LAKE OR STREAMBED ALTERATION AGREEMENT

NOTIFICATION NO. 1600-2018-0047-R1
Tributaries to Cowan Creek and Wilson Creek, Cowan Creek, and Unnamed Tributaries to Mad River and the Pacific Ocean

AMT, LLC (Kevin Spreng, Manager)
AMT, LLC Water Diversion, Impoundment and Stream Crossings Project
31 Encroachments

This Lake or Streambed Alteration Agreement (Agreement) is entered into between the California Department of Fish and Wildlife (CDFW) and AMT, LLC (Kevin Spreng, Manager) (Permittee).

RECITALS

WHEREAS, pursuant to Fish and Game Code (FGC) section 1602, the Permittee initially notified CDFW on January 11, 2018, revised on July 12, 2018, that the Permittee intends to complete the projects described herein.

WHEREAS, pursuant to FGC section 1603, CDFW has determined that the project could substantially adversely affect existing fish or wildlife resources and has included measures in the Agreement necessary to protect those resources.

WHEREAS, the Permittee has reviewed the Agreement and accepts its terms and conditions, including the measures to protect fish and wildlife resources.

NOW THEREFORE, the Permittee agrees to complete the project in accordance with the Agreement.

PROJECT LOCATION

The project to be completed is located on Cowan Creek, Wilson Creek and unnamed tributaries within the Mad River watershed, approximately 16 miles south southeast of the City of Blue Lake, County of Humboldt, State of California. The project is located in Section 2, Township 3N, Range 3E and Section 34, Township 4N, Range 3E Humboldt Base and Meridian; in the Mad River Buttes U.S. Geological Survey 7.5-minute quadrangle; Humboldt County Assessor's Parcel Numbers: 315-146-018, 315-145-002, 315-222-003, 315-211-004, 315-211-003, 315-222-008. Latitude and Longitude for the individual projects are listed in Table 1 below.

PROJECT DESCRIPTION

The project is limited to 31 encroachments (see Table 1). Four (4) encroachments are for water diversion (3 PODs, 1 shallow well) from unnamed tributaries to Cowan Creek and the Mad River. Water is diverted for domestic use, irrigation and electrical power generation (micro hydro). Work for the water diversion will include use and maintenance of the water diversion infrastructure. In addition there is an existing and a proposed well. Nineteen (19) encroachments are to upgrade failing and undersized culverts. One (1) encroachment is to install a new stream crossing. Work for these stream crossing encroachments will include excavation, removal of the failing culverts, replacement with new properly sized culverts, backfilling and compaction of fill, and rock armoring as necessary to minimize erosion. Five (5) encroachments are to remove or maintain existing instream reservoirs that impound surface water flows. Work for these encroachments includes stream channel restoration, installing appropriately sized culverts for reservoir outlets and rocked emergency spillways.

Table 1. Project Encroachments with Description (Under Project ID, parentheses track project numbering from the revised notification)

Project ID	Latitude/Longitude	Description
Crossing-1 (WC-1)	40.6711, -123.8092	Replace failing, undersized 48" diameter culvert with minimum 60" diameter culvert. This project may require consultation with the Department, or an incidental take permit for Foothill Yellow-legged Frog. This project will likely require temporary water diversion on Cowan Creek due to presence of water flowing through the work zone. The crossing is also proposed to contain a sewage line that spans the stream channel. The sewage line shall be installed with a secondary containment pipe and monitoring system that automatically shuts down sewage flow in the event of a leak to prevent sewage entering Cowan Creek. Permittee shall provide a project design to the Department for approval 60 days prior to initiating instream work.
Crossing-2 (WC-4)	40.6691, -123.8115	Replace failing, undersized 42" diameter culvert with minimum 54" diameter culvert. This project may require consultation with the Department, or an incidental take permit for Foothill Yellow-legged Frog. This project may require temporary water diversion on Cowan Creek due to the potential presence of water flowing through the work zone.
Crossing-3 (WC-5)	40.6675, -123.8141	Replace failing, undersized 18" diameter culvert with minimum 24" diameter culvert.
Crossing-4 (WC-7)	40.6688, -123.8196	Maintain existing 18" diameter culvert; install rock armoring at inlet and outlet.
Crossing-5 (WC-8)	40.6697, -123.8212	Replace failing, undersized 18" diameter culvert with minimum 24" diameter culvert.
Crossing-6 (WC-9)	40.6700, -123.8228	Replace failing 48" diameter culvert with minimum 48" diameter culvert. Treat road approach upslope to direct inboard ditch water away from the stream and hydrologically disconnect the road

		system from the stream.
Crossing-7 (WC-A)	40.6737, -123.8092	Replace failing, undersized 24" diameter culvert with minimum 36" diameter culvert.
Crossing-8 (WC-B)	40.6739, -123.8092	Remove failing, undersized 18" diameter culvert, and restore stream channel to natural grade and setting. Decommission road approaches to this crossing.
Crossing-9 (WC-C)	40.6756, -123.8079	Remove failing, undersized 42" diameter culvert, and restore stream channel to natural grade and setting. Decommission road approaches to this crossing on both sides to prevent sediment and runoff from entering stream. This project may require consultation with the Department, or an incidental take permit for Foothill Yellow-legged Frog. This project may require temporary water diversion on Cowan Creek due to the potential presence of water flowing through the work zone.
Crossing-10 (WC-C2)	40.6763, -123.8070	Remove failing culvert and restore stream channel to natural grade and setting. Decommission road approaches to this crossing on both sides to prevent sediment and runoff from entering stream.
Crossing-11 (WC-D)	40.6765, -123.8065	Remove failing, undersized 30" diameter culvert with minimum 48" diameter culvert. This project may require consultation with the Department, or an incidental take permit for Foothill Yellow-legged Frog. This project may require temporary water diversion on Cowan Creek due to the potential presence of water flowing through the work zone.
Crossing-12 (WC-E)	40.6761, -123.8052	Replace failing, undersized 18" diameter culvert with minimum 24" diameter culvert. Treat road approach to hydrologically disconnect inboard ditch from the stream.
Crossing-13 (WC-F)	40.6768, -123.7994	Replace failing, undersized 18" diameter culvert with minimum 24" diameter culvert.
Crossing-14 (WC-F2)	40.6766, -123.8008	Replace failing, undersized 24" diameter culvert with minimum 36" diameter culvert. Treat road approach to hydrologically disconnect inboard ditch from the stream.
Crossing-15 (WC-G)	40.6774, -123.8193	Maintain existing 18" diameter culvert; install rock armoring at inlet and outlet.
Crossing-16 (WC-G2)	40.6773, -123.8191	Maintain existing 18" diameter culvert; install rock armoring at inlet and outlet.
Crossing-17 (WC-G3)	40.6778, -123.8194	Replace failing, undersized 24" diameter culvert with minimum 36" diameter culvert. Relocate the microhydro power unit water intake polyline out of the stream channel. Hydrologically disconnect the upland French drain so that runoff does not enter the stream.
Crossing-18 (WC-H)	40.6772, -123.8200	Maintain existing 18" diameter culvert; install rock armoring at inlet and outlet.

Crossing-19 (WC-L)	40.6765, -123.8178	Replace failing, undersized 6" diameter culvert with minimum 18" diameter culvert.
Crossing-20 (WC-M)	40.6710, -123.8086	Install a new stream crossing, minimum 24" diameter culvert for proposed new road. Permanent utility lines will be a part of this new crossing. Permittee shall provide a design plan for this crossing and utility line installation to the Department for approval 60 days prior to initiating instream work.
Reservoir-1 (PO-1)	40.6709, -123.8089	Remove existing, unpermitted instream reservoir that is contributing sediment and warm water to Cowan Creek and providing habitat for invasive aquatic species, including American Bullfrogs, to the detriment of native amphibians, including CESA candidate Foothill Yellow-legged Frog. Permittee shall provide a Restoration Plan within 90 days of signing the Final Agreement for reservoir removal and stream channel restoration to the Department for approval. Permittee shall provide an Interim Erosion Control Plan within 30 days of signing the Final Agreement to the Department for approval in order to address imminent and ongoing sediment delivery to Cowan Creek from an unpermitted, poorly constructed drainage ditch that acts as the reservoir outlet to the stream. This project may require consultation with the Department, or an incidental take permit for Foothill Yellow-legged Frog. This project will likely require temporary water diversion away from Cowan Creek due to presence of water flowing through the work zone, and the existing instream reservoir.
Reservoir-2 (PO-2)	40.6702, -123.8136	Maintain existing, unpermitted instream reservoir. Install emergency rocked spillway. Maintain existing 24" diameter culvert as overflow outlet; install rock armoring for energy dissipation at outlet. Permittee shall submit a Bullfrog Management Plan to the Department for approval within 90 days of signing the Final Agreement.
Reservoir-3 (PO-3)	40.6738, -123.8162	Maintain existing, unpermitted instream reservoir. Install emergency rocked spillway. Maintain existing 24" diameter culvert as overflow outlet; install rock armoring for energy dissipation at outlet. Permittee shall submit a Bullfrog Management Plan to the Department for approval within 90 days of signing the Final Agreement.
Reservoir-4 (PO-4)	40.6780, -123.8191	Maintain existing, unpermitted instream reservoir. Install emergency rocked spillway. Replace failing, undersized 24" diameter culvert with minimum 30" diameter culvert. Maintain and enhance riparian vegetation at reservoir outlet and stream channel. Permittee shall submit a Bullfrog Management Plan to the Department for approval within 90 days of signing the Final Agreement.
Reservoir-5 (PO-5)	40.6797, -123.8112	Remove failing, unpermitted instream reservoir. Restore stream channel to natural grade and setting. Decommission road approaches at stream crossing. Permittee shall submit a

		Restoration Plan for reservoir removal and stream channel restoration to the Department for approval 60 days prior to initiating instream work.
Point of Diversion-1 (POD-1)	40.6793, -123.8160	Maintain spring box for domestic water use; rate of withdrawal is 3 gallons per minute. Permittee shall implement a forbearance period of August 15 - December 15, when no water diversion shall take place. During the diversion season, Permittee shall bypass 90% of flow. Permittee shall provide water diversion reporting annually.
Point of Diversion-2 (SP-1)	40.6764, -123.8068	Remove unpermitted spring box and restore the spring and stream channel to natural grade and setting.
Water Well-1 (WELL-1)	40.6790, -123.8170	Maintain existing, jurisdictional, shallow, hydrologically-connected water well. Rate of withdrawal is 7 gallons per minute. Permittee shall provide water diversion reporting annually.
Water Well-2 (WELL-2)	40.6710, -123.8110	Maintain and use existing groundwater well as proposed. Permittee agrees to provide water diversion reporting annually.
Water Well-3 (WELL-3) Proposed	40.6700, -123.8130	Proposed water well. Permittee shall provide the Department with the well completion report for review within 30 days of well completion.
Microhydro Power Water Diversion (MH-1)	40.6780, -123.8190	Maintain existing microhydro power water diversion. Permittee shall provide 90% bypass of water flow at the inlet. Permittee shall remove the water intake polyline from the stream channel. Permittee shall ensure that water return at outlet is rock armored and not causing erosion or sediment delivery to stream channel. Permittee shall ensure water at the outlet is not significantly warmer than the water in the stream channel at the outlet, and does not cause significant adverse effects by increasing the water temperature of the stream.

PROJECT IMPACTS

Existing fish or wildlife resources the project could substantially adversely affect include Chinook Salmon (*Oncorhynchus tshawytscha*), Coho Salmon (*O. kisutch*), Steelhead Trout (*O. mykiss*), Western Brook Lamprey (*Lampetra richardsoni*), Pacific Lamprey (*Entosphenus tridentata*), Southern Torrent Salamander (*Rhyacotriton variegatus*), Pacific Giant Salamander *(Dicamptodon tenebrosus)*, Foothill Yellow-legged Frog *(Rana boylii),* Coastal Tailed Frog (*Ascaphus truei*), Western Pond Turtle (*Actinemys marmorata marmorata*), Golden Eagle (*Aquila chrysaetos*), Red-tailed Hawk (*Buteo jamaicensis*), Grasshopper Sparrow, amphibians, reptiles, aquatic invertebrates, mammals, birds, and other aquatic and riparian species.

The adverse effects the project could have on the fish or wildlife resources identified above include:

Impacts to water quality:
increased water temperature;
reduced instream flow;
temporary increase in fine sediment transport;

Impacts to bed, channel, or bank and direct effects on fish, wildlife, and their habitat:
loss or decline of riparian habitat;
direct impacts on benthic organisms;

Impacts to natural flow and effects on habitat structure and process:
cumulative effect when other diversions on the same stream are considered;
diversion of flow from activity site;
direct and/or incidental take;
indirect impacts;
impediment of up- or down-stream migration;
water quality degradation; and
damage to aquatic habitat and function.

MEASURES TO PROTECT FISH AND WILDLIFE RESOURCES

1. Administrative Measures

The Permittee shall meet each administrative requirement described below.

1.1 Documentation at Project Site. The Permittee shall make the Agreement, any extensions and amendments to the Agreement, and all related notification materials and California Environmental Quality Act (CEQA) documents, readily available at the project site at all times and shall be presented to CDFW personnel, or personnel from another state, federal, or local agency upon request.

1.2 Providing Agreement to Persons at Project Site. The Permittee shall provide copies of the Agreement and any extensions and amendments to the Agreement to all persons who will be working on the project at the project site on behalf of the Permittee, including but not limited to contractors, subcontractors, inspectors, and monitors.

1.3 Notification of Conflicting Provisions. The Permittee shall notify CDFW if the Permittee determines or learns that a provision in the Agreement might conflict with a provision imposed on the project by another local, state, or federal agency. In that event, CDFW shall contact the Permittee to resolve any conflict.

1.4 Project Site Entry. Permittee agrees that CDFW personnel may enter the project site at any time to verify compliance with the Agreement.

1.5 Adherence to Existing Authorizations. All water diversion facilities that the Permittee owns, operates, or controls shall be operated and maintained in accordance with current law and applicable water rights.

1.6 Change of Conditions and Need to Cease Operations. If conditions arise, or change, in such a manner as to be considered deleterious by CDFW to the stream or wildlife, operations shall cease until corrective measures approved by CDFW are taken. This includes new information becoming available that indicates bypass flows, diversion rates or other measures provided in this agreement are not providing adequate protection to keep aquatic life downstream in good condition or to avoid "take" or "incidental take" of federal or State listed species.

1.7 CDFW Notification of Work Initiation and Completion. The Permittee shall contact CDFW within the 7-day period preceding the beginning of work permitted by this Agreement, unless an alternative notification period is prescribed in the project descriptions contained in Table 1. Information to be disclosed shall include Agreement number, and the anticipated start date. Subsequently, the Permittee shall notify CDFW no later than seven (7) days after the project is fully completed. **Notification of completion will include photographs of the completed work, erosion control measures, waste containment and disposal, and a summary of any CNDDB submissions as required below.**

1.8 Notification to the California Natural Diversity Database. If any special status species are observed at any time during the project, the Permittee or Designated Biologist shall submit California Natural Diversity Data Base (CNDDB) forms to the CNDDB within five (5) working days of the sightings. A summary of CNDDB submissions shall be included with the completion notification. Forms and instructions for submissions to the CNDDB may be found at: https://www.wildlife.ca.gov/Data/CNDDB/Submitting-Data.

2. Avoidance and Minimization Measures

To avoid or minimize adverse impacts to fish and wildlife resources identified above, the Permittee shall implement each measure listed below.

2.1 Permitted Project Activities. Except where otherwise stipulated in this Agreement, all work shall be in accordance with Permittee Notification, together with all maps, Best Management Practices (BMPs), photographs, drawings, and other supporting documents submitted with the Notification and received on January 11, 2018, revised on July 12, 2018.

2.2 Listed Species. This Agreement does not allow for the take, or incidental take of any state or federal listed threatened, endangered, or candidate species. No direct or indirect impacts shall occur to any threatened or endangered species as a result of implementing the project or the project's activities. If the project could result in the "take" of a state listed threatened or endangered species, the Permittee has

the responsibility to obtain from CDFW, a California Endangered Species Act Permit (CESA section 2081).

2.3 Foothill Yellow-Legged Frog (FYLF) Avoidance. To avoid take of FYLF during its CESA candidacy period, the Permittee shall:

A. Conduct a Pre-Construction Survey. Within 3-5 days prior to entering or working at the Project Site, a qualified biologist shall examine the project site to determine the presence/absence of standing or flowing water, and the presence and/or the potential for presence of FYLF adults, juveniles, tadpoles or egg masses within the project area and 150 feet upstream and downstream. Prior to commencing work, Permittee shall provide to CDFW for review preconstruction survey notes and observations.

1. If FYLF are found during the pre-construction survey, Permittee shall:

    a) Consult CDFW immediately by either telephone or e-mail and provide a short description of observations, including a count of individuals and the life stage(s), conditions at the site, and other aquatic species observed; and

    b) Either propose site-specific mitigation measures that will be utilized to avoid take, or obtain an ITP if take of FYLF cannot be avoided. Instream work shall not commence until CDFW has provided written approval of the proposed avoidance measures or an ITP has been issued.

2. If no FYLFs are found during the pre-construction survey and no surface water is present in the project area, work may commence without further surveys.

3. If no FYLFs are found but surface water is present during the pre-construction survey, *or if surface water becomes present at any time during the work period*, a qualified biologist shall survey the work site each day before commencement of work activities where equipment and/or materials may come in contact with FYLFs, streams, or riparian habitat.

4. If FYLFs are observed at any time during the construction season, work in the immediate area shall be halted, CDFW immediately consulted, and conservation measures developed and agreed to by CDFW prior to recommencing work.

B. Qualified Biologist. A qualified biologist is an individual who is experienced in construction level biological monitoring, knowledgeable in the biology, natural history, habits and behaviors of the FYLF, and who is able to recognize all age classes of FYLF relative to other amphibians in the project area. A qualified

biologist shall have academic and professional experience in biological sciences or resource management activities. At least 15 days prior to commencement of Project-related surveys for FYLFs, Permittee shall provide to CDFW for review and approval the names and qualifications of individuals requesting qualified biologist status.

C. Decontamination. The Permittee is responsible for ensuring all project personnel adhere to the latest version of the Northern Region California Department of Fish and Wildlife Aquatic Invasive Species Decontamination Protocol for all field gear and equipment that will be in contact with water or FYLFs. Heavy equipment and other motorized or mechanized equipment that comes in contact with water should generally follow watercraft decontamination protocols found in the AIS Decontamination Protocol.

D. Night Lighting and Water Drafting. Night lighting and drafting of water is not authorized by this Agreement.

2.4 Nesting Birds. Actively nesting birds and their nests shall not be disturbed by project activities. If construction, grading, vegetation removal, or other project-related improvements are necessary during the nesting season of protected raptors and migratory birds (**March 1 through August 15 & January 1 through August 31 for Golden Eagle**), the Permittee shall notify CDFW of proposed work and a focused survey for bird nests and/or nesting behavior shall be conducted by a qualified biologist within seven days prior to the beginning of project-related activities. Surveys should encompass the area up to 50 feet from disturbance to account for songbirds, and up to 250 feet from disturbance for raptors. If a nest is found or suspected to be present, Permittee shall consult with CDFW regarding appropriate action to comply with the Migratory Bird Treaty Act of 1918 and Fish and Game Code. If a lapse in project-related work of seven days or longer occurs, another focused survey, and if required, consultation with CDFW shall be required before project work can be reinitiated.

Project Timing

2.5 Work Period. All work, not including diversion of water, shall be confined to the period **June 15 through October 1** of each year. Work within the active channel of a stream shall be restricted to periods of **dry weather**. Precipitation forecasts and potential increases in stream flow shall be considered when planning construction activities. Construction activities shall cease and all necessary erosion control measures shall be implemented prior to the onset of precipitation.

2.6 Work Completion. The proposed work for all projects shall be completed by no later than **October 1, 2021**. For Project ID "Reservoir-1 (PO-1)" the project shall be completed by no later than **October 1, 2019**. A notice of completed work, including photographs of each site, shall be submitted to CDFW within seven (7) days of project completion.

2.7 Extension of the Work Period. If weather conditions permit, and the Permittee wishes to extend the work period after October 1, a written request shall be made to CDFW **at least 5-working days before the proposed work period variance**. Written approval (letter or e-mail) for the proposed time extension must be received from CDFW prior to activities continuing past October 1.

Vegetation Management

2.8 Minimum Vegetation Removal. No native riparian vegetation shall be removed from the bank of the stream, except where authorized by CDFW. Permittee shall limit the disturbance or removal of native vegetation to the minimum necessary to achieve design guidelines and standards for the Authorized Activity. Permittee shall take precautions to avoid damage to vegetation outside the work area.

2.9 Vegetation Maintenance. Permittee shall limit vegetation management (e.g., trimming, pruning, or limbing) and removal for the purpose of stream crossing or diversion infrastructure placement/maintenance to the use of hand tools. Vegetation management shall not include treatment with herbicides.

2.10 Avoidance of Nesting Birds. Vegetation maintenance/removal as necessary within the scope of the project shall be confined to the period commencing August 16 and ending February 28, of any year in which this Agreement is valid, provided the work area is outside of the actively flowing stream. Work may continue during precipitation events provided stream flows have not risen into work areas and sediment delivery will not result.

General Stream Protection Measures

2.11 Fish and Aquatic Amphibians. If possible, work shall be conducted when the affected stream channel is void of surface water. If surface water is present during construction, the Permittee shall: a) have a biologist or other qualified professional survey the site and adjacent area for fish, amphibians, and turtles three days or less before commencing project activities and b) if fish, amphibians, or turtles are detected, CDFW Environmental Scientist Andrew Orahoske shall be contacted by phone or email at (707) 441-5827 or andrew.orahoske@wildlife.ca.gov and work shall not commence until authorized by the Department.

2.12 Stream Protection. No debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete washings, oil or petroleum products, or other material deleterious to fish, plant life, mammals or bird life shall be allowed to enter into or be placed where it may be washed by rainfall or runoff into the stream.

2.13 No Dumping. Permittee shall not deposit, permit to pass into, or place where it can pass into a stream, lake, or other Waters of the State any material deleterious to fish and wildlife, or abandon, dispose of, or throw away within 150 feet of a stream, lake, or other Waters of the State any cans, bottles, garbage, motor vehicle or

parts thereof, rubbish, litter, refuse, waste, debris, or the viscera or carcass of any dead mammal, or the carcass of any dead bird.

2.14 Maintain Aquatic Life. When any dam or other artificial obstruction is being constructed, maintained, or placed in operation, Permittee shall allow sufficient water at all times to pass downstream to maintain aquatic life below the dam pursuant to Fish and Game Code §5937.

2.15 Equipment Maintenance. Refueling of machinery or heavy equipment, or adding or draining oil, lubricants, coolants or hydraulic fluids shall not take place within stream bed, channel and bank. All such fluids and containers shall be disposed of properly off-site. Heavy equipment used or stored within stream bed, channel and bank shall use drip pans or other devices (e.g., absorbent blankets, sheet barriers or other materials) as needed to prevent soil and water contamination.

2.16 Hazardous Spills. Any material, which could be hazardous or toxic to aquatic life and enters a stream (i.e. a piece of equipment tipping-over in a stream and dumping oil, fuel or hydraulic fluid), the Permittee shall immediately notify the California Emergency Management Agency State Warning Center at 1-800-852-7550, and immediately initiate clean-up activities. CDFW shall be notified by the Permittee within 24 hours at 707-445-6493 and consulted regarding clean-up procedures.

2.17 Clean-up. Structures and associated materials not designed to withstand high seasonal flows shall be removed to areas above the ordinary high water mark before such flows occur or the end of the yearly work period, whichever comes first. All project materials and debris shall be removed from the project site and properly disposed of off-site upon project completion.

2.18 Erosion Control Measures

2.18.1 Seed and Mulch. Upon completion of construction operations and/or the onset of wet weather, Permittee shall stabilize exposed soil areas within the work area by applying mulch and seed. Permittee shall restore all exposed or disturbed areas and access points within the stream and riparian zone by applying local native and weed free erosion control grass seeds. Locally native wildflower and/or shrub seeds may also be included in the seed mix. Permittee shall mulch restored areas using at least two to four inches of weed-free clean straw or similar biodegradable mulch over the seeded area. Alternately, Permittee may cover seeding with jute netting, coconut fiber blanket, or similar non-synthetic monofilament netting erosion control blanket.

2.18.2 Erosion and Sediment Barriers. Permittee shall monitor and maintain all erosion and sediment barriers in good operating condition throughout the work period and the following rainy season, defined herein to mean

October 15 through June 15. Maintenance includes, but is not limited to, removal of accumulated sediment, replacement of damaged sediment fencing, coir rolls/logs and/or straw bale dikes and ensuring drainage structures and altered streambeds and banks remain sufficiently armored and/or stable. If the sediment barrier fails to retain sediment, Permittee shall employ corrective measures, and notify the department immediately.

2.18.3 Cover Spoil Piles. Permittee shall have readily available erosion control materials such as wattles, natural fiber mats, or plastic sheeting, to cover and contain exposed spoil piles and exposed areas in order to prevent sediment from moving into a stream or lake. Permittee shall apply and secure these materials prior to rain events to prevent loose soils from entering a stream, lake, or other Waters of the State.

2.18.4 Prohibition on Use of Monofilament Netting. To minimize the risk of ensnaring and strangling wildlife, Permittee shall not use any erosion control materials that contain synthetic (e.g., plastic or nylon) monofilament netting, including photo- or biodegradable plastic netting. Geotextiles, fiber rolls, and other erosion control measures shall be made of loose-weave mesh, such as jute, hemp, coconut (coir) fiber, or other products without welded weaves.

2.19 Waste Containment and Disposal. Permittee shall contain all operation associated refuse in enclosed, wildlife proof, storage containers, at all times, and relocate refuse to an authorized waste management facility, in compliance with State and local laws, on a regular and ongoing basis. All refuse shall be removed from the site and properly disposed of, at the close of the cultivation season and/or when the parcel is no longer in use. Photo documentation of newly installed storage containers shall be included in the Work Completion Report.

Water Diversion

2.20 Maximum Diversion Rate. The maximum instantaneous diversion rate from the water intake shall not exceed **three (3) gallons per minute** (gpm) at any time (except 7 gpm for well-1).

2.21 Bypass Flow. The Permittee shall pass **90% of the flow** at all times to keep all aquatic species including fish and other aquatic life in good condition below the point of diversion.

2.22 Seasonal Diversion Minimization. No more than **150 gallons per day** may be diverted during the low flow season from **May 15 to October 31 (HUM)** of each year. Water shall be diverted only if the Permittee can adhere to the maximum diversion rate and bypass flow conditions of this Agreement.

2.23 Measurement of Diverted Flow. Permittee shall install and maintain an adequate measuring device for measuring the instantaneous and cumulative rate of diversion. This measurement shall begin as soon as this Agreement is signed by the Permittee. The device shall be installed within the flow of diverted water. The Permittee shall maintain records of diversion, and provide information including, but not limited to the following:

2.23.1 A log including the date, time and quantity of water diverted from the POD.

2.23.2 The amount of water used per day for cannabis cultivation separated out from the amount of water used for other irrigation purposes and other uses of water (e.g., domestic use or fire protection).

2.23.3 Permittee shall make available for review at the request of the Department the diversion records required by the State Water Resources Control Board (Board) in Attachment A to the Board's Cannabis Cultivation Policy (October 17, 2017), No. 84, pages 40-41 (see Cal. Code Regs., tit. 23, § 2925).

2.24 Water Management Plan. The Permittee shall submit a Water Management Plan no later than **sixty (60) days** from the time this Agreement is made final that describes how compliance will be achieved under this Agreement. The Water Management Plan shall include details on water storage, water conservation, or other relevant material to maintain water needs in coordination with forbearance and bypass flow requirements. The Water Management Plan shall include a brief narrative describing water use on the property, photographs to support the narrative, and water use calculations to ensure compliance with this Agreement.

Water Diversion Infrastructure

2.25 Intake Structure. No polluting materials (e.g., particle board, plastic sheeting, bentonite) shall be used to construct or screen, or cover the diversion intake structure.

2.26 Intake Structure Placement. Infrastructure installed in the streambed (e.g., cistern or spring box) shall not exceed 10 percent of the active channel width and shall not be located in the deepest portion of the channel. The depth of the intake shall be no greater than one foot (12 inches) below the streambed.

2.27 Intake Screening. The Permittee shall regularly inspect, clean, and maintain screens in good condition.

2.27.1 The water intake screens shall be securely attached (e.g., threaded or clamped) to the intake line and have a minimum wetted area of 0.25 square feet and a minimum open area of 27%.

2.27.2 A water intake screen with round openings shall not exceed 3/32-inch diameter; a screen with square openings shall not exceed 3/32-inch measured diagonally; and a screen with slotted openings shall not exceed 0.069 inches in width. Slots must be evenly distributed on the screen area.

2.27.3 The water intake screen may be constructed of any rigid material, perforated, woven, or slotted. Stainless steel or other corrosion-resistant material is recommended to reduce clogging due to corrosion. Care should be taken not to use materials deemed deleterious to aquatic species.

2.27.4 The water intake screen shall be placed in fast moving water with the long axis of the screen parallel to the streamflow. The water intake shall not be placed in pool habitat.

2.28 Intake Shall Not Impede Aquatic Species Passage. The water diversion structures shall be designed, constructed, and maintained such that they do not constitute a barrier to upstream or downstream movement of aquatic life.

2.29 Exclusionary Devices. Permittee shall keep the diversion structures (e.g. cistern) covered at all times to prevent the entrance and entrapment of amphibians and other wildlife.

2.30 Diversion Intake Removal. Permittee shall plug, cap, block (e.g., with a shut-off valve), or remove all intakes at the end of each diversion season.

2.31 Heavy Equipment Use. No heavy equipment shall be used in the excavation or replacement of the existing water diversion structure. The Permittee shall use hand tools or other low impact methods of removal/replacement. All project materials and debris shall be removed from the project site and properly disposed of off-site upon project completion.

2.32 Diversion Infrastructure Plan (DIP). The Permittee shall submit a DIP for CDFW review and approval prior to diverting water. The DIP shall include a narrative describing the different elements of the water diversion infrastructure, supporting photographs and/or diagrams, and justification of how compliance with the **Water Diversion Infrastructure** conditions will be achieved under this Agreement.

Diversion to Storage

2.33 Water Storage. All water storage facilities (WSFs) (e.g., reservoirs, storage tanks, mix tanks, and bladders tanks) must be located outside the active 100-year floodplain and outside the top of bank of a stream. Covers/lids shall be securely affixed to water tanks at all times to prevent potential entry by wildlife. Permittee shall cease all water diversion at the point of diversion when WSFs are filled to capacity.

2.34 Water Storage Maintenance. WSFs shall have a float valve to shut off the diversion when tanks are full to prevent overflow. Water shall not leak, overflow, or overtop WSFs at any time. Permittee shall regularly inspect all WSFs and infrastructure used to divert water to storage and use and repair any leaks.

2.35 Water Conservation. The Permittee shall make best efforts to minimize water use, and to follow best practices for water conservation and management.

2.36 Limitations on Impoundment and Use of Diverted Water. The Permittee shall impound and use water in accordance with a valid water right, including any limitations on when water may be impounded and used, the purpose for which it may be impounded and used, and the location(s) where water may be impounded and used.

2.37 State Water Code. This Agreement does not constitute a valid water right. The Permittee shall comply with State Water Code sections 5100 and 1200 et seq. as appropriate for the water diversion and water storage. The application for this registration is found at: http://www.swrcb.ca.gov/waterrights/publications_forms/forms/docs/sdu_registration.pdf.

Reservoirs

2.38 Reservoirs. Shall be appropriately designed, sized, and managed to contain any diverted water in addition to precipitation and storm water runoff, without overtopping. The Permittee shall install an overflow spillway that will withstand a 100-year flood event, designed with a dispersal mechanism, or low-impact design, that discourages channelization and promotes dispersal and infiltration of flows to prevent surface overflow from reaching waters of the State. The spillway shall be designed and placed to allow for a minimum of two-feet of freeboard.

2.39 Diversion. Water shall be diverted to reservoirs only if the Permittee can adhere to the diversion rate, bypass flow, season of diversion and all other relevant conditions of this Agreement.

2.40 No Stocking. Stocking of fish, wildlife, or plant of any kind, in any Waters of the State, including reservoirs, shall be prohibited without written permission from the department pursuant to Section 6400 of the Fish and Game Code.

2.41 Invasive Species Management for Reservoirs. Permittee shall implement an invasive species management plan prepared by a Biologist for any existing or proposed reservoir. The plan shall include, at a minimum, an annual survey for invasive aquatic species, including the American bullfrog (*Lithobates catesbeianus* = *Rana catesbeiana)*. The Biologist, if appropriate, shall implement eradication measures if invasive aquatic species are identified as part of the survey.

2.41.1 Bullfrog Management Plan. If bullfrogs are observed, they shall be appropriately managed. Management of bullfrogs, including annual draining and drying of ponds, shall follow the guidelines in Exhibit A. A copy of the annual monitoring report, shall be submitted to CDFW in accordance with the reporting measures described in Exhibit A and in the Reporting Measures section of this Agreement.

2.42 Seasonal Diversion Minimization. To minimize adverse impacts to native pond breeding amphibians (when present) the following diversion minimizations apply: From November 1 to March 31, the Permittee shall divert water at a rate no greater than the rate of water flowing into the pond (i.e., water diversion shall not decrease the pond depth). From April 1 – September 1, when native larval amphibians are present, the Permittee shall cease diverting water once the pond volume is one third of the maximum pond volume. To comply with this measure; the Permittee shall establish a fixed visual marker(s) (e.g., stage plate) in the pond as a reference for water level thresholds.

2.43 Wildlife Entrapment Prevention. The Permittee shall install several exit ramps to prevent wildlife entrapment. Exit ramps shall meet the following requirements: installed at no greater than 2:1 slope, securely fixed at the upslope end, made of solid material (e.g. wood), and be a minimum length of 1.5 times the radius of the pond. A notice of completed work, with supplemental pictures, shall be submitted to CDFW **within seven (7) days** of project completion as part of the work completion report.

Stream Crossings

2.44 Road Approaches. The Permittee shall treat road approaches to new or re-constructed permanent crossings *on Class I and II watercourses* to minimize erosion and sediment delivery to the watercourse. Permittee shall ensure road approaches are hydrologically disconnected to the maximum extent feasible to prevent sediment from entering the crossing site, including when a Stream Crossing is being constructed or reconstructed. Road approaches shall be armored from the crossing for a minimum of *50 feet in both directions,* or to the nearest effective water bar or point where road drainage does not drain to the crossing, with durable, clean, screened, angular rock.

2.45 Excavated Fill. Excavated fill material shall be placed in upland locations where it cannot deliver to a watercourse. To minimize the potential for material to enter the watercourse during the winter period, all excavated and relocated fill material shall be tractor contoured (to drain water) and tractor compacted to effectively incorporate and stabilize loose material into existing road and/or landing features.

2.46 Runoff from Steep Areas. The Permittee shall make preparations so that runoff from steep, erodible surfaces will be diverted into stable areas with little erosion potential or contained behind erosion control structures. Erosion control structures

such as straw bales and/or siltation control fencing shall be placed and maintained until the threat of erosion ceases. Frequent water checks shall be placed on dirt roads, cat tracks, or other work trails to control erosion.

2.47 Crossing Maintenace. The Permittee shall provide site maintenance for the life of the structures, including, but not limited to, re-applying erosion control to minimize surface erosion and ensuring drainage structures, streambeds and banks remain sufficiently armored and/or stable.

2.47.1 The placement of armoring shall be confined to the work period when the stream is dry or at its lowest flow

2.47.2 No heavy equipment shall enter the wetted stream channel.

2.47.3 No fill material, other than clean rock, shall be placed in the stream channel.

2.47.4 Rock shall be sized to withstand washout from high stream flows, and extend above the ordinary high water level.

2.47.5 Rock armoring shall not constrict the natural stream channel width and shall be keyed into a footing trench with a depth sufficient to prevent instability.

2.48 Isolation of Work Site. Only when work in a flowing stream is unavoidable (e.g., perennial streams), Permittee shall divert the stream flow around or through the work area during construction operations. Permittee shall adhere to the following conditions:

2.48.1 Stream Diversion. Stream flow shall be diverted using gravity flow through temporary culverts/pipes or pumped around the work site with the use of hoses.

2.48.2 Coffer Dams. Prior to the start of construction, Permittee shall isolate the work area. Cofferdams shall be installed to divert stream flow; isolate and dewater the work site; catch and retain sediment-laden water; and minimize sediment transport downstream. Water tight coffer dams shall be constructed upstream and downstream of the work area and water diverted, through a suitably sized pipe, from upstream of the upstream coffer dam and discharge downstream of the downstream coffer dam. Coffer dams and the stream diversion system shall remain in place and functional throughout the construction period. Coffer dams or stream diversions that fail for any reason shall be repaired immediately. Permittee shall use only clean, non-erodible materials such as sand bags, on-site rock, and/or plastic sheeting. Mineral soil shall not be used in the construction of cofferdams.

2.48.3 Stranded Aquatic Life. Once coffer dams are installed, a qualified biologist or other qualified professional trained to identify listed species shall check

daily for stranded aquatic life as the water level in the dewatering area drops. All reasonable efforts shall be made to capture and move all stranded aquatic life observed in the dewatered areas. Capture methods may include fish landing nets, dip nets, buckets and by hand. Captured aquatic life shall be released immediately in the closest suitable aquatic habitat adjacent to the work site. This condition does not allow for the take or disturbance of any State or federally listed species, or State listed species of special concern. The Department staff who prepared this agreement shall be contacted immediately if any of these species are detected.

2.48.4 Dewatering. Permittee shall catch and retain sediment-laden water and minimize sediment transport downstream. Flowing water shall be cleanly bypassed and/or prevented from entering the work area through pumping or gravity flow, and cleanly returned to the stream below the work area. Permittee shall divert stream flow around the work site in a manner that minimizes turbidity, siltation, and pollution, and does not result in erosion or scour downstream of the diversion.

2.48.5 Remove any Materials upon Completion. Permittee shall remove any turbid water and sediment present in the work area prior to restoring water flow through the project site, and place them in a location where they cannot enter the Waters of the State. Permittee shall remove all materials used for the temporary stream flow bypass after the Authorized Activity is completed.

2.48.6 Restore Normal Flows. Permittee shall restore normal flows to the effected stream immediately upon completion of work at that location.

2.49 Culvert Installation.

2.49.1 Permanent culverts shall be sized to accommodate the estimated 100-year flood flow [i.e. ≥1.0 times the width of the bankfull channel width or the 100-year flood size, whichever is greater], including debris, culvert embedding, and sediment loads.

2.49.2 If the project is located in a high to very high Fire Hazard Severity Zone as designated by CAL FIRE, CDFW recommends culvert materials consist of corrugated metal pipe (CMP). Use of High Density Polyethylene (HDPE) pipe is discouraged.
http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones_maps

2.49.3 Existing fill material in the crossing shall be excavated down vertically to the approximate original channel and outwards horizontally to the approximate crossing hinge points (transition between naturally occurring soil and remnant temporary crossing fill material) to remove any potential unstable debris and voids in the older fill prism.

2.49.4 Culvert shall be installed to grade (not perched or suspended), aligned with the natural stream channel, and extend lengthwise completely beyond the toe of fill. If culvert cannot be set to grade, it shall be oriented in the lower third of the fill face, and a downspout or energy dissipator (such as boulders, rip-rap, or rocks) shall be installed above or below the outfall as needed to effectively control stream bed, channel, or bank erosion (scouring, headcutting, or downcutting). The Permittee shall ensure basins are not constructed and channels are not be widened at culvert inlets.

2.49.5 Culvert bed shall be composed of either compacted rock-free soil or crushed gravel. Bedding beneath the culvert shall provide for even distribution of the load over the length of the pipe, and allow for natural settling and compaction to help the pipe settle into a straight profile. The crossing backfill materials shall be free of rocks, limbs, or other debris that could allow water to seep around the pipe, and shall be compacted.

2.49.6 Culvert inlet, outlet (including the outfall area), and fill faces shall be armored where stream flow, road runoff, or rainfall energy is likely to erode fill material and the outfall area.

2.49.7 Project Inspection. The Project shall be inspected by a licensed engineer to ensure that the stream crossings were installed as designed. A copy of the inspection report, including photographs of each site, shall be submitted to CDFW within 90 days of completion of each project.

Stream Restoration

2.50 Stream Restoration Plan. The Permittee shall submit a Stream Restoration Plan to CDFW prior to conducting remediation activities. The Stream Restoration Plan (SRP) shall detail the dimensions and slopes of the stream channel to be remediated. The SRP shall describe any material utilized to restore the channel to a natural condition. The SRP shall include a revegetation plan for remediation of the impacted channel reach.

2.51 The Project shall be inspected by a licensed engineer to ensure that the stream restoration was implemented as designed. A copy of the inspection report, including photographs of each site, shall be submitted to CDFW within 90 days of completion of this project.

2.52 Revegetation Plan. The Permittee shall submit a revegetation plan with the SRP to CDFW for review and approval prior to implementation of riparian habitat restoration activities. The Revegetation Plan shall, at a minimum, include the following:

2.52.1 The identification of the area and vegetation types that will be restored.

2.52.2 A planting design and palette appropriate to the vegetation type, cover, stratum, and level of biodiversity (i.e., species richness and composition). Use of a reference site is recommended.

2.52.3 Use regionally appropriate native plants for a riparian vegetation type. The derivation of plant material such as containers, plugs, cuttings, divisions, or seeds from coastal areas of Humboldt, Del Norte and Mendocino Counties within 30 miles of the coast. All native seed material shall be from the North Coast ecoregion (Humboldt, Mendocino, Sonoma or Del Norte Counties), if practical. If quantities are not able to be satisfied from these collection sites, propagules may be obtained from other counties in Northern California with pending approval from a restoration ecologist or botanist.

2.52.4 Cuttings of willows, cottonwoods conducted when dormant. Collection of cuttings within an area dispersed to maintain genetic and sexual diversity, and to avoid adversely impact existing riparian vegetation. Cuttings hydrated between harvesting and planting (e.g., soak cuttings in water several days to a week to stimulate rooting prior to planting). Cuttings planted to depth of 75 percent of their length with buds pointing up and bottom of cutting in moist soil or water.

2.52.5 Planting conducted after the first seasonal rains have saturated soils beyond the first several inches (November/December) and before April.

2.52.6 No application of fertilizer on plants or chemical controls on weeds.

2.52.7 Measurable success criteria based on plant survival, density, or cover.

2.52.8 Monitoring conducted for a minimum of five years to determine whether the revegetation goals and objectives have been met. Remedial measures if revegetation goals and objectives are not met.

2.52.9 Annual status reports on the revegetation efforts shall be submitted to CDFW in the by **October 31 of each year** following initial planting for the length of the monitoring period.

Micro-hydroelectric Power Diversion

2.53 Maximum Diversion Rate. The maximum instantaneous diversion rate from the water intake shall not exceed **3 gallons per minute** (gpm) at any time.

2.54 Bypass Flow. The Permittee shall pass **90% of the flow** at all times to keep all aquatic species including fish and other aquatic life in good condition below the point of diversion.

2.55 Seasonal Diversion Minimization. No water shall be diverted during the low flow season from **May 15 to October 31** of any year. Water shall be diverted only if the Permittee can adhere to the maximum diversion rate and bypass conditions for micro-hydro power provided in this Agreement.

2.56 Micro-hydroelectric Intake Structure and Screening. Permittee shall adhere to all of the **Water Diversion Infrastructure** conditions of this agreement

3. Reporting Measures

Permittee shall meet each reporting requirement described below.

3.1 CDFW Notification of Work Initiation. The Permittee shall contact CDFW within the seven-day period preceding the beginning of work permitted by this Agreement. Information to be disclosed shall include Agreement number, and the anticipated start date.

3.2 Work Completion. The proposed work shall be completed by no later than **October 1, 2021 for all projects, and no later than October 1, 2019 for Project ID "Reservoir-1 (PO-1) removal and stream restoration. Notification of completion will include photographs of the completed work, erosion control measures, waste containment and disposal, and a summary of any CNDDB submissions** and shall be submitted to CDFW, LSA program at 619 Second Street, Eureka, CA 95501 **within seven (7) days** of project completion.

3.2.1 Wildlife Entrapment Prevention for Reservoirs. A notice of completed work, with supplemental photos, shall be submitted to the Department for all reservoirs.

3.3 Project Inspection. The Project shall be inspected a licensed engineer to ensure that the stream crossings were installed as designed and/or the stream restoration was implemented as designed. A copy of the inspection report, including photographs of each site, shall be submitted to CDFW within 90 days of completion of this project. The Permittee shall submit the **Project Inspection Report** to CDFW, LSA Program at 619 Second Street, Eureka, CA 95501

3.4 Measurement of Diverted Flow. Copies of the **Water Diversion Records** shall be submitted to CDFW, LSA Program at 619 Second Street, Eureka, CA 95501 no later than **December 31** of each year beginning in **2018**.

3.5 Water Management Plan. The Permittee shall submit a **Water Management Plan** within **60 days** from the effective date of this agreement. The Water Management Plan shall be submitted to CDFW, LSA Program at 619 Second Street, Eureka, CA 95501.

3.6 Diversion Infrastructure Plan. The Permittee shall submit **Diversion Infrastructure Plan** within **60 days** from the effective date of this agreement. Permittee shall **allow 60 days for CDFW review and approval** after submittal of a Diversion Infrastructure Plan. This document shall be submitted to CDFW at the 619 Second Street, Eureka, CA 95501

3.7 Invasive Species Management for Reservoirs. The Permittee shall submit all required documents described in the Invasive Species Management for Reservoirs including a **Bullfrog Management Plan** (Exhibit A) no later than **December 31** of each year. The Bullfrog Management Plan shall be submitted to CDFW at 619 Second Street, Eureka, CA 95501.

3.8 Interim Erosion Control Plan. The Permittee shall submit an **Interim Erosion Control Plan within 30 days** of signing this Agreement, for review and approval by the Department. The Interim Erosion Control Plan shall be submitted to CDFW at 619 Second Street, Eureka, CA 95501.

3.9 Stream Restoration Plan. The Permittee shall submit a **Stream Restoration Plan within 90 days** of signing this Agreement, for review and approval by the Department. The Stream Restoration Plan shall be submitted to CDFW at 619 Second Street, Eureka, CA 95501.

3.10 Revegetation Plan. The permittee shall submit a **Revegetation Plan within 90 days** of signing this Agreement, for review and approval by the Department. The Revegetation Plan shall be submitted to CDFW at 619 Second Street, Eureka, CA 95501.

3.10.1 Annual status reports on the revegetation efforts shall be submitted to CDFW by **October 31 of each year** following initial planting for the length of the monitoring period.

CONTACT INFORMATION

Any communication that Permittee or CDFW submits to the other shall be in writing and any communication or documentation shall be delivered to the address below by U.S. mail, fax, or email, or to such other address as Permittee or CDFW specifies by written notice to the other.

To Permittee:

Kevin Spreng, Manager
AMT, LLC
585 Mount Curve Blvd.
St. Paul, Minnesota 55116
(612) 419-5197
info@amtllca.com

To CDFW:

Department of Fish and Wildlife
Northern Region
619 Second Street
Eureka, California 95501
Attn: Lake and Streambed Alteration Program
Notification #1600-2018-0047-R1

LIABILITY

Permittee shall be solely liable for any violation of the Agreement, whether committed by the Permittee or any person acting on behalf of the Permittee, including its officers, employees, representatives, agents or contractors and subcontractors, to complete the project or any activity related to it that the Agreement authorizes.

This Agreement does not constitute CDFW's endorsement of, or require the Permittee to proceed with the project. The decision to proceed with the project is the Permittee's alone.

SUSPENSION AND REVOCATION

CDFW may suspend or revoke in its entirety this Agreement if it determines that the Permittee or any person acting on behalf of the Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, is not in compliance with the Agreement.

Before CDFW suspends or revokes the Agreement, it shall provide the Permittee written notice by certified or registered mail that it intends to suspend or revoke. The notice shall state the reason(s) for the proposed suspension or revocation, provide the Permittee an opportunity to correct any deficiency before CDFW suspends or revokes the Agreement, and include instructions to the Permittee, if necessary, including but not limited to a directive to immediately cease the specific activity or activities that caused CDFW to issue the notice.

ENFORCEMENT

Nothing in the Agreement precludes CDFW from pursuing an enforcement action against the Permittee instead of, or in addition to, suspending or revoking the Agreement.

Nothing in the Agreement limits or otherwise affects CDFW's enforcement authority or that of its enforcement personnel.

OTHER LEGAL OBLIGATIONS

This Agreement does not relieve Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from complying with, or obtaining any other permits or authorizations that might be required under, other federal, state, or local laws or regulations before beginning the project or an activity related to it. For example, if the project causes take of a species listed as threatened or endangered under the Endangered Species Act (ESA), such take will be unlawful under the ESA absent a permit or other form of authorization from the U.S. Fish and Wildlife Service or National Marine Fisheries Service.

This Agreement does not relieve Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from complying with other applicable statutes in the Fish and Game Code including, but not limited to, Fish and Game Code sections 2050 *et seq.* (threatened and endangered species), section 3503 (bird nests and eggs), section 3503.5 (birds of prey), section 5650 (water pollution), section 5652 (refuse disposal into water), section 5901 (fish passage), section 5937 (sufficient water for fish), and section 5948 (obstruction of stream).

Nothing in the Agreement authorizes the Permittee or any person acting on behalf of the Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, to trespass.

AMENDMENT

CDFW may amend the Agreement at any time during its term if CDFW determines the amendment is necessary to protect an existing fish or wildlife resource.

The Permittee may amend the Agreement at any time during its term, provided the amendment is mutually agreed to in writing by CDFW and the Permittee. To request an amendment, the Permittee shall submit to CDFW a completed CDFW "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the corresponding amendment fee identified in CDFW's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5).

TRANSFER AND ASSIGNMENT

This Agreement may not be transferred or assigned to another entity, and any purported transfer or assignment of the Agreement to another entity shall not be valid or effective, unless the transfer or assignment is requested by the Permittee in writing, as specified below, and thereafter CDFW approves the transfer or assignment in writing.

The transfer or assignment of the Agreement to another entity shall constitute a minor amendment, and therefore to request a transfer or assignment, the Permittee shall submit to CDFW a completed CDFW "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the minor amendment fee identified in CDFW's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5).

EXTENSIONS

In accordance with Fish and Game Code section 1605, subdivision (b), Permittee may request one extension of the Agreement, provided the request is made prior to the expiration of the Agreement's term. To request an extension, Permittee shall submit to CDFW a completed CDFW "Request to Extend Lake or Streambed Alteration" form and include with the completed form payment of the extension fee identified in CDFW's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5). CDFW shall process the extension request in accordance with Fish and Game Code section 1605, subdivisions (b) through (e).

If Permittee fails to submit a request to extend the Agreement prior to its expiration, Permittee must submit a new notification and notification fee before beginning or continuing the project the Agreement covers (Fish & G. Code § 1605, subd. (f)).

EFFECTIVE DATE

The Agreement becomes effective on the date of CDFW's signature, which shall be: 1) after the Permittee signature; 2) after CDFW complies with all applicable requirements under the California Environmental Quality Act (CEQA); and 3) after payment of the applicable FGC section 711.4 filing fee listed at http://www.wildlife.ca.gov/habcon/ceqa/ceqa_changes.html.

TERM

This Agreement shall **expire five years** from date of execution, unless it is terminated or extended before then. All provisions in the Agreement shall remain in force throughout its term. The Permittee shall remain responsible for implementing any provisions specified herein to protect fish and wildlife resources after the Agreement expires or is terminated, as Fish and Game Code section 1605, subdivision (a)(2) requires.

EXHIBITS

The documents listed below are included as exhibits to the Agreement and incorporated herein by reference.

A. Exhibit A. Bullfrog Monitoring and Management Plan for 1600-2018-0047-R1. California Department of Fish and Wildlife, Northern Region.

AUTHORITY

If the person signing the Agreement (signatory) is doing so as a representative of Permittee, the signatory hereby acknowledges that he or she is doing so on Permittee's behalf and represents and warrants that he or she has the authority to legally bind Permittee to the provisions herein.

AUTHORIZATION

This Agreement authorizes only the project described herein. If Permittee begins or completes a project different from the project the Agreement authorizes, Permittee may be subject to civil or criminal prosecution for failing to notify CDFW in accordance with Fish and Game Code section 1602.

CONCURRENCE

The undersigned accepts and agrees to comply with all provisions contained herein.

FOR AMT,LLC (Kevin Spreng, Manager)

_____ _____

Kevin Spreng, Manager - AMT, LLC Date

FOR DEPARTMENT OF FISH AND WILDLIFE

_____ _____

Cheri Sanville Date

Senior Environmental Scientist Supervisor

Prepared by: Andrew Orahoske, Environmental Scientist, September 12, 2018

EXHIBIT A.

BULLFROG MONITORING AND MANAGEMENT PLAN FOR 1600-2018-0047-R1

GENERAL BULLFROG INFORMATION

The American bullfrog (*Lithobates catesbeianus* = *Rana catesbeiana*); hereafter bullfrog, is an invasive non-native species in California and poses a significant threat to California's native fish and wildlife resources. Bullfrogs were introduced in California over 100 years ago from eastern parts of the United States as a food supply, but have since caused substantial ecological consequences. Bullfrogs are considered highly invasive and are well documented to be prey upon a variety of fish and wildlife species, including some that are rare, threatened, and endangered. Human modifications to the environment provide favorable condition to bullfrogs such as artificially created agricultural ponds, canals and ditches where warm still water occurs. As a result bullfrogs have spread throughout California.

Efforts to control bullfrogs have been met with varying degrees of success because: 1) bullfrogs can be difficult to detect and go dormant from fall through winter, 2) bullfrogs often take cover in difficult areas to manage (e.g. dense vegetation), 3) they can travel long distances to colonize and re-colonize areas, 4) they have high reproductive output, 5) they are weary and readily flee perceived threats, and 6) they can survive physical trauma remarkably well. CDFW scientific staff recognizes there is an urgent and immediate need to develop improved bullfrog management strategies to protect California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public. Public support and implementation of bullfrog control in California is an important conservation strategy that will help protect natural resources for future generations.

MONITORING

The Project reservoir(s) shall be monitored for bullfrog presence on an annual basis with a minimum of five total surveys, no less than two weeks apart, throughout the months of May-July

- All pond survey effort must be made by a person knowledgeable in bullfrog identification (see Appendix A for reference photos);
- Survey efforts shall include listening for bullfrog calls and slowly walking the complete perimeter of the pond at night* (dusk or later) while shining a flashlight to detect movement and eye-shine

If bullfrogs are not detected upon completion of five total surveys, or at any other time of the year incidentally, removal efforts are not required that year.

*Day time monitoring can also be conducted to aid detection but is not required under this plan.

SUCCESS CRITERIA

The level of effort needed to successfully manage bullfrog populations varies with infestation levels. This plan shall be considered successfully implemented if sufficient effort is provided to prevent adult bullfrogs from reproducing in the reservoir(s) each year, and no bullfrog life-stages can be detected. Bullfrogs are capable of traveling long distances over-land, and on-going

efforts will be required to ensure dispersing bullfrogs do not colonize the reservoir(s) at a future time.

OPTIONS FOR MANAGEMENT

Two management methods may by employed for controlling bullfrogs under this plan and include:

- Manual direct removal
- Reservoir de-watering (Hydro-modification)

Implementing both reservoir de-watering and manual direct removal is currently believed to be the most effective method of managing bullfrog infestations. For reservoirs that are heavily infested with juvenile bullfrogs and/or tadpoles, reservoir dewatering may be necessary to break the bullfrog's life cycle and prevent on-going reproduction. Prior to conducting reservoir dewatering activities, please coordinate with CDFW Environmental Scientist Andrew Orahoske at andrew.orahoske@wildlife.ca.gov.

Direct Removal

All direct removal efforts must be made by a person knowledgeable in bullfrog identification.

- Removal efforts must occur during, but are not be limited to the active/breeding season, occurring May – July;
- A minimum of ***five*** efforts throughout the season are considered necessary;
- Direct removal efforts are typically most effective when conducted at night with use of lights but can also be conducted during the day;
- Direct removal must include working the entire perimeter of the reservoir;
- A rubber raft or small boat may be necessary to successfully remove some individuals;
- A team of two individuals or more is often helpful, one person for shining lights and/or operating a boat and the other person to perform removal efforts;
- Bullfrog tadpoles must be removed and dispatched and must not be relocated or kept as pets.

Management Authorization

Take of bullfrogs is specifically allowed in the California Code of Regulations (CCR), Title 14 (T-14) section 5.05(a)(28), under the authority of a sport fishing license. There is no daily bag limit, possession limit or hour restriction, but bullfrogs can only be taken by hand, hand-held dip net, hook and line, lights, spears, gigs, grabs, paddles, bow and arrow or fish tackle.

Alternatively, FGC Section 5501 allows CDFW, as limited by the commission, to issue a permit to destroy fish that are harmful to other wildlife. The regulations have addressed this under Section CCR T-14 226.5 Issuance of Permits to Destroy Harmful Species of Fish in Private Waters for Management Purposes. This allows the CDFW to issue free permits to destroy harmful aquatic species by seining and draining.

Pond Dewatering

Pond dewatering may be appropriate if the reservoir can be successfully dewatered without adversely affecting stream resources. Careful planning and coordination with CDFW, is necessary to ensure potential impacts to stream resources can be addressed, prior to commencing with pond draining. Discharge of polluted water to waters of the state may require permitting from other agencies with permitting authority, such as the Regional Water Quality Control Board.

In general, bullfrog tadpoles require two years to develop into frogs, whereas native amphibians only require one year. Therefore, draining a reservoir every year is intended to interrupt bullfrog tadpole development, dramatically decrease bullfrog populations and allow for reduced efforts as a measure of adaptive management. Typically in Northern California, reservoir draining should occur in September through October to avoid impacts to sensitive native amphibian and fishery resources. While draining occurs, direct removal efforts should be employed as described above if possible.

REPORTING

A written log shall be kept of monitoring and management efforts and shall be provided to CDFW **each year** by December 31. The written log shall include: 1) date and time of each monitoring and management effort, 2) approximate number of each bullfrog life stage detected and/or removed per effort, and 3) amount of time spent for each monitoring and management effort.

APPENDIX A. BULLFROG REFERENCE PHOTOS



This is a photo of a Bullfrog tadpole. (Photo taken by Mike van Hattem).



The photos shown in this Appendix demonstrate a medium sized adult bullfrog that was removed from Ten Mile Creek, Mendocino County. Note the bullfrog has a large tympanum, (circular ear drum shown with an arrow) and **does not** have distinct ridges along its back (dorsolateral folds). Photo taken by Wes Stokes.



The bullfrog has somewhat distinct mottling and **the underside of the bullfrogs hind legs are not shaded pink or red.**

Road Evaluation Report

APNs: 315-211-03 & 315-211-04

Prepared for:

Adesa Organic

SHN Engineers & Geologists

812 W. Wabash
Eureka, CA 95501-2138
707-441-8855

December 2016
016178.400

Road Evaluation Report

APNs: 315-211-03 & 315-211-04

Prepared for:

Adesa Organic

Also applies to Deva Amrita LLC - County Apps #11924

SHN Engineers & Geologists

812 W. Wabash
Eureka, CA 95501-2138
707-441-8855

December 2016
016178.400

CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash Eureka, CA 95501-2138 707-441-8855 FAX: 707-441-8877 shninfo@shn-engr.com

Reference: 016178

December 7, 2016

Adesa Organic
1701 N. California Blvd.
Walnut Creek, CA 94596

Subject: **Road Evaluation Report, Adesa Organics, Maple Creek Area, Humboldt County, California; APN's 315-211-03 and 315-211-04**

To Whom it May Concern:

The enclosed report documents the results of our evaluation of the access road leading to your Maple Creek property. The road evaluation report included herein is intended to provide the necessary recommendations to bring the road into compliance with County and wildlife/water quality agency standards. This document is consistent with the County of Humboldt's *Road Evaluation Report*, and includes worksheets for both Parts A and B. The *Road Evaluation Report* Part B checklist was completed relative to the *AASHTO Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT≤400)*.

Respectfully,

SHN Engineers & Geologists

Gary D. Simpson, CEG
Geosciences Director

GDS:lms

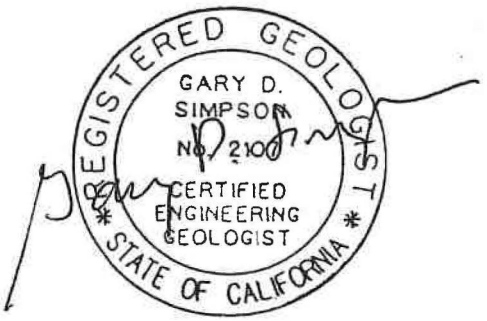
Enclosure: Road Repair Plan

Reference: 016178

Road Evaluation Report
APNs – 315-211-03 & 315-211-04

Prepared for:

Adesa Organic
1701 N. California Blvd.
Walnut Creek, CA



Prepared by:

Engineers & Geologists
812 W. Wabash Ave.
Eureka, CA 95501-2138
707-441-8855

December 2016

QA/QC: GDS

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4.0	Proposed Road Construction	6
5.0	Conclusions	6
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Appendix A. County Road Evaluation Report Forms–Parts A and B

List of Illustrations

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1.0 Introduction

This report presents the results of SHN's evaluation of the existing access road leading to the proposed Adesa Organics cannabis cultivation site (APNs 315-211-04 and 315-211-03) in Maple Creek (Figure 1). We understand you are developing an industrial agricultural operation at the site, and are in the process of applying for appropriate permits. One requirement is completion of an evaluation of access roads. This road evaluation report is intended to provide recommendations necessary to allow all-season industrial use of the road compliant with county and wildlife/water quality agency standards. As such, the goal is to develop a stable, all-season road that can be used safely under the anticipated traffic conditions, without contributing sediment to area watercourses. This report is intended to provide information consistent with Humboldt County's *Road Evaluation Report*, including Part A and Part B worksheets, but includes additional information relative to erosion potential and the necessity to prevent road-related sediment from reaching area watercourses.

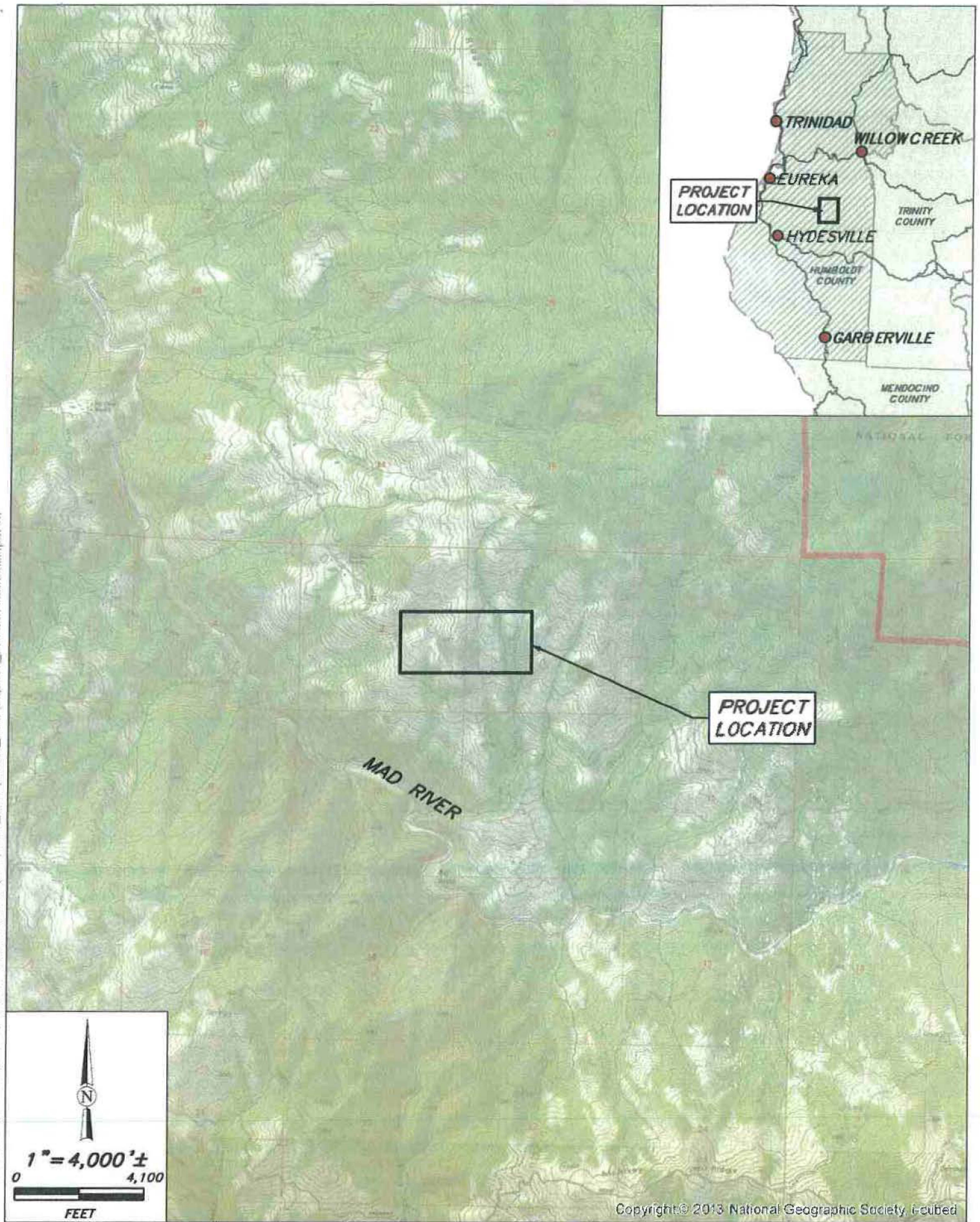
The access road to the subject property leaves Maple Creek Road (a county road) and crosses a neighboring property (APN 315-222-03) using an established easement before reaching the site. Some of the improvements proposed herein are associated with the access road where it crosses the neighboring property. We assume that it is the Owner's responsibility to maintain the easement such that they can improve and use the access road into the future.

2.0 Existing Conditions

The subject access road is a long-term ranch road that has historically seen very limited usage. Based on its design and usage, the 1.1 mile long access road can be considered a "two-way single-lane road" according to the definition in AASHTO's *Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT ≤400).* Review of aerial photographs indicates the road has persisted for many years as a basic, unimproved (dirt surfaced) ranch road. It appears that the road was partially realigned and improved just prior to 2009 (fresh grading is apparent in 2009 aerial imagery). The access road in its current state is in relatively good condition, with few apparent erosion issues, despite limited maintenance.

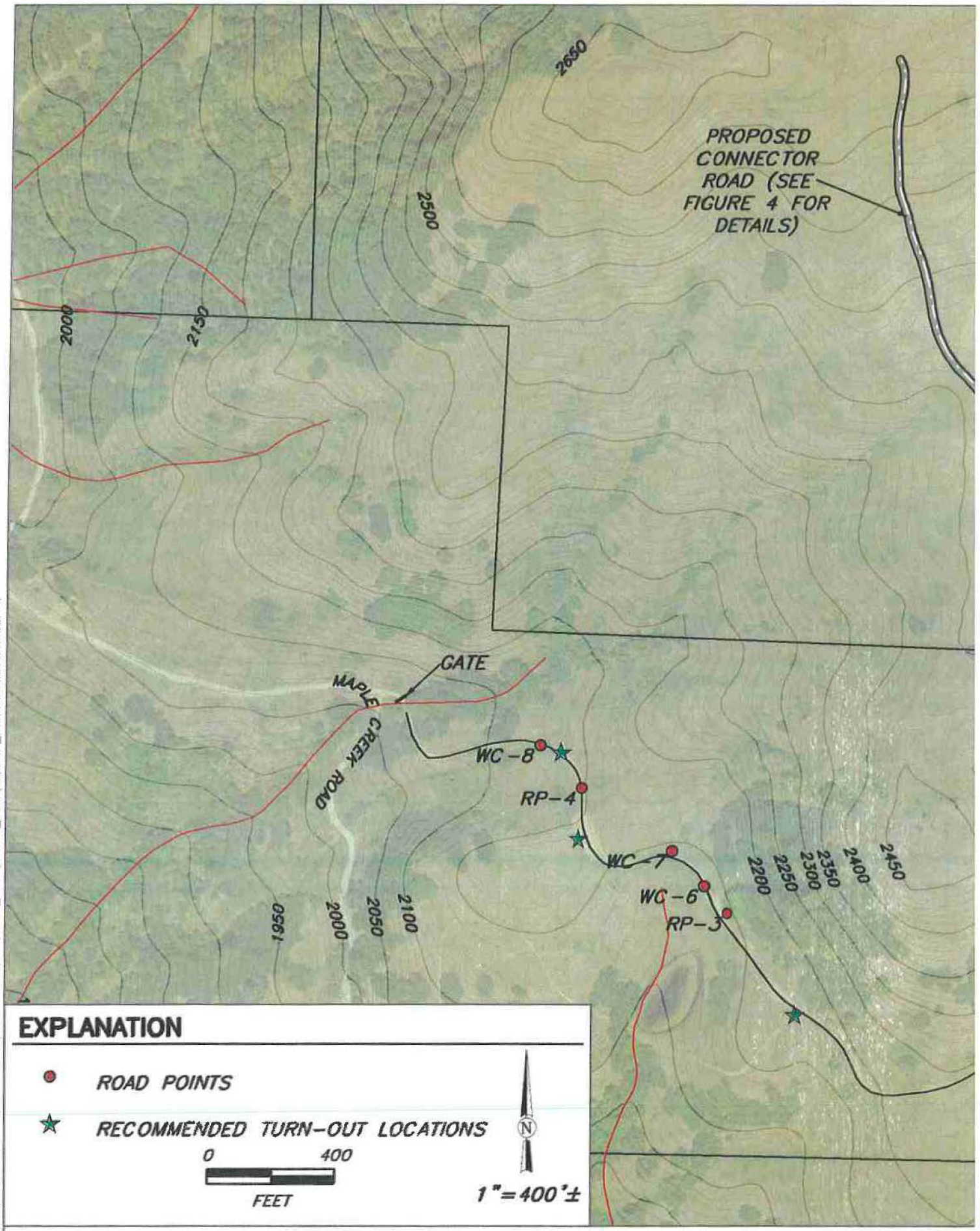
The road crosses mostly grassy prairie ground, with three primary watercourse crossings and several minor watercourse crossings. The road is generally in-sloped, with inboard ditches and water breaks spaced at irregular intervals. Many areas lack sufficient water breaks (that is, water bars or rolling dips that are placed at regular intervals to divert inboard ditch flow across the road to suitable outlets on open slopes below the road). Watercourse crossings, in general, are adequately designed and constructed, with few necessary upgrades. Road width (generally a minimum of 16 feet wide) is adequate for the current and intended purpose, which is to convey very low levels of traffic to and from the proposed agricultural site. Curve radius and road gradient are within necessary tolerances, and the road offers adequate visibility through most of its length. Maximum road gradients are approximately 15%, which occur in two limited segments.

Traffic loading has historically been extremely light, and is likely to stay as such based on current development plans. The road has a single purpose, which is to provide access to the site; no other property has used, or will use, this access road. The planned agricultural operation will require a slight increase in the traffic loading, but it is not expected to exceed more than a handful of vehicle trips per day.



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SHN Consulting Engineers & Geologists, Inc.	Adesa Organic Road Evaluation Maple Creek, Humboldt County, California	Project Location Map SHN 016178.400
	December 2016 | Figure1_ProjectLocationMap	Figure 1



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The primary improvements required to upgrade the road to a compliant all-season industrial roadway (with very low anticipated traffic usage) are rock surfacing, improvement of inboard ditches and water breaks, and the need for several additional turn-outs to allow opposing vehicles to safely pass one another. Below, we describe a series of road points and watercourse crossings to document the road condition and to define areas where upgrades are recommended.

3.0 Description of Road Points/Watercourse Crossings

Specific road points and watercourse crossings discussed herein are shown on the attached map (Figure 2). Road points are measured from the gate at Maple Creek Road (therefore, the gate is at MP 0.0).

Entire Road Length from Maple Creek Road to the Barn Complex (MP 0.0 to MP 1.1): The current road is an unimproved dirt surface that is unsuitable for all-season use.

> **Recommended Improvements for Entire Road:** Current practice suggests that in order to convert the road to an all-season road, it will be necessary to rock the surface for the entire length from Maple Creek Road to the barn complex. Use durable material suitable for application as road rock; the type of material may be dependent on the availability of nearby aggregate sources. Common practice for rural road development includes placement of a "base course" (about 4 inches of larger, clean broken rock), beneath a 2 inch "surface course" (a layer of finer crushed aggregate, with fines) that provides a compact running surface. In general, use of angular (crushed) aggregate is preferable for rural road construction, as it tends to stay in place better than rounded ("river-run") gravel.

Watercourse Crossing WC-1 (MP 1.07): The road crosses a Class II watercourse at this location adjacent to the existing barn complex; flow is conveyed beneath the road in a 48-inch corrugated metal pipe (CMP) culvert. The existing flow line visible on the culvert indicates high flows fill less than one-quarter of the pipe capacity, indicating that the culvert is adequately sized. The pipe is deformed (it is out-of-round), suggesting it was compromised during or prior to its emplacement, but it appears to still provide adequate flow capacity. The culvert is bedded properly at the upstream end of the crossing, but has an 18 inch drop at its outlet, where a small plunge pool has developed. Some stream flow is apparently occurring beneath the culvert, but there does not appear to be a significant potential for additional down-cutting as this flow follows the natural stream grade. The road is a minimum of 15 feet wide above the crossing. The adjacent road segments slope away from the crossing, and do not direct runoff or sediment to the stream.

> **Recommended Improvements for WC-1:** Place rock energy dissipation beneath the outlet of the culvert to reduce erosion potential during high stream flows.

Watercourse Crossing WC-2 (MP 1.06): This minor crossing facilitates drainage of a persistent wet area through an 18-inch corrugated plastic pipe (CPP) culvert. There is no apparent channel defining a stream leading to the site. Some sediment has accumulated at the outlet of the pipe, which should be monitored over time.

> **Recommended Improvements for WC-2:** No improvement is required at this site.

Watercourse Crossing WC-3 (MP 0.96): As at WC-2, an 18-inch CPP culvert allows drainage of a persistent wet area; there is no apparent stream at this site. The inlet is located within an excavated basin along the inboard road edge; the outlet drains to the open slope on the outboard side of the road. The road is a minimum of 15 feet wide above this crossing.

Recommended Improvements for WC-3: No upgrade is required at this site.

Road Point RP-1 (MP 0.87): This relatively steep road segment is adjacent to a Class II stream, just upslope of watercourse crossing WC-4 (described below). Upslope of WC-4, the road is subparallel to the stream, just above the localized "inner gorge" (Figure 3). Slopes descending from the outboard road edge to the creek are on the order of 70%. This is one of the few roads segments within a forested area.

The road gradient through this segment is about 15%. The road here is in-sloped, but the road lacks a substantial, functioning inboard ditch. In the absence of a functional ditch, runoff is occurring across the road surface, resulting in rilling and development of a 1-foot wide, 1-foot deep gully along the inboard road edge. Runoff extends to WC-4 at the base of the segment, due to the absence of ditch relief to direct runoff away from the roadway.

Due to the geometry of the curves at this site, and the presence of cut banks and trees, there are blind spots through this road segment. It does not appear feasible to realign the road through this segment due to its position near the creek and the height of existing cut banks.

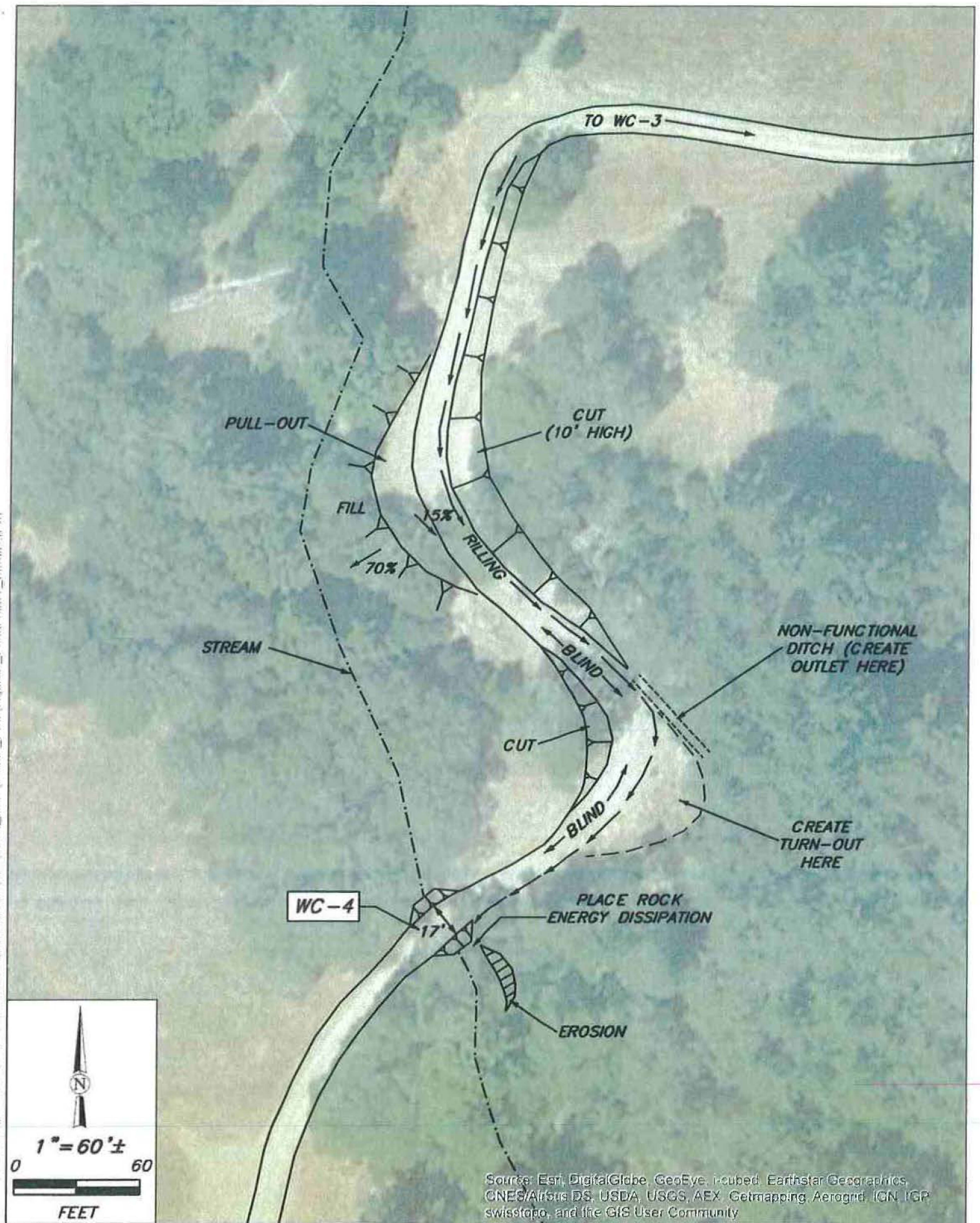
Recommended Improvements for RP-1:

- Enhance the existing inboard ditch to adequately contain runoff and prevent erosion of the road surface. Due to the necessary length of this ditch through a relatively steep road segment (it would not be appropriate to develop water bars/rolling dips to divert ditch drainage onto the steep slope west of the road that is adjacent to the nearby Class II watercourse), install periodic rock check dams in the ditch to dissipate erosion potential.
- Create an outlet for the ditch at the base of the descending segment, prior to the road bend east of WC-4 (see Figure 3). An existing, but non-functional relief ditch can be enhanced to re-direct flow toward the southeast, away from the road (and stream). The outlet discharges onto an open slope, which is appropriate.
- Create a turn-out at the base of the segment, adjacent to the relief ditch described above, to facilitate two-way traffic where blind spots currently occur (see Figure 3). A turn-out at the lower end of the segment would allow uphill traffic to pull off the road to allow descending vehicles to pass.

Watercourse Crossing WC-4 (MP 0.82): The road crosses a Class II watercourse at this site, adjacent to (west of) Road Point RP-1 (Figure 3). This appears to be a recently upgraded crossing, based on the condition of the culvert pipe and the presence of abundant rock slope protection on the upstream crossing face (which is not present at other crossings). The culvert appears adequately sized (42-inch CPP), although the outlet is associated with erosion along the left bank where flow is directed. The approaches to WC-4 dip into and out of the crossing (a "critical dip"), such that there is an absence of diversion potential in the event of culvert failure.

Recommended Improvements for WC-4:

- Place large rock as energy dissipation at the outlet of the culvert to mitigate continued erosion along the left bank.



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Consulting Engineers & Geologists, Inc.	Adesa Organic Road Evaluation Maple Creek, Humboldt County, California	Road Point 1 Site Details SHN 016178.400
	December 2016 | Figure3_RoadPoint1_Details	Figure 3

Abandoned Road Point ARP-1 (near MP 0.65): Between watercourse crossings 4 and 5 (Figure 2), the road was realigned during road upgrades that appear to have occurred just prior to 2009. Diversion of surface runoff along the former road surface, however, has resulted in significant erosion and formation of a large (more than 4 feet deep) gully on the valley wall slope leading to watercourse crossing WC-5. A sediment fan is apparent reaching the wetland along the stream channel just upstream of WC-5.

Recommended Improvements for ARP-1: The former road should be appropriately decommissioned to prevent diversion of runoff toward the recently formed erosion gully leading to WC-5. Areas of through-cut east of the gully that are causing the diversion should be re-graded to allow flow across the former road surface. The gully, to the extent feasible, should be filled with aggregate to prevent further erosion.

Watercourse Crossing WC-5 (MP 0.6): The road crosses a small Class II watercourse at this site. An 18-inch CPP culvert carries flow from a low-gradient inlet beneath the roadway. The road descends toward the crossing from both directions, such that the crossing is located in a critical dip that precludes stream diversion in case of culvert failure. The road segment to the east has a modest inboard ditch that lacks sufficient water breaks; some rilling of the road surface was observed in this area.

Recommended Improvements for WC-5:

- Enhance the inboard ditch on the eastern approach to the crossing, and construct water breaks (rolling dips/water bars) at 100-foot intervals, or as appropriate depending on the suitability of discharge points. Spacing for 100-foot water breaks is consistent with California Forest Practice Rules standards for roads with gradients between 10% and 25% in areas with a "high" erosion potential.
- Place rock energy dissipation at the outlet of the culvert at WC-5.

Road Point RP-2 (MP 0.51): The road segment directly west of watercourse crossing WC-5 is a long (in excess of 500 feet long), relatively straight, relatively steep segment (about 15% gradient). A meager inboard ditch is present that, similar to the segment east of WC-5, lacks sufficient ditch relief. As such, the ditch diverts water along the entire long road segment toward the creek at WC-5. Although there is reasonable line of sight from the top of the road segment to the bottom, the area lacks suitable turn-out opportunities in case of opposing traffic.

Recommended Improvements for RP-2:

- Enhance the inboard ditch on the approach to crossing WC-5, and construct water breaks (rolling dips/water bars) at 100-foot intervals, or as appropriate depending on the suitability of discharge points. Spacing for 100-foot water breaks is consistent with California Forest Practice Rules standards for roads with gradients between 10% and 25% in areas with a "high" erosion potential.
- Develop suitable turn-outs at the top and bottom of this road segment. There is ample space for a turn-out along the northern side of the road at the base of the segment, and along the southern side of the road at the top of the segment.

Road Point RP-3 (MP 0.28): This moderate gradient road segment represents the eastern approach to watercourse crossing WC-6. The road segment has an inadequate inboard ditch and lacks sufficient water breaks to prevent unimpeded flow along the inboard road edge (that subsequently results in unnecessary erosion).

Recommended Improvements for RP-3:

- Enhance the inboard ditch on the approach to crossing WC-6, and construct water breaks (rolling dips/water bars) at 100-foot intervals, or as appropriate depending on the suitability of discharge points. Spacing for 100-foot water breaks is consistent with California Forest Practice Rules standards for roads with gradients between 10% and 25% in areas with a "high" erosion potential.
- Develop an additional turn-out at the uphill (eastern) end of this road segment, to facilitate safe passing in the event that opposing traffic occurs.

Watercourse Crossing WC-6 (MP 0.26): An 18-inch CPP culvert at this site allows drainage of a minor wet area.

Recommended Improvements for WC-6: No upgrade is required at this site.

Watercourse Crossing WC-7 (MP 0.23): An 18-inch CPP culvert at this site allows drainage of a minor Class III watercourse.

Recommended Improvements for WC-7: No upgrade is required at this site.

Road Point RP-4 (MP 0.17): This road segment represents the eastern approach to watercourse crossing WC-8. The road segment has an inadequate inboard ditch and lacks sufficient water breaks to prevent unimpeded flow along the inboard road edge (that subsequently results in unnecessary erosion). There is a gully forming along the inboard edge of the road along this segment.

Recommended Improvements for RP-4:

- Enhance the inboard ditch on the approach to crossing WC-8, and construct water breaks (rolling dips/water bars) at 100-foot intervals, or as appropriate depending on the suitability of discharge points. Spacing for 100-foot water breaks is consistent with California Forest Practice Rules standards for roads with gradients between 10% and 25% in areas with a "high" erosion potential.
- Develop an additional turn-out at the uphill (southeastern) end of this road segment, to facilitate safe passing in the event that opposing traffic occurs.

Watercourse Crossing WC-8 (MP 0.17): An 18-inch CPP drains a wet area at this site. The outlet is infilled with sediment, and should be monitored. There are inadequate turnouts in this area to allow safe passage of two-way traffic.

Recommended Improvements for WC-8: Construct a turnout just east of watercourse crossing WC-8 to facilitate two-way traffic through the road segment to the east (Road Point RP-4).

4.0 Proposed Road Construction

An existing ranch road is proposed to be upgraded to allow a transportation connection to the adjacent parcel to the northwest (that is, connecting APN 315-211-04 with APN 315-222-03). The existing road will require some realignment and improvement, as the existing road encounters mapped wetland areas and exceeds minimum gradient (>16%) in several places. Field review of the existing road indicates that it is feasible to improve it such that environmental impacts are sufficiently mitigated and gradients are reduced to acceptable levels.

The existing and proposed roads are shown on Figure 4. From the main access road on APN 315-211-04, the proposed connector road makes an initial climb in a straight segment with a gradient in excess of 20%. This segment will require realignment to reduce this gradient to 16%; a series of conceptual switchbacks is shown on Figure 4. The road proceeds to the northwest adjacent to an existing pond and a narrow swale, following the edge of the 100-foot wetland buffer. The road in this area appears to follow the optimal route; therefore, we recommend developing drainage control to divert runoff to the east, away from the adjacent wetlands.

The remaining portion of the proposed connector road (essentially the northern half) will require realignment to avoid mapped wetlands and to reduce gradient through several short steep pitches. The proposed realigned route is shown on Figure 4.

The proposed connector road is not associated with watercourse crossings. As with the remainder of the roads at the site, it will be necessary to surface the road with suitable aggregate to reduce erosion potential and to allow all-season use (see recommendations above relative to specifications for rock surfacing).

5.0 Conclusions

Based on our field reconnaissance, it appears that the subject access road can accommodate the proposed industrial use, assuming the improvements outlined above are followed. For the work described herein, we recommend working with an earthwork contractor experienced in rural road building. They will be familiar with the objectives presented in this report, and will be familiar with nearby sources for materials that may help reduce the overall cost of trucking and so on.

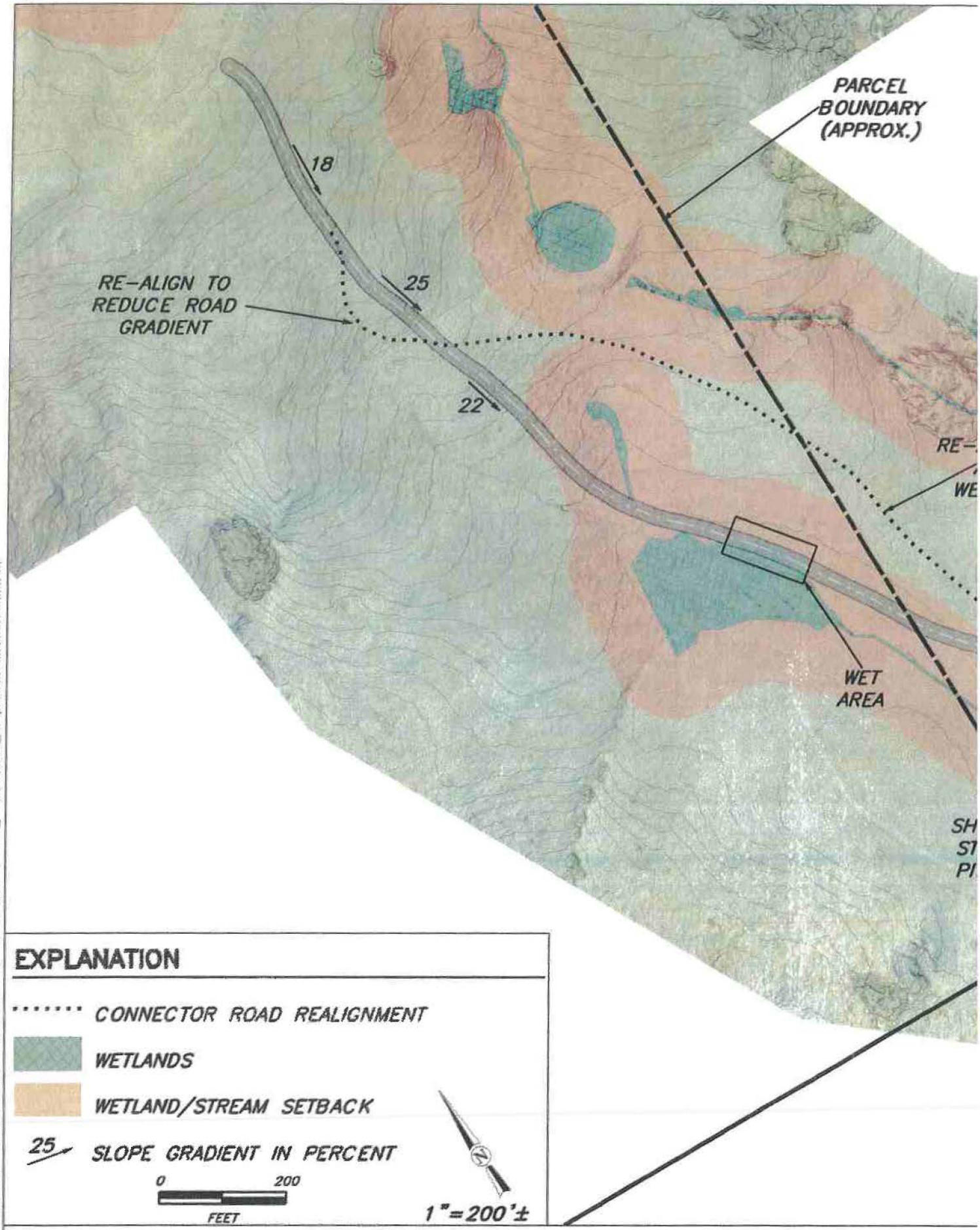
The primary upgrade to the road at the site will be the addition of rock surfacing. The type of material used for this purpose may depend on the proximity to available rock sources. The material should be durable, and should ideally contain a mixture of angular rock clasts. We are available to help identify suitable material, as appropriate. Minor drainage upgrades will be required to reduce erosion potential and to facilitate distribution of runoff to suitable outlets.

The proposed upgrade of the existing ranch road connecting the subject parcel to the adjacent parcel is feasible, but will require some improvement and realignment to meet necessary grades and to minimize impacts to wetland resources. The proposed connector road will need to be rock surfaced as well.

6.0 Reference Cited

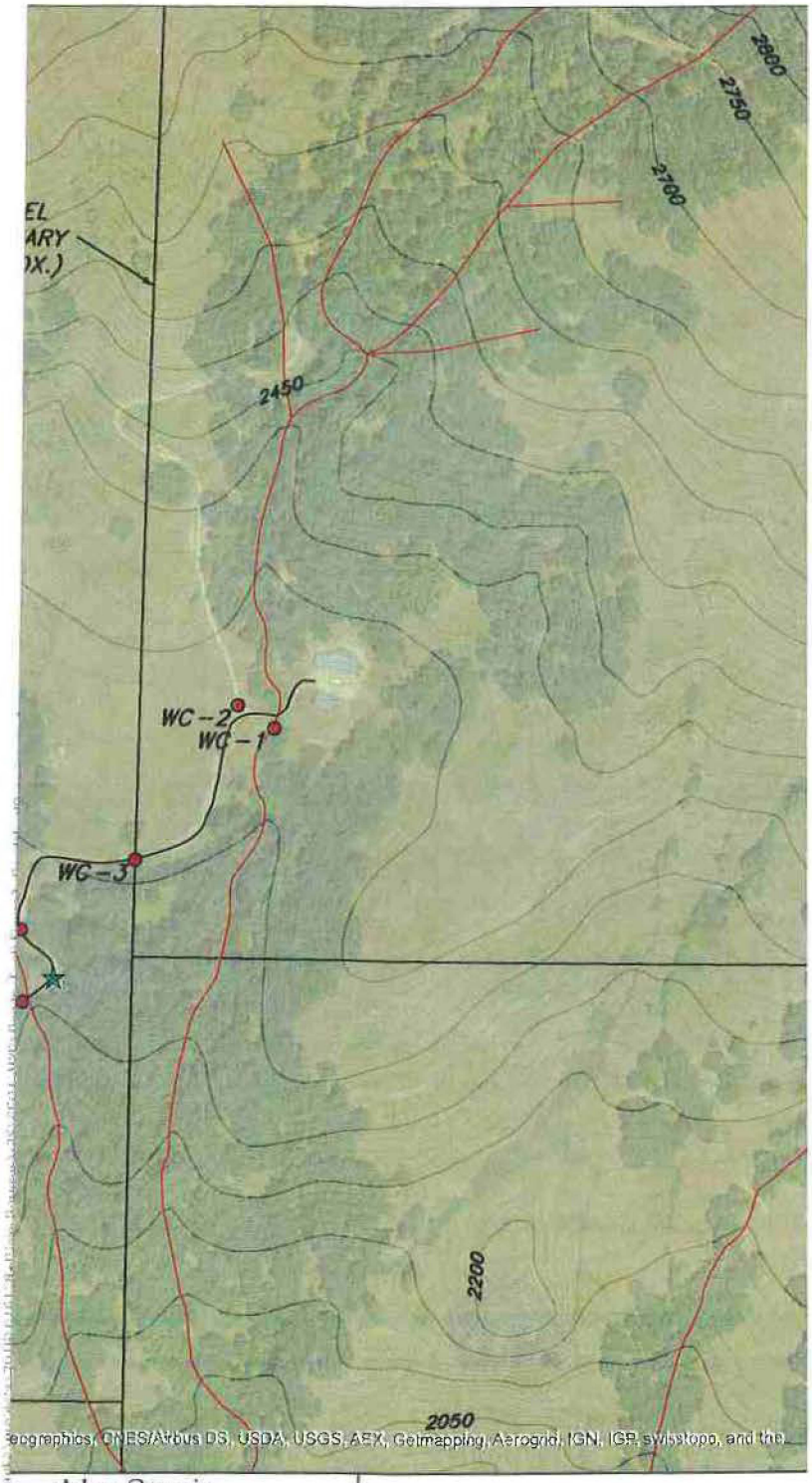
American Association of State Highway and Transportation Officials. *(NR). Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT ≤400).* NR:AASHTO.

County of Humboldt. (NR). *Road Evaluation Report.* Eureka, CA:County of Humboldt.


PARCEL BOUNDARY (APPROX.)
18
25
22
RE-ALIGN TO REDUCE ROAD GRADIENT
WET AREA
EXPLANATION
CONNECTOR ROAD REALIGNMENT
WETLANDS
WETLAND/STREAM SETBACK
25 SLOPE GRADIENT IN PERCENT
0
200
FEET
1"=200'±

A

County Road Evaluation Report Forms (Parts A and B)



Adesa Organic Road Evaluation eek, Humboldt County, California		Site Overview Map SHN 01.6178.400
016	Figure2_RoadsEvalOverview	Figure 2

PART B: Only complete Part B if Box 3 is checked in Part A. *Part B is to be completed by a Civil Engineer licensed by the State of California. Complete a separate form for each road.*

Road Name: Adesa access road Date Inspected: 9/8/16 APN: 315-211-04 315-211-03

From Road: Maple Creek Road (PM 0.0)

To ~~Road:~~ barn complex (PM 1.1)

Planning & Building Department Case/File No.: _____

1. What is the Average Daily Traffic of the road?

   ADT: <10 Date(s) measured: 9/8/16

   Method used to measure ADT: ☒ Counters ☐ Estimated using ITE *Trip Generation* Book

   Is the ADT of the road less than 400? ☒ Yes ☐ No (<<400 ADT)

   If **YES**, then the road is considered very low volume and shall comply with the design standards outlined in the American Association of State Highway and Transportation Officials (AASHTO) *Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT ≤400). Complete sections 2 and 3 below.*

   If **NO**, then the road shall be reviewed per the applicable policies for the design of local roads and streets presented in AASHTO policy on Geometric Design of Highways and Streets, commonly known as the Green Book. Complete section 3 below.

2. Identify site specific safety problems with the road that include, but are not limited to: (Refer to Chapter 3 in AASHTO *Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT ≤400)* for guidance.)

   A. Pattern of curve related crashes.
   Check one: ☒ No. ☐ Yes, see attached sheet for PM locations.

   B. Physical evidence of curve problems such as skid marks, scarred trees, or scarred utility poles
   Check one: ☒ No. ☐ Yes, see attached sheet for PM locations.

   C. Substantial edge rutting or encroachment.
   Check one: ☒ No. ☐ Yes, see attached sheet for PM locations.

   D. History of complaints from residents or law enforcement.
   Check one: ☒ No. ☐ Yes (☐ check if written documentation is attached)

   E. Measured or known speed substantially higher than the design speed of the road (20+ MPH higher)
   Check one: ☒ No. ☐ Yes.

   F. Need for turn-outs.
   Check one: ☐ No. ☒ Yes, see attached sheet for PM locations.

3. Conclusions/Recommendations per AASHTO. Check one:

   ☐ The roadway can accommodate increased traffic from the proposed use.

   ☒ The roadway can accommodate increased traffic from the proposed use if the recommendations on the attached report are done. (☐ check if a *Neighborhood Traffic Management Plan* is also required and is attached.)

   ☐ The roadway cannot accommodate increased traffic from the proposed use. It is not possible to address increased traffic.

A map showing the location and limits of the road being evaluated in PART B is attached. The statements in PART B are true and correct and have been made by me after personally evaluating the road.

Signature of Civil Engineer

12/7/16
Date

REGISTERED PROFESSIONAL ENGINEER
JARED S. O'BARR
76125
CIVIL
STATE OF CALIFORNIA
12/7/16

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. xxxxxxx

Page 1 of 1

Owner's Well Number

Date Work Began 03/09/2017 Date Work Ended 03/12/2017

Local Permit Agency Humboldt County Division of Environmental Health

Permit Number Permit Date

DWR Use Only – Do Not Fill In

State Well Number/Site Number

N W

Latitude Longitude

APN/TRS/Other

Geologic Log

Orientation ○ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Drilling Fluid

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	05	Black Topsoil
05	10	Black Topsoil
10	15	Brown Clay Silt
15	20	Brown Clay Silt
20	25	Grey Clay Silt
25	30	Grey Clay Silt
30	35	Grey Clay Silt
35	40	Grey Sand
40	45	Grey Sand
45	50	Brown Sandstone
50	55	Brown Sandstone
55	60	Brown Sandstone
60	65	Brown Sandstone
65	70	Grey Sandstone
70	75	Grey Sandstone
75	80	Grey Sandstone

Total Depth of Boring 80 Feet

Total Depth of Completed Well 80 Feet

Well Owner

Name AMT, LLC

Mailing Address 23550 MAPLE CREEK RD

City KORBEL State Ca Zip 95550

Well Location

Address 23550 MAPLE CREEK RD

City KORBEL County Humboldt

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

Datum Dec. Lat. Dec. Long.

APN Book 315 Page 211 Parcel 004

Township Range Section

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North

West East

South

Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

- ◉ New Well
- ○ Modification/Repair
  - ○ Deepen
  - ○ Other
- ○ Destroy

Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

- ○ Water Supply
  - ☐ Domestic ☐ Public
  - ☐ Irrigation ☐ Industrial
- ○ Cathodic Protection
- ○ Dewatering
- ○ Heat Exchange
- ○ Injection
- ○ Monitoring
- ○ Remediation
- ○ Sparging
- ○ Test Well
- ○ Vapor Extraction
- ○ Other

Water Level and Yield of Completed Well

Depth to first water 75 (Feet below surface)

Depth to Static Water Level 32 (Feet) Date Measured 03/11/2017

Estimated Yield * 8 (GPM) Test Type Air Lift

Test Length 4.0 (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size If Any (Inches)
	80	6"		Low Carbon Steel	1/4"	6 5/8"		

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
	80	Bentonite	Bentonite Chips

Attachments

- ☐ Geologic Log
- ☐ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analyses
- ☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name 3D Drilling (Person, Firm or Corporation)

P.O. Box 1285 (Address) Rock Springs (City) WY (State) 82902 (Zip)

Signed (C-57 Licensed Water Well Contractor) 03/12/2017 (Date Signed) 10015033 (C-57 License Number)

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ATTACHMENT B

Biological Studies

Natural Resources Assessment

Applies to:
Adesa Organic LLC
Deva Amrita LLC

AMT, LLC

Korbel, California





Prepared for:

AMT, LLC

SHN
Engineers & Geologists

RECEIVED
FEB 26 2018
Humboldt County
Cannabis Svcs.

December 2017

016178.500

Reference: 016178.500

Natural Resources Assessment

AMT, LLC
Korbel, California

Prepared for:

AMT, LLC

Applies to:
Adesa Organic LLC
Deva Amrita LLC

Prepared by:

Engineers & Geologists
1062 G St., Ste. I
Arcata, CA 95521-5800
707-822-5785

December 2017

QA/QC:SEC

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Abbreviations and Acronyms

cm	centimeters
ft^2	square feet
m	meters
km	kilometers
ACOE	Army Corps of Engineers
APN	Assessor's parcel number
BIOS	Biogeographical Information and Observation System
CAL FIRE	California Department of Forestry and Fire Protection
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
CMMLUO	Commercial Medical Marijuana Land Use Ordinance
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	Environmental Protection Agency
ESU	evolutionarily significant unit/species status
FESA	Federal Endangered Species Act
FP	fully protected species status
FRAP	Fire and Resource Assessment Program
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	species heritage rank
GIS	Geographic Information System
IPaC	Information for Planning and Conservation
LSA	Lake and Streambed Alteration Agreement
MBTA	Migratory Bird Treaty Act
NCCP	Natural Community Conservation Planning Act
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NPPA	Native Plant Protection Act
NRA	natural resource assessment
OHWM	ordinary high water mark
PT	proposed threatened species status
R	Rare
RWQCB	Regional Water Quality Control Boards
SHN	SHN Engineers and Geologists
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
US	United States
USC	US Code
USDA	United States Department of Agriculture
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 Engineers and Geologists has conducted site investigations, literature reviews, and assessments to determine biological resources present in relation to the AMT, LLC project site in the vicinity of Maple Creek, California. The project is proposing site development for agriculture-related activities. 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 Mad River Buttes 7.5-minute United States Geological Survey (USGS), Quadrangle in an unincorporated area of Humboldt County, California (Figure 1). The project occurs in Sections 34 and 35 of Township 04 North, Range 03 East; and Sections 02 and 03 in Township 03 North, Range 03 East. The site is approximately 6.5 air miles southeast of the community of Maple Creek. The proposed project site is located on Assessor's parcel numbers (APNs) 315-145-002, 315-211-003, 315-211-004, 315-146-018, and 315-222-003, with a street address of 23333 Maple Creek Road, Korbel, California 95550.

1.2 Site Description

Proposed project activities occur on lands primarily used for cattle grazing. The study area (Figure 2) is largely composed of grasslands with inclusions of wooded riparian areas, oak woodlands, and coniferous forest. There is a limited number of existing structures within the study area, which primarily support ranching activities and a residence.

2.0 Methodology

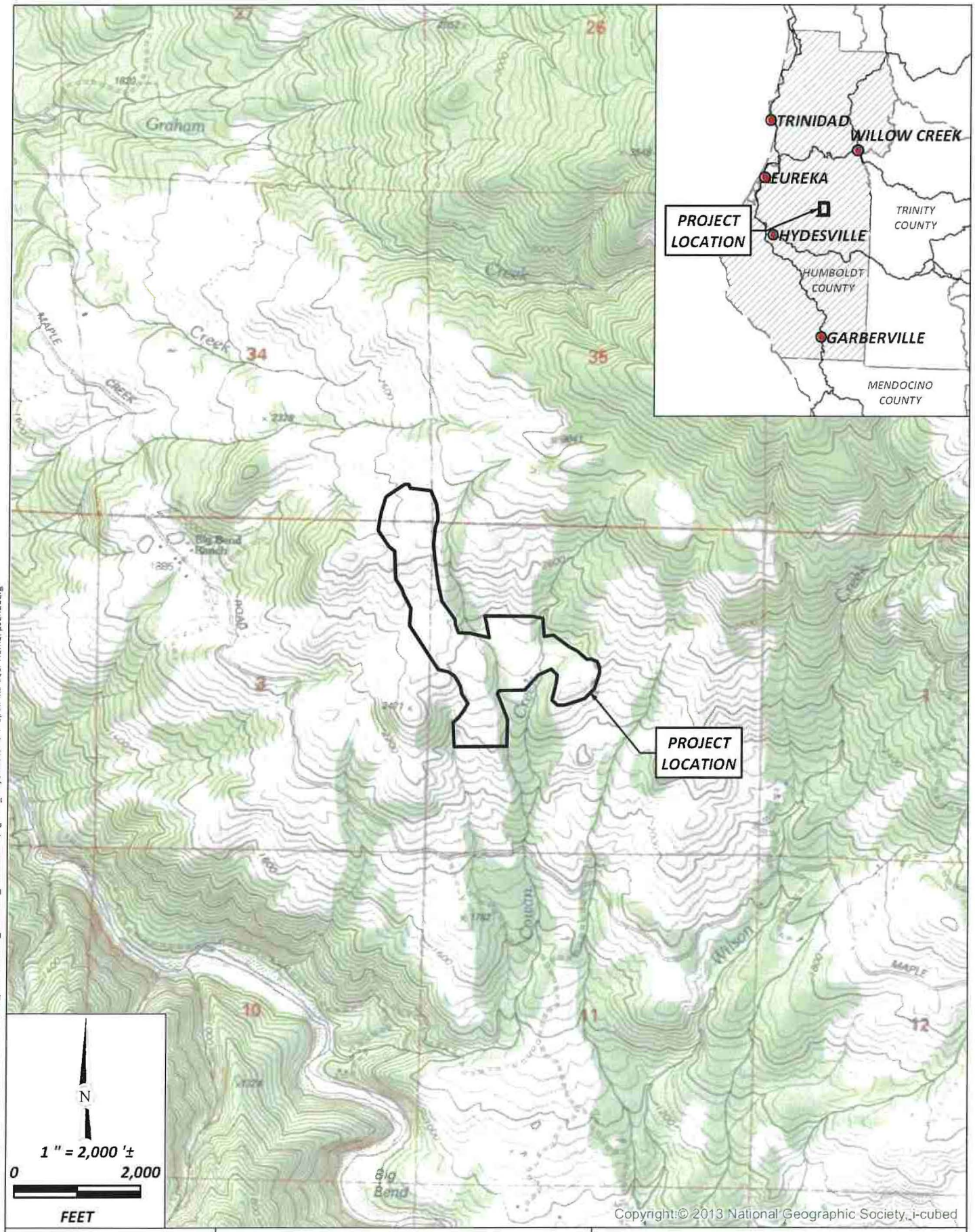
2.1 Review of Existing Data

This NRA includes a review of existing data and information related to special status species of plants, animals, 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:

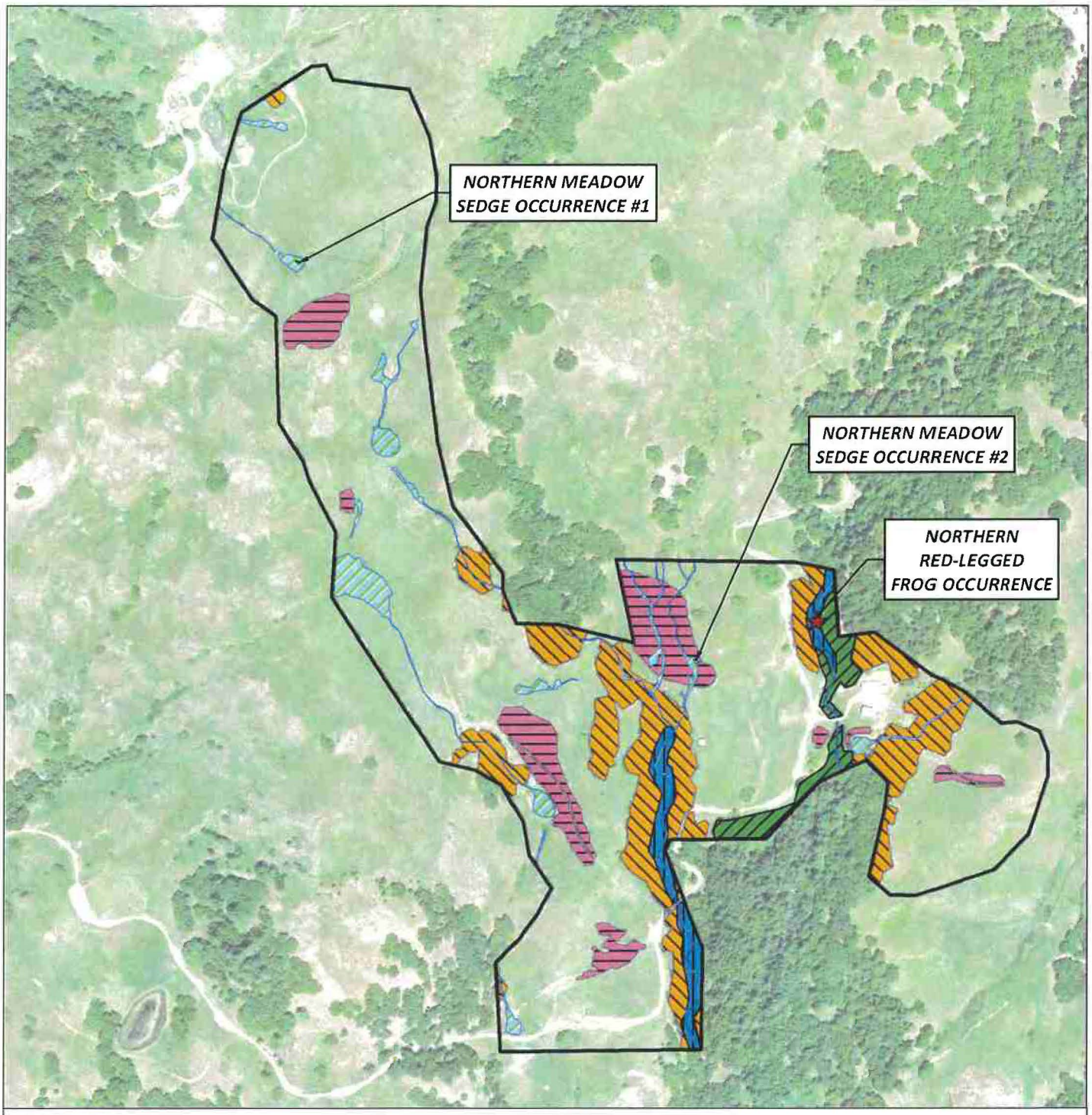
- California Natural Diversity Database (CNDDB) query for the Mad River Buttes and surrounding USGS 7.5 minute topographic quadrangles (Board Camp Mtn., Grouse Mtn., Iaqua Buttes, Korbel, Maple Creek, Owl Creek, Showers Mtn., and Yager Junction) (CDFW, 2017a)
- Biogeographical Information and Observation System's Rarefind[1] database (BIOS; CDFW, 2017b)

[1] Rarefind is a "positive detection" database. The absence of data does not imply absence of special status species.



Path: \\eureka\projects\2016\016178-AMT\GIS\PROJ_MXD\Natural_Resource_Assessment\Figure1_ProjectLocationMap1.mxd User Name: psundberg

Consulting Engineers & Geologists, Inc.	AMT Natural Resource Assesment Korbel, Humboldt County, California	Project Location Map SHN 016178.500
December 2017	Figure1_ProjectLocationMap1	Figure 1



EXPLANATION

- NORTHERN RED-LEGGED FROG
- STUDY AREA
- NORTHERN MEADOW SEDGE
- OHWM
- WETLANDS
- CALIFORNIA BAY FOREST
- CALIFORNIA OAT GRASS PRAIRIE
- DOUGLAS FIR FOREST
- OREGON WHITE OAK WOODLAND

N

1"=600'±

0 600

FEET

IMAGE SOURCE: GOOGLE EARTH; DATED 5/26/2016

Path: \\eureka\projects\2016\016178-AMT\GIS\PROJ_MXD\Natural_Resource_Assessment\Figure2_Overview.mxdUser Name: psundberg

SHN Consulting Engineers & Geologists, Inc.	AMT Natural Resource Assesment Korbel, Humboldt County, California	Overview of Special Status Biological Resources Present SHN 016178.500
	December 2017 | Figure2_Overview	Figure 2

- Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2017) query for a list of all plant species reported for project area, and surrounding USGS. 7.5 minute topographic quadrangles
- Special Vascular Plants, Bryophytes, and Lichens of California List (CDFW, 2017c)
- Special Animals of California List (CDFW, 2017d)
- 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 the proposed project and/or may be affected by the proposed project (Appendix 1; USFWS, 2017a)
- USFWS Threatened and Endangered Species Active Critical Habitat Report Geographic Information System (GIS) database (USFWS, 2017b)
- California Flora Database (Calfora, 2017)
- California Consortium of Herbaria (CCH, 2016)
- Preliminary Jurisdictional Wetland and Other Waters Delineation. Adesa Organic, LLC and Deva Amrita, LLC. Korbel, California." (SHN, 2016)
- California Department of Forestry and Fire Protection (CAL FIRE) Fire and Resource Assessment Program (FRAP) vegetation land cover dataset, "Fveg15" (CAL FIRE, 2015).
- eBird Database (Cornell Lab of Ornithology, 2017)
- California Wildlife Habitat Relationships (CDFW, 2017f)

From the sources listed above, a list of potential target special status species for the study area was compiled. Appendix 2 and Appendix 3 include plant and animal species, respectively, reported by the CNDDB and USFWS, and species listed in the California Native Plant Society (CNPS) inventory of rare plants.

Prior to the field investigation, a review of all plant species reported from the project area was performed by querying the "Consortium of California Herbaria" database records (CCH, 2016) and "Calflora" observations (Calflora, 2016).

2.2 Coordination with Permitting and Regulatory Agencies

SHN staff conducted a preliminary site visit with Kalyn Bocast and David Manthorne of California Department of Fish and wildlife (CDFW), on August 10, 2017. The primary focus of this site visit was to assess proposed water storage pond locations and their adjacency to water courses.

2.3 Field Observations and Studies

A total of 98 hours of field observations were made within the 107-acre study area (Figure 2) during the following dates:

- August 2, 2016
- September 29, 2016
- September 30, 2016
- October 7, 2016
- April 14, 2017
- June 1, 2017
- August 10, 2017

The site visits included 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. Nomenclature for special status animals conforms to the CDFW Animals List (CDFW, 2017d). Vegetation alliances conform to the Vegetation Classification and Mapping Program's (VegCAMP) Natural Communities List (CDFW, 2010) and *A Manual of California Vegetation,* (CNPS, 2016). Botanical nomenclature of species in this assessment follows the *Jepson Manual* (Baldwin et al., 2012) and subsequent online revisions (UCB, 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). Habitat assessments were conducted for animal species during site visits. A list of all animal species observed while conducting habitat assessment is presented in Appendix 5.

Site photographs from the site visits are included in Appendix 6.

Additionally, a wetland delineation was performed within the study area (Appendix 7; SHN, 2016).

3.0 Environmental Setting

The projects are situated between 2,200 and 2,600 feet elevation above mean sea level on predominantly south-facing slopes in the Cowan Creek drainage system. Cowan Creek flows into the Mad River approximately 1 mile south of the project locations. Land uses in the vicinity are primarily cattle grazing and timber production with scattered residences associated with these land uses.

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. Snow fall typically occurs a few times per year at this elevation, but often melts within a few days.

3.1 Geologic and Soil Composition

The site is set in the coastal mountains approximately 22 miles east of the Pacific Ocean coast. It occurs within a Franciscan geologic complex, composed of variably deformed and metamorphosed graywacke,

mudstone, and chert (USGS, 2007). The soils in the study area have a United States Department of Agriculture (USDA) classification of Elkcamp-Airstrip-Highyork complex, 9-30 percent slope (4435) in the open areas, and the Pasturerock-Coyoterock-Maneze complex, 15-50 percent slopes 4426 (485) in the treed drainages (NRCS, 2016).

The closest area of mapped ultramafic parent material is approximately 11 miles northeast of the project area in the Titlow Hill vicinity (USGS, 2007). The Horse Mountain/Titlow Hill ultramafic complex was formed in the late Proterozoic to early Jurassic period and is characterized as a serpentinite-matrix mélange containing blocks and slabs of ultramafic and other rocks. Ultramafic materials at Brannan Mountain are composed of mostly serpentine with minor components of peridotite, serpentinite, and pyroxenite. Ultramafic rocks and/or soils were not encountered within the study area.

3.2 Vegetation

In cooperation with CDFW's VegCamp program, the CAL FIRE FRAP compiled the best available land cover data available for California into a single comprehensive statewide data set, commonly referred to as "Fveg15" (CAL FIRE, 2015). Fveg version 15_1 has mapped the study area as being composed of 84 percent annual grassland, 5 percent montane hardwood-conifer, 5 percent montane hardwood, 4 percent Douglas fir, and 2 percent coastal oak woodland. Plant species observed during fieldwork are presented in Appendix 4.

3.3 Wildlife Habitats

The California Wildlife Habitat Relationships System database reports the following habitat types within the project vicinity: Perennial Grassland, Annual Grassland, Wet Meadow, Lacustrine, Freshwater Emergent Wetland, Riverine, Montane Riparian, Redwood, Douglas fir, Montane Hardwood, Montane Hardwood-Conifer, and Coastal Oak Woodland (CDFW, 2017f). Common wildlife species expected within the study area are those typically associated with grasslands, oak woodlands, and mixed coniferous forests of northwestern California. Animals species observed during fieldwork are presented in Appendix 5. Other wildlife species are likely to inhabit the surrounding area and it is expected that there are many other bird, mammal, and amphibian species that might use the study area, if only transitionally.

Wildlife movement includes migration (that is, usually one-way per season), inter-population movement (that is, long-term genetic flow), and small travel pathways (that is, daily movement corridors within an animal's territory). Although small travel pathways usually facilitate movement for daily home range activities, such as, foraging or escape from predators, they also provide connection between outlying populations and the main corridor, permitting an increase in gene flow among populations.

These linkages among habitat types can extend for miles from primary habitat areas and occur on a large scale throughout California. Habitat linkages facilitate movement between populations located in discrete areas and populations located within larger habitat areas. The mosaic of habitats found within a large-scale landscape results in wildlife populations that consist of discrete sub-populations constituting a large single population, which is often referred to as a meta-population. Even where patches of pristine habitat are fragmented, such as occurs with coastal scrub, the movement between wildlife populations is facilitated through habitat linkages, migration corridors, and movement corridors. Depending on the condition of the

corridor, genetic flow between populations may be high in frequency, thus allowing high genetic diversity within the population, or may be low in frequency. Low-frequency genetic flow may potentially lead to complete isolation and, if pressures are strong, potential extinction (Whitaker, 1998).

The study area (Figure 2) is relatively undeveloped and the land uses are cattle grazing and timber production. With the limited development within the vicinity, it is likely that wildlife uses nearly all portions of study area as movement corridors. Most of the wildlife movement corridors are expected to be concentrated on nearby perennial drainages.

3.4 Offsite Conditions

The habitats adjacent to the project areas are a mixture of high quality mixed coniferous forests in timber management and open grasslands used for cattle grazing. Existing habitat quality within the study area is consistent with adjacent areas.

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 US Code (USC) 1341) of the Clean Water Act (CWA), as amended, the Army Corps of Engineers (ACOE) 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 ACOE (EPA, 2002). A permit from the ACOE 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 ACOE 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"(ACOE Environmental Laboratory, 1987). In other words, the ACOE defines wetlands by the presence of all three wetland indicators: hydrophytic vegetation, hydric soils, and wetlands hydrology.

Waters of the US 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 US Environmental Protection Agency (EPA) and ACOE published a memorandum entitled Clean Water Act Jurisdiction (EPA/ACOE, 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 ACOE 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 ACOE.

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 US 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 (RWQCB). 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 or 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), with a view to 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 ACOE under CWA Section 404 is required for the construction of the proposed project. ACOE 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). The migratory bird nesting season is generally considered to be between March 15 and August 1 within the study region.

4.2 State Laws

4.2.1 Porter-Cologne Water Quality 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 Act (SWRCB, 1969). Waters of the State are defined by the Porter-Cologne 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 ACOE

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 State regulations included 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 whose populations are significantly reduced from historical levels, occur in limited distribution, or are otherwise rare or threatened with extinction. This information is published in the Inventory of Rare and Endangered Plants of California (CNPS, 2017). 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 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 VegCAMP programs) 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, Appendix G).

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, 2017e). Any activity that will do one or more of the following generally require a Lake and Streambed Alteration Agreement (LSA):

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.

SSCs 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 and known threats to their persistence currently exist. 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.

Appendix 3 includes potentially occurring federal and state listed species and SSC animals that may occur in the project area.

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.

4.2.9 State Water Resources Control Board Cannabis Cultivation Policy

The purpose of the Cannabis Cultivation Policy is to ensure that the diversion of water and discharge of waste associated with cannabis cultivation does not have a negative impact on water quality, aquatic habitat, riparian habitat, wetlands, and springs. Cannabis cultivation legislation enacted California Water Code section 13149, which directs the SWRCB, in consultation with CDFW, to adopt interim and long-term principles and guidelines for the diversion and use of water for cannabis cultivation in areas where cannabis cultivation may have the potential to have a substantial effect on instream flows.

4.3 Other Statutes, Codes, and Policies

4.3.1 Humboldt County Streamside Management Area Ordinance

The Humboldt County General Plan was adopted October 23, 2017, and includes policies regarding critical habitats, sensitive habitats, streamside management areas (SMA), 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.

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.

4.3.2 County of Humboldt Commercial Medical Marijuana Land Use Ordinance

On January 26, 2016, the Humboldt County Board of Supervisors adopted Ordinance Number 2544, the Commercial Medical Marijuana Land Use Ordinance (CMMLUO)—Phase IV, adding section 313-55.4 et seq. to Title III, Division I, Chapter 3, Section B, Part 1 (Coastal Zoning Regulations), and section 314-55.4 et seq. of Title III, Division 1, Chapter 4, Section B, Part I (Inland Zoning Regulations) to the Humboldt County Code. On September 13, 2016, the County Board of Supervisors adopted ordinance number 2559, which clarified and corrected the CMMLUO. The CMMLUO ordinance established land use regulations concerning commercial cultivation, processing, manufacturing, and distribution of cannabis for medical use within the County of Humboldt in order to limit and control such cannabis activities in coordination with the State of California in the implementation of the Medical Marijuana Regulation and Safety Act.

Sections 313-55.4.11 and 314-55-4.11 establish performance standards for all CMMLUO cultivation and processing operations. In particular, Sections 313-55.4.11 and 314-55.4.11 specify standards for project-related noise produced by a generator used for commercial cannabis cultivation. Section 55.4.11 addresses noise effects of generators on humans and wildlife. The noise effects on wildlife are focused on avoiding impacts to marbled murrelet (*Brachyramphus marmoratus*) and northern spotted owl (*Strix occidentalis caurina*) species. The section provides that, "Where applicable, sound levels must also show that they will not result in harassment of Marbled Murrelet and Northern Spotted Owl species, when generator use is to occur in the vicinity of potential habitat."

The County has established a simplified threshold for evaluating noise impacts to marbled murrelet and northern spotted owl (Humboldt County, 2016). Project-related noise impacts are assumed to be less than significant if noise levels are 50 decibels or less at 100 feet distance or the edge of the nearest habitat, whichever is closer. Project generated sound combined with ambient conditions in excess of 90 decibels warrants further analysis.

5.0 Results

From the review of existing data (see Methods section), lists of potentially occurring special status plant and animal species for the study area were compiled. Appendix 2 includes all plant species reported from the queries, their preferred habitat, and whether there is suitable habitat present within the study area for the species. Appendix 3 includes all animal 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.

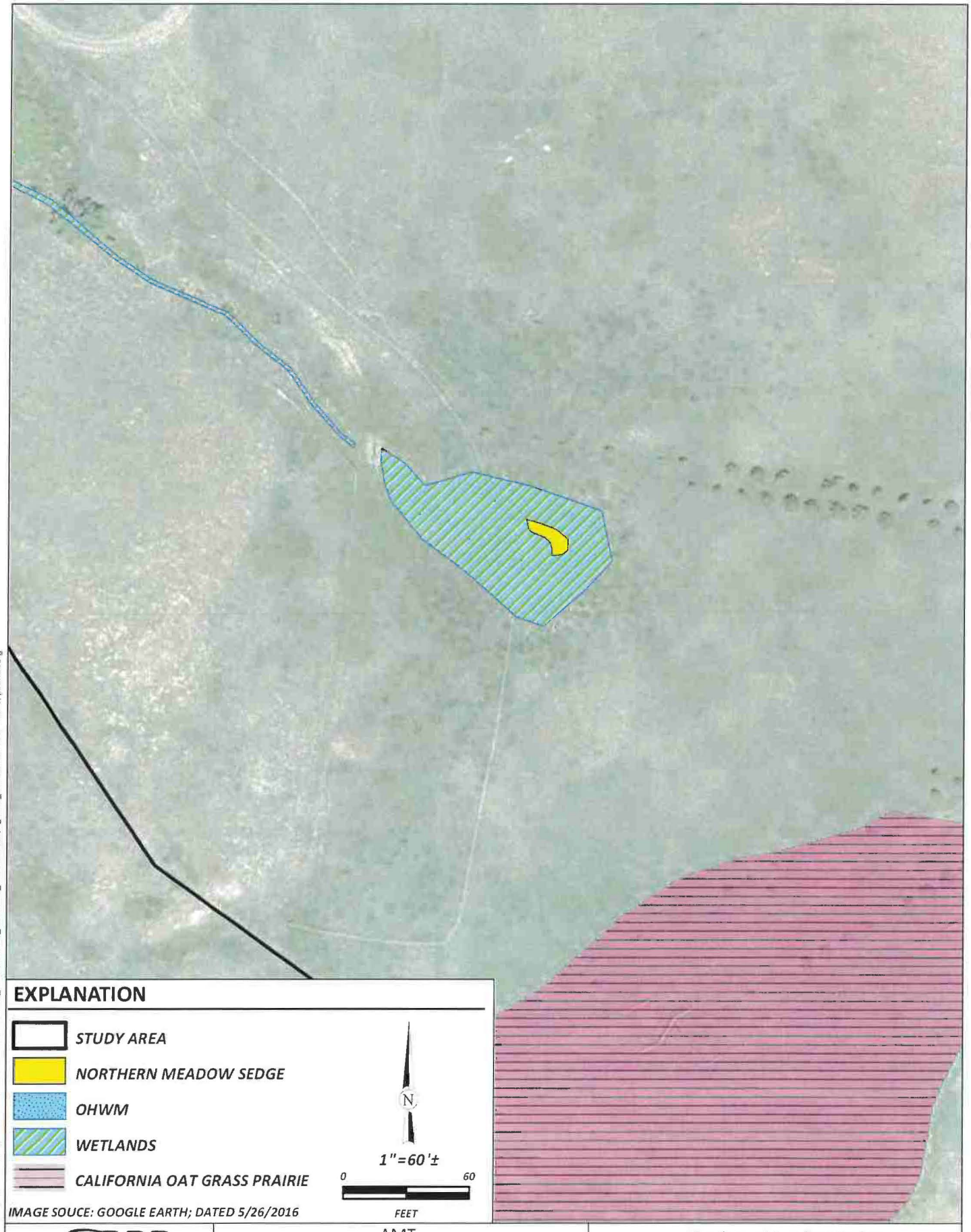
Each species was evaluated for its potential to occur in the study area according to the following criteria:

- **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

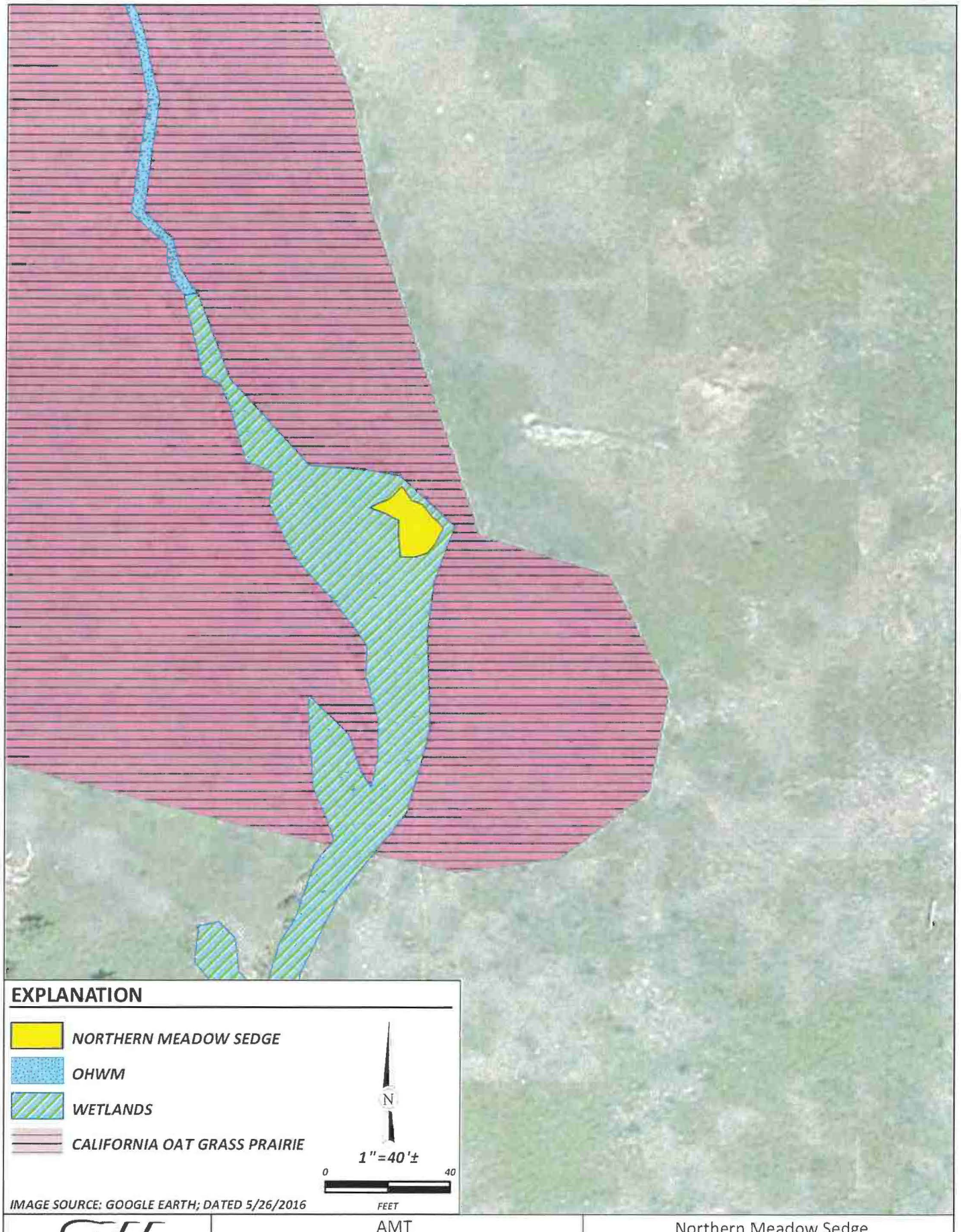
Based on a review for special status plant species, 62 special status plant species have been reported from the region consisting of the study area's quadrangle and surrounding quadrangles. Of the special status plant species reported in the region, 33 plant species are considered to have a low potential to occur within the study area and 29 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. Locations of special status plant species observed within the project area are presented in Figures 2-5.

Rattan's milk-vetch (*Astragalus rattanii* var. *rattanii*) is a perennial herb in the Fabaceae family. It is neither state nor federally listed, but has a CRPR of 4.3 and heritage ranks of G4T4/S4. Reported habitats include chaparral, cismontane woodland, and lower montane coniferous forest. It occurs in open grassy hillsides, gravelly flats in the valleys, and gravel bars of stream beds, ranging in



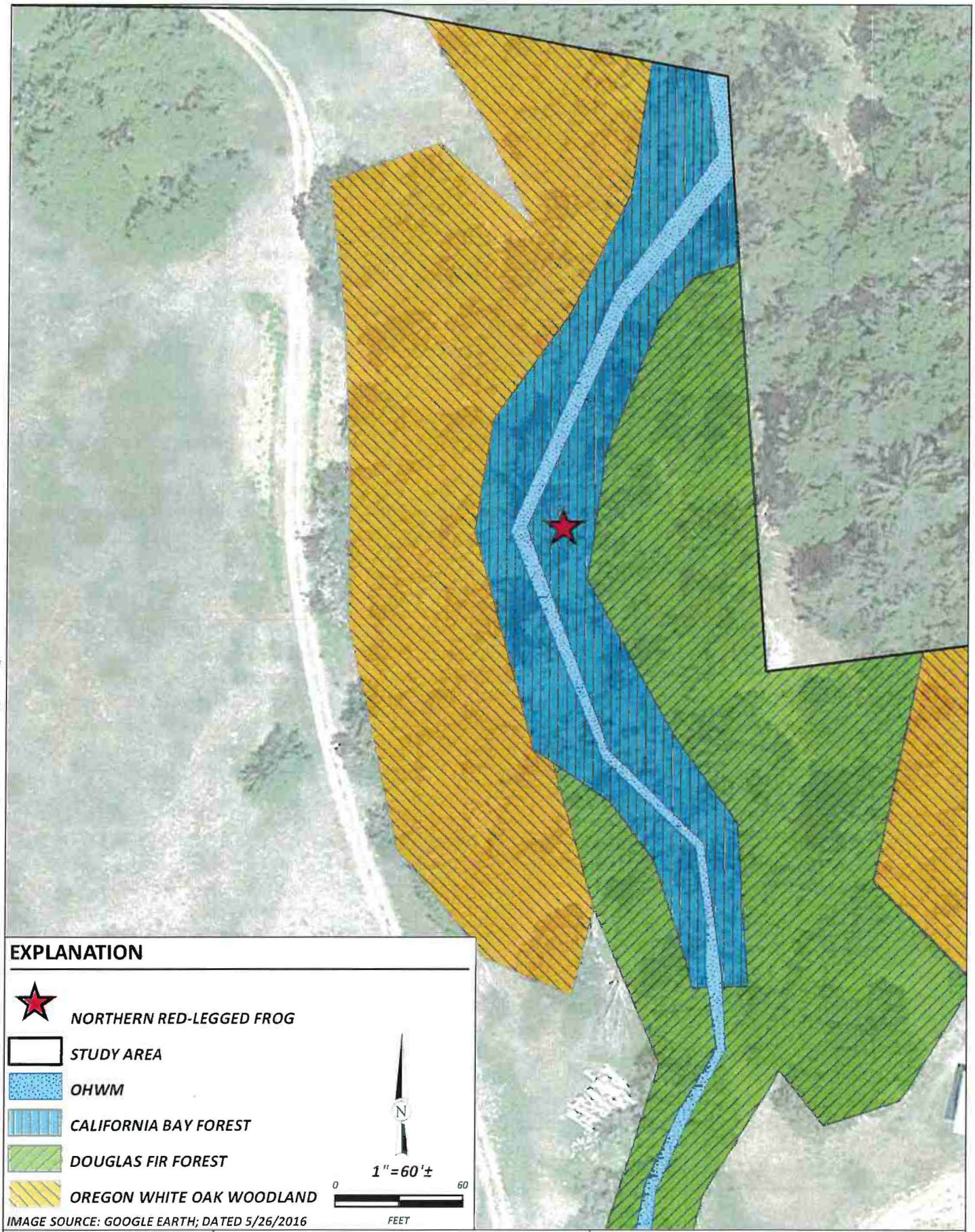
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Consulting Engineers & Geologists, Inc.	AMT Natural Resource Assesment Korbel, Humboldt County, California	Northern Meadow Sedge Occurrence #1 SHN 016178.500
	December 2017 | Figure3_NMS1	Figure 3



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SHN Consulting Engineers & Geologists, Inc.	AMT Natural Resource Assesment Korbel, Humboldt County, California	Northern Meadow Sedge Occurrence #2 SHN 016178.500
	December 2017 | Figure4_NMS2	Figure 4



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Consulting Engineers & Geologists, Inc.	AMT Natural Resource Assesment Korbel, Humboldt County, California	Northern Red-Legged Frog Occurrence SHN 016178.500
	December 2017 | Figure5_NRLF	Figure 5

elevation from 30 to 825 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.

Bald Mountain milk-vetch (*Astragalus umbraticus*) is a perennial herb in the Fabaceae family. It is neither state nor federally listed, but has a CRPR of 2B.3 heritage ranks of G3/S2. Reported habitats include cismontane woodland, lower montane coniferous forests, cismontane woodlands, and lower montane coniferous forest. It occurs in dry open oak and pine woodlands, sometimes on roadsides, ranging in elevation from 210 to 1,220 meters above sea-level. Within the nine-quad search, there are six Rarefind occurrences, with the closest being 5.8 miles from the study area; the most recent reported observation date within the nine quads for this taxon was 2016. Although suitable habitat may exist within the project area for this species, it was not detected.

Northern clustered sedge (*Carex arcta*) is a perennial herb in the Cyperaceae family. It is neither state nor federally listed, but has a CRPR of 2B.2 heritage ranks of G5/S1. Reported habitats include bogs and fens, north coast coniferous forests, and wetlands. It occurs in mesic sites, ranging in elevation from 60-1,405 meters above sea-level. Within the nine-quad search, there are six Rarefind occurrences, with the closest being 5.1 miles from the study area; the most recent reported observation date within the nine quads for this taxon was 2014. Although suitable habitat may exist within the project area for this species, it was not detected.

Northern meadow sedge (*Carex praticola*) is a perennial herb in the Cyperaceae family. It is neither state nor federally listed, but has a CRPR of 2B.2 and heritage ranks of G5/S2. Reported habitats include meadows and seeps, ranging from 15 to 3,200 meters above sea-level. Within the nine-quad search, there is one Rarefind occurrence 13.6 miles from the study area; the most recent reported observation date within the nine quads for this taxon was 1982. This species is present within the study area in two locations. One occurrence exists in the northern portion of the study area within an approximately 146 square foot (ft^2) area contained within a larger wetland complex (Figure 3). The second occurrence exists in the central portion of the study area within an approximately 241 ft^2 area, also contained within a larger wetland complex (Figure 4; Photo 1 in Appendix 6).

Tracy's collomia (*Collomia tracyi*) is an annual herb in the Polemoniaceae family. It is neither state nor federally listed, but has a CRPR of 4.3 and heritage ranks of G4/S4. Reported habitats include lower montane coniferous forests. It occurs on rock outcrops (sometimes on serpentine), ranging in elevation from 300 to 2,100 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.

Mountain lady's-slipper (*Cypripedium montanum*) is a perennial rhizomatous herb in the Orchidaceae family. It is neither state nor federally listed, but has a CRPR of 4.2 and heritage ranks of G4/S4. Reported habitats include lower montane coniferous forest, broadleafed upland forest, cismontane woodland, and north coast coniferous forest. It occurs on dry, undisturbed slopes ranging from 185 to 2,225 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.

Humboldt County fuchsia (*Epilobium septentrionale*) is a perennial herb in the Onagraceae family. It is neither state nor federally listed, but has a CRPR of 4.3 and heritage ranks of G4/S4. Reported habitats include broadleafed upland forests and north coast coniferous forests. It occurs on dry, sandy, or rocky ledges, ranging in elevation from 45 to 1,800 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.

Robust daisy (*Erigeron robustior*) is a perennial herb in the Asteraceae family. It is neither state nor federally listed, but has a CRPR of 4.3 and heritage ranks of G3/S3. Reported habitats include lower montane coniferous forests, meadows, and seeps. It occurs in glades and meadows, sometimes on serpentine substrates, ranging in elevation from 200 to 610 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.

Coast fawn lily (*Erythronium revolutum*) is a perennial bulbiferous herb in the Liliaceae family. It is neither state nor federally listed, but has a CRPR of 2B.2 and heritage ranks of G4G5/S3. Reported habitats include bogs/fens, broadleafed upland forests, north coast coniferous forests. It occurs in mesic sites and streambanks, ranging in elevation from 60 to 1,405 meters above sea-level. Within the nine-quad search, there are 63 Rarefind occurrences, with the closest being 0.9 miles from the study area; the most recent reported observation date within the nine quads for this taxon was 2015. Although suitable habitat may exist within the project area for this species, it was not detected.

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, coastal prairie, valley, and foothill grasslands, ranging in elevation from 5 to 1,345 meters above sea-level. Within the nine-quad search, there are nine Rarefind occurrences, with the closest being 1.8 miles from the study area; the most recent reported observation date within the nine quads for this taxon was 2012. Although suitable habitat may exist within the project area for this species, it was not detected.

American manna grass (*Glyceria grandis*) is a perennial rhizomatous herb in the Poaceae family. It is neither state nor federally listed, but has a CRPR of 2B.3 and heritage ranks of G5/S3. Reported habitats include bogs/fens, meadows, seeps, marshes, streams, ponds, and swamps, ranging from 60 to 2,045 meters above sea-level. Within the nine-quad search, there is one Rarefind occurrence 7.2 miles from the study area; the most recent reported observation date within the nine quads for this taxon was 1936. Although suitable habitat may exist within the project area for this species, it was not detected.

Tracy's tarplant (*Hemizonia congesta* ssp. *tracyi*) is an annual herb in the Asteraceae family. It is neither state nor federally listed, but has a CRPR of 4.3 and heritage ranks of G5T4/S4. Reported habitats include coastal prairie, valley/foothill grassland, north coast coniferous forest, and lower montane coniferous forests. It occurs in openings (sometimes on serpentine), ranging from 120 to 1,200 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.

Sticky pea (*Lathyrus glandulosus*) is a perennial rhizomatous herb in the Fabaceae family. It is neither state nor federally listed, but has a CRPR of 4.3 and heritage ranks of G3/S3. Reported habitats include

cismontane woodlands. It occurs in oak woodlands upland from the coastal redwood forests, and along roadsides, ranging in elevation from 300 to 800 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.

Kellogg's lily (*Lilium kelloggii*) is a perennial bulbiferous herb in the Liliaceae family. It is neither state nor federally listed, but has a CRPR of 4.3 and heritage ranks of G3/S3. Reported habitats include lower montane coniferous forest and north coast coniferous forests. It occurs in gaps and roadsides in conifer forest; Ranging from 3 to 1,300 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.

Redwood lily (*Lilium rubescens*) is a perennial bulbiferous herb in the Liliaceae family. It is neither state nor federally listed, but has a CRPR of 4.2 and heritage ranks of G3/S3. Reported habitats include chaparral, lower montane coniferous forest, broadleaved upland forest, upper montane coniferous forest, and north coast coniferous forests. It sometimes occurs on serpentine. It ranges in elevation from 30 to 1,910 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.

Purple-flowered Washington lily (*Lilium washingtonianum* ssp. *purpurascens*) is a perennial bulbiferous herb in the Liliaceae family. It is neither state nor federally listed, but has a CRPR of 4.3 and heritage ranks of G4T4/S4. Reported habitats include chaparral, lower montane coniferous forest, and upper montane coniferous forests. It occurs on hillsides (sometimes serpentine); ranging from 70 to 2,750 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 taxon, it was not detected.

Heart-leaved twayblade (*Listera cordata*) is a perennial herb in the Orchidaceae family. It is neither state nor federally listed, but has a CRPR of 4.2 and heritage ranks of G5/S4. Reported habitats include bogs/fens, lower montane coniferous forest, and north coast coniferous forest, ranging in elevation from 5 to 1,370 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.

Northern microseris (*Microseris borealis*) is a perennial herb in the Asteraceae family. It is neither state nor federally listed, but has a CRPR of 2B.1 and heritage ranks of G5/S1. Reported habitats include bogs/fens, meadows/seeps, and lower montane coniferous forests, ranging in elevation from 45 to 1,070 meters above sea-level. Within the nine-quad search, there are two Rarefind occurrences, with the closest being 7.4 miles from the study area; the most recent reported observation date within the nine quads for this taxon was 1957. Although suitable habitat may exist within the project area for this species, it was not detected.

Leafy-stemmed mitrewort (*Mitellastra caulescens*) is a perennial rhizomatous herb in the Saxifragaceae family. It is neither state nor federally listed, but has a CRPR of 4.2 and heritage ranks of G5/S4. Reported habitats include broadleafed upland forest, lower montane coniferous forest, meadows/seeps, and north coast coniferous forests. It occurs in mesic sites, ranging in elevation from 5 to 1,700 meters above sea-level. Within the nine-quad search, there are four Rarefind occurrences, with the closest being 5.9 miles from the study area; the most recent reported observation date within the nine quads for this taxon was 2001. 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 coniferous 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 twenty-four (24) Rarefind occurrences, with the closest being 0.9 miles from the study area; the most recent reported observation date within the nine quads for this taxon was 2015. Although suitable habitat may exist within the project area for this species, it was not detected.

Seacoast ragwort (*Packera bolanderi* var. *bolanderi*) is a perennial rhizomatous herb in the Asteraceae family. It is neither state nor federally listed, but has a CRPR of 2B.2 and heritage ranks of G4T4/S2S3. Reported habitats include coastal scrub and north coast coniferous forests. It occurs along roadsides and riparian slopes, ranging in elevation from 30 to 915 meters above sea-level. Within the nine-quad search, there are nineteen (19) Rarefind occurrences, with the closest being 2 miles from the study area; the most recent reported observation date within the nine quads for this taxon was 2014. Although suitable habitat may exist within the project area for this taxon, it was not detected.

White-flowered rein orchid (*Piperia candida*) is a perennial herb in the Orchidaceae family. It is neither state nor federally listed, but has a CRPR of 1B.2 and heritage ranks of G3/S3. Reported habitats include north coast coniferous forest, lower montane coniferous forest, and broadleafed upland forests. It occurs on forest duff, mossy banks, rock outcrops (sometimes on serpentine), and muskeg, ranging in elevation from 45 to 1,615 meters above sea-level. Within the nine-quad search, there are eight Rarefind occurrences, with the closest being 4.3 miles from the study area; the most recent reported observation date within the nine quads for this taxon was 2015. Although suitable habitat may exist within the project area for this species, it was not detected.

California pinefoot (*Pityopus californicus*) is an achlorophyllous perennial herb in the Ericaceae family. It is neither state nor federally listed, but has a CRPR of 4.2 and heritage ranks of G4G5/S4. Reported habitats include broadleafed upland forest, upper montane coniferous forest, north coast coniferous forest, and lower montane coniferous forest. It occurs in mature forests in deep shade with few other understory species, often under a layer of duff, in rocky to clay loam soils, ranging in elevation from 15-2,225 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.

Nodding semaphore grass (*Pleuropogon refractus*) is a perennial rhizomatous herb in the Poaceae family. It is neither state nor federally listed, but has a CRPR of 4.2 and heritage ranks of G4/S4. Reported habitats include meadows/seeps, lower montane coniferous forest, north coast coniferous forest, riparian forests, and wetlands. It occurs in mesic sites along streams, grassy flats in shaded redwood groves, often on granite, ranging from zero (0) to 1,600 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.

Tracy's sanicle (*Sanicula tracyi*) is a perennial herb in the Apiaceae family. It is neither state nor federally listed, but has a CRPR of 4.2 and heritage ranks of G4/S4. Reported habitats include cismontane woodland, lower montane coniferous forest, and upper montane coniferous forests. It occurs on dry gravelly slopes or flats, usually in or at the margin of oak woodland with scattered trees, ranging from 100 to 1,585 meters

above sea-level. Within the nine-quad search, there are five Rarefind occurrences, with the closest being 5.4 miles from the study area; the most recent reported observation date within the nine quads for this taxon was 1994. Although suitable habitat may exist within the project area for this species, it was not detected.

Maple-leaved checkerbloom (*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 broadleafed upland forest, coastal prairie, coastal scrub, north coast coniferous forest, and riparian forests. It occurs in woodlands and clearings near coast, often in disturbed areas, ranging from zero (0) to 730 meters above sea-level. Within the nine-quad search, there are nineteen (19) Rarefind occurrences, with the closest being 6.9 miles from the study area; the most recent reported observation date within the nine quads for this taxon was 2001. Although suitable habitat may exist within the project area for this species, it was not detected.

Siskiyou checkerbloom (*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, and north coast coniferous forests. It occurs in open coastal forest and roadcuts, ranging from 5 to 1,255 meters above sea-level. Within the nine-quad search, there are eleven (11) Rarefind occurrences, with the closest being 6.3 miles from the study area; the most recent reported observation date within the nine quads for this taxon was 2014. Although suitable habitat may exist within the project area for this taxon, it was not detected.

Coast checkerbloom (*Sidalcea oregana* ssp. *eximia*) 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 G5T1/S1. Reported habitats include meadows/seeps, north coast coniferous forest, and lower montane coniferous forests. It occurs near meadows, in gravelly soil, ranging from 5 to 1,805 meters above sea-level. Within the nine-quad search, there are five Rarefind occurrences, with the closest being 5.2 miles from the study area; the most recent reported observation date within the nine quads for this taxon was 2007. Although suitable habitat may exist within the project area for this taxon, it was not detected.

Humboldt County wyethia (*Wyethia longicaulis*) is a perennial herb in the Asteraceae family. It is neither state nor federally listed, but has a CRPR of 4.3 and heritage ranks of G4/S4. Reported habitats include broadleafed upland forest, coastal prairie, and lower montane coniferous forests. It occurs along streams, seepage areas (sometimes on serpentine), ranging from 750-1525 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.

Seasonally appropriate surveys of the study area located two occurrences of one special status botanical species, the northern meadow sedge (Figures 2-4). The findings in this report represent a "snapshot in time" and it is possible that false negative surveys for rare plant species could occur.

5.2 Special Status Animal Species

Based on a review of special status animal species, 47 special status animal species have been reported with the potential to occur in the project region. Of the special status animal species potentially occurring in the

region, 38 animal species are considered to have a no or low potential to occur at the project site and nine species have a moderate or higher potential (Appendix 3). Species with a moderate or high potential for occurrence within the study area are described below.

5.2.1 Birds

The olive-sided flycatcher (*Contopus cooperi*) is a bird in the Tyrannidae family. It is not listed under either the federal or California endangered species acts, but is considered a species of special concern by CDFW and has heritage ranks of G4/S4. Reported habitats include lower montane coniferous forests, redwood, and upper montane coniferous forest. Nesting habitats are mixed conifer, montane hardwood-conifer, Douglas fir, redwood, red fir, and lodgepole pine. This species is most numerous in montane conifer forests where tall trees overlook canyons, meadows, lakes, or other open terrain. 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.

The black-capped chickadee (*Poecile atricapillus*) is a bird in the Paridae family. It is not listed under either the federal or California endangered species acts, but is included on a "Watch List" by CDFW and has heritage ranks of G5/S3. Reported habitats include riparian woodland. It inhabits riparian woodlands in Del Norte and northern Humboldt counties. It is mainly found in deciduous tree-types, especially willows and alders, along large or small watercourses. 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.

The red-breasted sapsucker (*Sphyrapicus ruber*) is a bird in the Picidae family. It is not listed under either the federal or California endangered species acts, but has heritage ranks of G5/S4. Breeds in mixed coniferous and mixed deciduous-coniferous forests and woodlands. Requires standing snags or hollow trees for a nesting cavity. 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.

The northern spotted owl (*Strix occidentalis caurina*) is a bird in the Strigidae family. It is listed as threatened under both the federal and California endangered species acts; is considered a species of special concern by CDFW, and has heritage ranks of G3T3/S2S3. Reported habitats include north coast coniferous forests and old-growth forests or mixed stands of old-growth and mature trees. It is occasionally found in younger forests with patches of big trees. It prefers high, multistory the canopy dominated by big trees and/or many trees with cavities or broken tops, woody debris, and space under the canopy. Within the nine-quad search, there are many Rarefind occurrences, with the closest being 0.7 miles from the study area; the most recent observation date within the nine quads for this taxon was 2016. The study area contains limited habitat; however, high quality habitats exist adjacent to the study area. Although suitable habitat may exist within the project area for this species, it was not detected by incidental observations. A protocol survey for the northern spotted owl was not performed.

5.2.2 Mammals

The Sonoma tree vole (*Arborimus pomo*) is a mammal in the Muridae family. It is not listed under either the federal or California endangered species acts, but is considered a species of special concern by CDFW and has heritage ranks of G3/S3. Its reported habitats include North Coast coniferous forests, old growth

forests, and redwood forest. Its reported range is the North Coast fog belt from Oregon border to Sonoma County. It feeds almost exclusively on Douglas fir needles, but will occasionally take needles of grand fir, hemlock, or spruce. Within the nine-quad search, there are twenty-three (23) Rarefind occurrences, with the closest being 2.1 miles from the study area; the most recent observation date within the nine quads for this taxon was 1996. Although suitable habitat may exist within the project area for this species, it was not detected.

5.2.3 Amphibians

The Pacific tailed frog (*Ascaphus truei*) is an amphibian in the Ascaphidae family. It is not listed under either the federal or California endangered species acts, but is considered a species of special concern by CDFW and has heritage ranks of G4/S3S4. Reported habitats include aquatic places in Klamath/north coast flowing waters; lower montane coniferous forest; north coast coniferous forest; redwood; riparian forest. It is restricted to perennial montane streams in hardwood-conifer, redwood, Douglas fir, and ponderosa pine habitats. Tadpoles require water below 15 °C. Within the nine-quad search, there are nineteen (19) Rarefind occurrences, with the closest being 0.6 miles from the study area; the most recent observation date within the nine quads for this taxon was 2015. Although suitable habitat may exist within the project area for this species, it was not detected.

The northern red-legged frog (*Rana aurora*) is an amphibian in the Ranidae family. It is not listed under either the federal or California endangered species acts, but is considered a species of special concern by CDFW and has heritage ranks of G4/S3. Reported habitats include Klamath/north coast flowing waters; riparian forest; and riparian woodlands. It occurs in humid forests, woodlands, grasslands, and streamsides in northwestern California; usually near dense riparian cover. It is generally found near permanent water, but can be found far from water in damp woods and meadows during the non-breeding season (May to November). Threats to this species include pathogens and predation by the American bullfrog (*Lithobates catesbeianus*), a non-native species. Within the nine-quad search, there are twenty-one (21) Rarefind occurrences, with the closest being 2.1 miles from the study area; the most recent observation date within the nine quads for this taxon was 2016. One northern red-legged frog was located in the eastern branch of Cowan Creek (Figures 2 and 5; Photos 2 and 3 in Appendix 6). This occurrence was observed within the wetted portion of the channel.

The southern torrent salamander (*Rhyacotriton variegatus*) is an amphibian in the Rhyacotritonidae family. It is not listed under either the federal or California endangered species acts, but is considered a species of special concern by CDFW and has heritage ranks of G3G4/S2S3. Reported habitats coastal redwood, Douglas fir, mixed conifer, montane riparian, and montane hardwood-conifer habitats including old growth forest. It prefers cold, well-shaded, permanent streams and seepages, or within splash zone or on moss-covered rocks within trickling water. Within the nine-quad search, there are thirty-one (31) Rarefind occurrences, with the closest being 1.3 miles from the study area; the most recent observation date within the nine quads for this taxon was 2015. Although suitable habitat may exist within the project area for this species, it was not detected.

5.2.4 Insects

The western bumble bee (*Bombus occidentalis*) is an insect in the Apidae family. It is not listed under either the federal or California endangered species acts, but has heritage ranks of G2G3/S1. This species was once

common and widespread, but has declined precipitously from central California to southern British Columbia, perhaps from disease. Range-wide, example food plants of *Bombus occidentalis* include *Ceanothus, Centaurea, Chrysothamnus, Cirsium, Geranium, Grindellia, Lupinus, Melilotus, Monardella, Rubus, Solidago,* and *Trifolium*. Within the nine-quad search, there are four Rarefind occurrences, with the closest being 9.4 miles from the study area; the most recent observation date within the nine quads for this taxon was 2015. Although suitable habitat may exist within the project area for this species, it was not detected.

One special status animal species was observed within the study area, the northern red-legged frog. The occurrence location of this species of special concern observation is not anticipated to be effected by project activities because it exists within a riparian area that will not be impacted by the project (Figure 5). The findings in this report represent a "snapshot in time" and it is possible that false negative surveys for special status animal species could occur.

5.3 Special Status Habitats and Natural Communities

5.3.1 Designated Critical Habitat

USFWS's Critical Habitat database for habitat designated as critical for species listed under the FESA reported that the closest designated critical habitat is for the northern spotted owl (*Strix occidentalis caurina*); approximately 1 mile to the southwest and 1.5 miles to the east. Additionally, critical habitat for steelhead (*Oncorhynchus mykiss irideus*) is mapped 1 mile southwest of the study area along the main stem of the Mad River.

5.3.2 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. Holland-type CNDDB natural communities are habitat for numerous special status plant and animal species. CDFW no longer updates their tracking of Holland-type CNDDB natural communities and has since standardized alliance and association-level vegetation nomenclature for California to comply with the National Vegetation Classification System. 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. The following vegetation alliances were observed within the study area (Figure 2):

Quercus garryana (Oregon white oak woodland) Alliance (G4S3) occurs within the study area in riparian zones and localized topographic low areas containing *Quercus garryana* at greater than 25 percent absolute cover and/or 30 percent relative cover in the tree canopy (Figure 2). Oregon white oak woodlands within the study area contain an understory of young Douglas fir (*Pseudotsuga menziesii*) trees (Photo 4 in Appendix 6).

Pseudotsuga menziesii (Douglas fir forest) Alliance (G5S4) occurs in within and adjacent to riparian areas that contain *Pseudotsuga menziesii* at greater than 50 percent relative cover in the tree canopy.

Umbellularia californica (California bay forest) Alliance (G4 S3) occurs within riparian areas associated with the two branches of Cowan Creek containing greater than 50 percent relative cover in the overstory (Figure 2).

Danthonia californica (California oat grass prairie) Provisional Alliance (G4S3) occurs within the study area occur in grasslands that contain *Danthonia californica* at greater than 25 percent absolute cover and/or 50 percent relative cover in the herbaceous canopy (Figure 2; Photo 5 in Appendix 6).

The remainder of the study area consists of non-native grasslands (with inclusions of *Pteridium aquilinum*) composed of *Holcus lanatus–Anthoxanthum odoratum* (Common velvet grass–sweet vernal grass meadows) Semi-natural Stands; *Bromus* (*diandrus, hordeaceus*)–*Brachypodium distachyon* (Annual brome grasslands) Semi-natural Stands, and *Lolium perenne*[2] (Perennial rye grass fields) Semi-natural Stands.

5.3.3 Wetland and Riparian Habitats

A total of 14 wetland polygons totaling 114,869 square feet were delineated within the study area, including 3 stock ponds with connectivity to Cowan Creek (Figure 2; Photo 6 in Appendix 6; SHN, 2016 [Appendix 7]). Additionally, 10 ordinary high water mark (OHWM) polygons totaling 30,224 square feet were delineated within the study area. The OHWM areas are tributaries to Cowan Creek. All but one of these tributaries are seasonally flowing watercourses, the creek associated with the northern red-legged frog observation flows year-round (Photos 3 and 7 in Appendix 6).

5.3.4 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 or wetland areas.

5.3.5 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. Additionally, wildlife may use existing cattle trails that provide narrow opening in areas of tall grass or dense shrub layers.

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.

6.1 Special Status Plant Species

Of the 62 special status plant species reported within the region, 33 are considered to have a low potential to occur within the study area, 28 are considered moderate, and 1 species is present (northern meadow sedge [*Carex praticola*]). Site investigations were conducted during appropriate seasons for detecting plant species with moderate or higher potential for occurrence. The northern meadow sedge was the only rare plant species detected within the study area. Both document northern meadow sedge populations occur within wetland areas.

[2] *Lolium perenne* is a synonym for *Festuca perennis*.

6.2 Special Status Animal Species

Of the 47 special status animal species reported within the region, 38 animal species are considered to have no or a low potential to occur within the study area and 8 species moderate, and one species is present (northern red-legged frog [*Rana aurora*]). The northern red-legged frog was the only special status animal species detected within the study area. The northern red-legged frog was observed in a branch of Cowan Creek with perennial water flow.

6.3 Special Status Habitats and Natural Communities

6.3.1 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 northern spotted owl (*Strix occidentalis caurina*), approximately 1 mile to the southwest and 1.5 miles to the east of the study area. Additionally, critical habitat for steelhead (*Oncorhynchus mykiss irideus*) is mapped 1 mile to the southwest of the study area along the main stem of the Mad River.

6.3.2 Vegetation Alliances

The following special status vegetation alliances were observed within the study area (Figure 2):

Quercus garryana (Oregon white oak woodland) Alliance (G4S3), *Umbellularia californica* (California bay forest) Alliance (G4S3), and the *Danthonia californica* (California oat grass prairie) Provisional Alliance (G4S3).

6.3.3 Wetland and Riparian Habitats

A total of 14 wetland polygons totaling 114,869 square feet were delineated within the study area (Figure 2; SHN, 2016 [Appendix 7]). Additionally, 10 OHWM polygons totaling 30,224 square feet were delineated within the study area. The OHWM areas are tributaries to Cowan Creek. All but one of these tributaries are seasonally flowing watercourses, only the creek associated with the northern red-legged frog observation flows year-round.

6.3.4 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 or wetland areas.

6.3.5 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. Additionally, wildlife may use existing cattle 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.

- The project should attempt to avoid impacts to special status species and habitats present within the study area, specifically the two northern meadow sedge populations, northern red-legged frog habitat, wetlands and SMAs, Oregon white oak woodlands, California bay forests, and California oat grass prairies.
- Once a project description is finalized, prepare an impact analysis that considers project components and their effects on biological resources.
- If impacts to special status resources cannot be avoided while still accomplishing project objectives, these impacts should be mitigated at a 3:1 ratio.
- 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, or the closest habitat for northern spotted owls, whichever is less. If project generated sound combined with ambient conditions exceeds 90 decibels, technical assistance should be requested from the USFWS and CDFW.
- Construction-related ground disturbance activities, such as, grading and culvert repair projects, should include an erosion and sediment control plan that includes BMPs to avoid and minimize sediment transport.
- Limit ground disturbance and vegetation clearing to the minimal extent necessary to accomplish project goals.
- All constructed ponds should be kept free of American bullfrog (*Lithobates catesbeianus*) infestations to prevent this non-native species from impacting special status aquatic species, such as, the northern red-legged frog.
- Project-related vegetation clearing should occur outside the bird nesting season, which is generally considered to be March 15 through August 1. 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 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.
- Refrain from the improper storage or use of any fuels, fertilizer, pesticide, fungicide, rodenticide, or herbicide.
- For any proposed mixed-light cultivation, shield green houses so that little light escapes. Light should not escape at a level that is visible from neighboring properties between sunset and sunrise.

The light source should comply with the International Dark Sky Association standards for lighting zones zero (0) and 1, and be designed to regulate light spillage onto neighboring properties resulting from back-light, up-light, or glare.

8.0 References

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USFWS List of Threatened and Endangered Species

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arcata Fish And Wildlife Office
1655 Heindon Road
Arcata, CA 95521-4573
Phone: (707) 822-7201 Fax: (707) 822-8411

In Reply Refer To:
Consultation Code: 08EACT00-2017-SLI-0308
Event Code: 08EACT00-2017-E-00526

August 06, 2017

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the

human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Arcata Fish And Wildlife Office
1655 Heindon Road
Arcata, CA 95521-4573
(707) 822-7201

Project Summary

Consultation Code: 08EACT00-2017-SLI-0308

Event Code: 08EACT00-2017-E-00526

Project Name:

Project Type: AGRICULTURE

Project Description: Agriculture related

Project Location:

Approximate location of the project can be viewed in Google Maps:
https://www.google.com/maps/place/40.67380293032032N123.81604405502932W



Counties: Humboldt, CA

Endangered Species Act Species

There is a total of 4 threatened, endangered, or candidate species on this species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

Birds

NAME	STATUS
Marbled Murrelet *Brachyramphus marmoratus* Population: U.S.A. (CA, OR, WA) There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4467	Threatened
Northern Spotted Owl *Strix occidentalis caurina* There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened
Western Snowy Plover *Charadrius alexandrinus nivosus* Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is a **proposed** critical habitat for this species. Your location is outside the proposed critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Critical habitats

There are no critical habitats within your project area under this office's jurisdiction.

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Regionally Occurring Special Status Plant Species Scoping List

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Appendix 2
Regionally Occurring Special Status Plant Species Scoping List
AMT, LLC. Korbel, California

Latin Name	Common Name	FESA/CESA/CRPR[1]	Heritage Ranks[2]	Lifeform	Notes	Blooming Period	Potential for Occurrence
Allium siskiyouense	Siskiyou onion	-/-/4.3	G4/S4	perennial bulbiferous herb	Lower montane coniferous forest, ultramafic, upper montane coniferous forest. Lower montane coniferous forest, upper montane coniferous forest. Rocky sites, sometimes on serpentine. 855-2500 meters (m). There is no Rarefind occurrence for this taxon within the 9-quad search.	(Apr)May-Jul	Low
Antennaria suffrutescens	evergreen everlasting	-/-/4.3	G4/S4?	perennial stoloniferous herb	Lower montane coniferous forest, ultramafic. Lower montane coniferous forest. serpentine substrates. 500-1,600 m. There is no Rarefind occurrence for this taxon within the 9-quad search.	Jan-Jul	Low
Arnica cernua	serpentine arnica	-/-/4.3	G5/S4	perennial rhizomatous herb	Lower montane coniferous forest, ultramafic. Lower montane coniferous forest. serpentine sites. 500-1,920 m. There is no Rarefind occurrence for this taxon within the 9-quad search.	Apr-Jul	Low
Astragalus rattanii var. *rattanii*	Rattan's milk-vetch	-/-/4.3	G4T4/S4	perennial herb	Chaparral, cismontane woodland, lower montane coniferous forest. Chaparral, cismontane woodland, lower montane coniferous forest. Open grassy hillsides, gravelly flats in the valleys, and gravel bars of stream beds. 30-825 m. There is no Rarefind occurrence for this taxon within the 9-quad search.	Apr-Jul	Moderate
Astragalus umbraticus	Bald Mountain milk-vetch	-/-/2B.3	G3/S2	perennial herb	Cismontane woodland, lower montane coniferous forest. Cismontane woodland, lower montane coniferous forest. Dry open oak and pine woodlands, sometimes on roadsides. 210-1,220 m. Within the 9-quad search, there are 6 Rarefind occurrences, with the closest being 5.8 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 2016.	May-Aug	Moderate
Bensoniella oregona	bensoniella	-/R/1B.1	G3/S2	perennial herb	Bog and fen; lower montane coniferous forest, meadow and seep, wetland. Bogs and fens, lower montane coniferous forest, meadows and seeps. Wet meadows and openings in forest. 1,390 - 9,405m. Within the 9-quad search, there are 9 Rarefind occurrences, with the closest being 5 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 2014.	May-Jul	Low
Buxbaumia viridis	buxbaumia moss	-/-/2B.2	G4G5/S1	moss	Lower montane coniferous forest, subalpine coniferous forest, upper montane coniferous forest. Lower montane coniferous forest, upper montane coniferous forest, subalpine coniferous forest. Well rotted logs and in peaty soil and humus. 975-2,200 m. Within the 9-quad search, there is 1 Rarefind occurrence, with the closest being 7.5 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 2002.	N/A	Low
Carex arcta	northern clustered sedge	-/-/2B.2	G5/S1	perennial herb	Bog and fen, North coast coniferous forest, Wetland. Bogs and fens, north coast coniferous forest. Mesic sites. 60-1,405 m. Within the 9-quad search, there are 6 Rarefind occurrences, with the closest being 5.1 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 2014.	Jun-Sep	Moderate
Carex geyeri	Geyer's sedge	-/-/4.2	G5/S4	perennial rhizomatous herb	Great Basin scrub, lower montane coniferous forest. Lower montane coniferous forest, great basin scrub. volcanic substrate, open forests and slopes. 1,155-2,100 m. There is no Rarefind occurrence for this taxon within the 9-quad search.	May-Aug	Low
Carex leptalea	bristle-stalked sedge	-/-/2B.2	G5/S1	perennial rhizomatous herb	Bog and fen, freshwater marsh, marsh and swamp, meadow and seep, wetland. Bogs and fens, meadows and seeps, marshes and swamps. Mostly known from bogs and wet meadows. 3-1,395 m. Within the 9-quad search, there is 1 Rarefind occurrence, with the closest being 5.6 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 2012.	Mar-Jul	Low
Carex praticola	northern meadow sedge	-/-/2B.2	G5/S2	perennial herb	Meadow and seep, wetland. Meadows and seeps. Moist to wet meadows. 15-3,200 m. Within the 9-quad search, there is 1 Rarefind occurrence, with the closest being 13.6 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 1982.	May-Jul	Present
Chrysosplenium glechomifolium	Pacific golden saxifrage	-/-/4.3	G5/S3	perennial herb	North coast coniferous forest, riparian forest. North coast coniferous forest, riparian forest. Streambanks, sometimes seeps, sometimes roadsides. 10-220 m. There is no Rarefind occurrence for this taxon within the 9-quad search.	Feb-Jun	Low
Collomia tracyi	Tracy's collomia	-/-/4.3	G4/S4	annual herb	Lower montane coniferous forest, Ultramafic. Lower montane coniferous forest. on rock outcrops. on serpentine at least sometimes. 300-2,100 m. There is no Rarefind occurrence for this taxon within the 9-quad search.	Jun-Jul	Moderate

Appendix 2
Regionally Occurring Special Status Plant Species Scoping List
AMT, LLC. Korbel, California

Latin Name	Common Name	FESA/CESA/CRPR[1]	Heritage Ranks[2]	Lifeform	Notes	Blooming Period	Potential for Occurrence
Coptis laciniata	Oregon goldthread	-/-/4.2	G4/S3	perennial rhizomatous herb	Meadow and seep, north coast coniferous forest, wetland. North coast coniferous forest, meadows and seeps. mesic sites such as moist streambanks. 0-1000 m. Within the 9-quad search, there are 5 Rarefind occurrences, with the closest being 2.8 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 2013.	(Feb)Mar-May(Sep-Nov)	Low
Cornus canadensis	bunchberry	-/-/2B.2	G5/S2	perennial rhizomatous herb	Bog and fen, meadow and seep, north coast coniferous forest. North coast coniferous forest, bogs and fens, meadows and seeps. 90-1,920 m. Within the 9-quad search, there are 3 Rarefind occurrences, with the closest being 5.9 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 2014.	May-Jul	Low
Cypripedium californicum	California lady's-slipper	-/-/4.2	G4/S4	perennial rhizomatous herb	Bog and fen, lower montane coniferous forest, ultramafic, wetland. Lower montane coniferous forest, bogs and fens. In perennial seepages on serpentine substrate and in gravel along creek margins. 30-2,750 m. There is no Rarefind occurrence for this taxon within the 9-quad search.	Apr-Aug(Sep)	Low
Cypripedium montanum	mountain lady's-slipper	-/-/4.2	G4/S4	perennial rhizomatous herb	Broadleaved upland forest, cismontane woodland, lower montane coniferous forest, north coast coniferous forest. Lower montane coniferous forest, broadleafed upland forest, cismontane woodland, north coast coniferous forest. on dry, undisturbed slopes. 185-2,225 m. There is no Rarefind occurrence for this taxon within the 9-quad search.	Mar-Aug	Moderate
Epilobium oreganum	Oregon fireweed	-/-/1B.2	G2/S2	perennial herb	Bog and fen, lower montane coniferous forest, meadow and seep, ultramafic, upper montane coniferous forest, wetland. Bogs and fens, meadows and seeps, lower montane coniferous forest, upper montane coniferous forest. In and near springs and bogs, at least sometimes on serpentine. 575-2,075 m. Within the 9-quad search, there are 5 Rarefind occurrences, with the closest being 4.9 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 1979.	Jun-Sep	Low
Epilobium septentrionale	Humboldt County fuchsia	-/-/4.3	G4/S4	perennial herb	Broadleaved upland forest, north coast coniferous forest. Broadleafed upland forest, north coast coniferous forest. dry, sandy or rocky ledges. 45-1,800 m. There is no Rarefind occurrence for this taxon within the 9-quad search.	Jul-Sep	Moderate
Erigeron maniopotamicus	Mad River fleabane daisy	-/-/1B.2	G2?/S2?	perennial herb	Lower montane coniferous forest, meadow and seep. meadows and seeps (open and dry), lower montane coniferous forest. Open slopes, disturbed areas (road cuts), tan-colored, rocky solls. 1,280-1,505 m. Within the 9-quad search, there are 6 Rarefind occurrences, with the closest being 3.8 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 2013.	May-Aug	Low
Erigeron robustior	robust daisy	-/-/4.3	G3/S3	perennial herb	Lower montane coniferous forest, meadow and seep, ultramafic. lower montane coniferous forest, meadows and seeps. In Glades and meadows, sometimes on serpentine substrates. 200-610 m. There is no Rarefind occurrence for this taxon within the 9-quad search.	Jun-Jul	Moderate
Erythranthe trinitiensis	pink-margined monkeyflower	-/-/1B.3	G3/S3	annual herb	Cismontane woodland, lower montane coniferous forest, meadow and seep, ultramafic, upper montane coniferous forest. Lower montane coniferous forest, upper montane coniferous forest, cismontane woodland, meadows and seeps. Often on serpentine and roadsides. 1,370-1,950 m. Within the 9-quad search, there are 7 Rarefind occurrences, with the closest being 9.3 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 2015.	Jun-Jul(Aug)	Low
Erythronium oregonum	giant fawn lily	-/-/2B.2	G4G5/S2	perennial herb	Cismontane woodland, meadow and seep, ultramafic. cismontane woodland, meadows and seeps. Openings. sometimes on serpentine, rocky sites. 300-1,435 m. Within the 9-quad search, there are 5 Rarefind occurrences, with the closest being 5.1 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 2006.	Mar-Jun(Jul)	Low
Erythronium revolutum	coast fawn lily	-/-/2B.2	G4G5/S3	perennial bulbiferous herb	Bog and fen, broadleaved upland forest, north coast coniferous forest, wetland. Bogs and fens, broadleafed upland forest, north coast coniferous forest. Mesic sites, streambanks. 60-1,405 m. Within the 9-quad search, there are 63 Rarefind occurrences, with the closest being 0.9 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 2015.	Mar-Jul(Aug)	Moderate

Appendix 2
Regionally Occurring Special Status Plant Species Scoping List
AMT, LLC. Korbel, California

Latin Name	Common Name	FESA/CESA/CRPR[1]	Heritage Ranks[2]	Lifeform	Notes	Blooming Period	Potential for Occurrence
Fritillaria glauca	Siskiyou fritillaria	-/-/4.2	G3G4/S3	perennial bulbiferous herb	Alpine, alpine boulder and rock field, subalpine coniferous forest, ultramafic, upper montane coniferous forest. Upper montane coniferous forest, alpine boulder and rock field, subalpine coniferous forest. serpentine, talus slopes. 1,735-2,440 m. There is no Rarefind occurrence for this taxon within the 9-quad search.	(Apr-May)Jun-Jul	Low
Fritillaria purdyi	Purdy's fritillary	-/-/4.3	G4/S4	perennial bulbiferous herb	Chaparral, cismontane woodland, lower montane coniferous forest, ultramafic. Chaparral, cismontane woodland, lower montane coniferous forest. usually on serpentine. 175-2,255 m. There is no Rarefind occurrence for this taxon within the 9-quad search.	Mar-Jun	Low
Gilia capitata ssp. *pacifica*	Pacific gilia	-/-/1B.2	G5T3/S2	annual herb	Chaparral, coastal bluff scrub, coastal prairie, valley and foothill grassland. Coastal bluff scrub, chaparral, coastal prairie, valley and foothill grassland. 5-1,345 m. Within the 9-quad search, there are 9 Rarefind occurrences, with the closest being 1.8 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 2012.	Apr-Aug	Moderate
Glyceria grandis	American manna grass	-/-/2B.3	G5/S3	perennial rhizomatous herb	Bog and fen, marsh and swamp, meadow and seep, wetland. Bogs and fens, meadows and seeps, marshes and swamps. Wet meadows, ditches, streams, and ponds, in valleys and lower elevations in the mountains. 60-2,045 m. Within the 9-quad search, there is 1 Rarefind occurrences, with the closest being 7.2 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 1936.	Jun-Aug	Moderate
Hemizonia congesta ssp. *tracyi*	Tracy's tarplant	-/-/4.3	G5T4/S4	annual herb	Coastal prairie, north coast coniferous forest, ultramafic, valley and foothill grassland. Coastal prairie, north coast coniferous forest, lower montane coniferous forest. openings, sometimes on serpentine. 120-1,200 m. There is no Rarefind occurrence for this taxon within the 9-quad search.	May-Oct	Moderate
Hosackia gracilis	harlequin lotus	-/-/4.2	G4/S3	perennial rhizomatous herb	Broadleaved upland forest, cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal prairie, coastal scrub, marsh and swamp, meadow and seep, north coast coniferous forest, valley and foothill grassland, wetland. Broadleaved upland forest, coast bluff scrub, coast prairie, cismontane woodland, coastal scrub, closed-cone coniferous forest, meadows and seeps, marshes and swamps, north coast coniferous forest, valley and foothill grassland. Wetlands and roadsides. 0-700 m. There is no Rarefind occurrence for this taxon within the 9-quad search.	Mar-Jul	Low
Iliamna latibracteata	California globe mallow	-/-/1B.2	G2G3/S2	perennial herb	Chaparral, lower montane coniferous forest, north coast coniferous forest, riparian scrub. North Coast coniferous forest, chaparral, lower montane coniferous forest, riparian scrub (streambanks). Seepage areas in silty clay loam. 60-2,000 m. Within the 9-quad search, there are 5 Rarefind occurrences, with the closest being 4.7 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 2009.	Jun-Aug	Low
Lathyrus glandulosus	sticky pea	-/-/4.3	G3/S3	perennial rhizomatous herb	Cismontane woodland. cismontane woodland. In oak woodlands upland from the coastal redwood forests, and along roadsides. 300-800 m. There is no Rarefind occurrence for this taxon within the 9-quad search.	Apr-Jun	Moderate
Lilium kelloggii	Kellogg's lily	-/-/4.3	G3/S3	perennial bulbiferous herb	Lower montane coniferous forest, north coast coniferous forest. Lower montane coniferous forest, north coast coniferous forest. gaps and roadsides in conifer forest. 3-1,300 m. There is no Rarefind occurrence for this taxon within the 9-quad search.	May-Aug	Moderate
Lilium pardalinum ssp. *vollmeri*	Vollmer's lily	-/-/4.3	G5T4/S3	perennial bulbiferous herb	Bog and fen, meadow and seep, wetland. meadows and seeps, bogs and fens. Wet-ground, usually with moving water nearby, including mountain creeks, cliff-side springs, bogs and meadows. 30-1,680 m. There is no Rarefind occurrence for this taxon within the 9-quad search.	(Jun)Jul-Aug	Low
Lilium rubescens	redwood lily	-/-/4.2	G3/S3	perennial bulbiferous herb	Broadleaved upland forest, chaparral, lower montane coniferous forest, north coast coniferous forest, ultramafic, upper montane coniferous forest. Chaparral, lower montane coniferous forest, broadleaved upland forest, upper montane coniferous forest, north coast coniferous forest. Sometimes on serpentine. 30-1,910 m. There is no Rarefind occurrence for this taxon within the 9-quad search.	Apr-Aug(Sep)	Moderate
Lilium washingtonianum ssp. *purpurascens*	purple-flowered Washington lily	-/-/4.3	G4T4/S4?	perennial bulbiferous herb	Chaparral, lower montane coniferous forest, ultramafic, upper montane coniferous forest. Chaparral, lower montane coniferous forest, upper montane coniferous forest. often collected on dry hillsides, on serpentine. 70-2,750 m. There is no Rarefind occurrence for this taxon within the 9-quad search.	Jun-Aug	Moderate

Appendix 2
Regionally Occurring Special Status Plant Species Scoping List
AMT, LLC. Korbel, California

Latin Name	Common Name	FESA/CESA/CRPR[1]	Heritage Ranks[2]	Lifeform	Notes	Blooming Period	Potential for Occurrence
Listera cordata	heart-leaved twayblade	-/-/4.2	G5/S4	perennial herb	Bog and fen, lower montane coniferous forest, north coast coniferous forest, wetland. Bogs and fens, lower montane coniferous forest, north coast coniferous forest. 5-1,370 m. There is no Rarefind occurrence for this taxon within the 9-quad search.	Feb-Jul	Moderate
Lycopodium clavatum	running-pine	-/-/4.1	G5/S3	perennial rhizomatous herb	Lower montane coniferous forest, marsh and swamp, north coast coniferous forest, wetland. Lower montane coniferous forest, north coast coniferous forest, marshes and swamps. Forest understory, edges, openings, roadsides, mesic sites with partial shade and light. 45-1,225 m. Within the 9-quad search, there are 20 Rarefind occurrences, with the closest being 5.9 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 2002.	Jun-Aug(Sep)	Low
Microseris borealis	northern microseris	-/-/2B.1	G5/S1	perennial herb	Bog and fen, lower montane coniferous forest, meadow and seep, wetland. Bogs and fens, meadows and seeps, lower montane coniferous forest. 45-1,070 m. Within the 9-quad search, there are 2 Rarefind occurrences, with the closest being 7.4 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 1957.	Jun-Sep	Moderate
Mitellastra caulescens	leafy-stemmed mitrewort	-/-/4.2	G5/S4	perennial rhizomatous herb	Broadleaved upland forest, lower montane coniferous forest, meadow and seep, north coast coniferous forest. Broadleafed upland forest, lower montane coniferous forest, meadows and seeps, north coast coniferous forest. mesic sites. 5-1,700 m. Within the 9-quad search, there are 4 Rarefind occurrences, with the closest being 5.9 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 2001.	(Mar)Apr-Oct	Moderate
Montia howellii	Howell's montia	-/-/2B.2	G3G4/S2	annual herb	Meadow and seep, north coast coniferous forest, vernal pool, wetland. Meadows and seeps, north coast coniferous forest, vernal pools. vernally wet sites, often on compacted soil. 10-1,005 m. Within the 9-quad search, there are 24 Rarefind occurrences, with the closest being 0.9 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 2015.	(Feb)Mar-May	Moderate
Noccaea fendleri ssp. *californica*	Kneeland Prairie pennycress	E/-/1B.1	G5?T1/S1	perennial herb	Broadleaved upland forest, coastal prairie, ultramafic. Coastal prairie. serpentine rock outcrops. 760-820 m. Within the 9-quad search, there is 1 Rarefind occurrences, with the closest being 6.3 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 2001.	May-Jun	Low
Packera bolanderi var. *bolanderi*	seacoast ragwort	-/-/2B.2	G4T4/S2S3	perennial rhizomatous herb	Coastal scrub, north coast coniferous forest. Coastal scrub, north coast coniferous forest. Sometimes along roadsides. 30-915 m. Within the 9-quad search, there is 19 Rarefind occurrences, with the closest being 2 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 2014.	(Jan-Apr)May-Jul(Aug)	Moderate
Piperia candida	white-flowered rein orchid	-/-/1B.2	G3/S3	perennial herb	Broadleaved upland forest, lower montane coniferous forest, north coast coniferous forest, ultramafic. North coast coniferous forest, lower montane coniferous forest, broadleafed upland forest. Sometimes on serpentine. forest duff, mossy banks, rock outcrops, and muskeg. 45-1,615 m. Within the 9-quad search, there are 8 Rarefind occurrences, with the closest being 4.3 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 2015.	(Mar)May-Sep	Moderate
Pityopus californicus	California pinefoot	-/-/4.2	G4G5/S4	perennial herb (achlorophyllous)	Broadleaved upland forest, lower montane coniferous forest, north coast coniferous forest, oldgrowth, upper montane coniferous forest. Broadleafed upland forest, upper montane coniferous forest, north coast coniferous forest, lower montane coniferous forest. Deep shade with few other understory species, often under a layer of duff, in rocky to clay loam soils. 15-2,225 m. There is no Rarefind occurrence for this taxon within the 9-quad search.	(Mar-Apr)May-Aug	Moderate
Platanthera stricta	slender bog-orchid	-/-/4.2	G5/S3	perennial herb	Lower montane coniferous forest, meadow and seep, wetland. Lower montane coniferous forest, meadows and seeps. Mesic sites. 1000-2,300 m. There is no Rarefind occurrence for this taxon within the 9-quad search.	May-Aug	Low

Appendix 2
Regionally Occurring Special Status Plant Species Scoping List
AMT, LLC. Korbel, California

Latin Name	Common Name	FESA/CESA/CRPR[1]	Heritage Ranks[2]	Lifeform	Notes	Blooming Period	Potential for Occurrence
Pleuropogon refractus	nodding semaphore grass	-/-/4.2	G4/S4	perennial rhizomatous herb	Lower montane coniferous forest, meadow and seep, north coast coniferous forest, riparian forest, wetland. meadows and seeps, lower montane coniferous forest, north coast coniferous forest, riparian forest. Mesic sites along streams, grassy flats in shaded redwood groves, often on granite. 0-1,600 m. There is no Rarefind occurrence for this taxon within the 9-quad search.	(Mar)Apr-Aug	Moderate
Ptilidium californicum	Pacific fuzzwort	-/-/4.3	G4G5/S3S4	liverwort	Lower montane coniferous forest, upper montane coniferous forest. lower montane coniferous forest, upper montane coniferous forest. epiphytic on fallen and decaying logs and stumps. Rarely on boulders over humus. 340-1,860 m. Within the 9-quad search, there is 10 Rarefind occurrences, with the closest being 5.1 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 2009.	May-Aug	Low
Ramalina thrausta	angel's hair lichen	-/-/2B.1	G5/S2?	fruticose lichen (epiphytic)	North coast coniferous forest. North coast coniferous forest. on dead twigs and other lichens. 75-430 m. Within the 9-quad search, there is 1 Rarefind occurrences, with the closest being 13.5 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 1972.	N/A	Low
Ribes laxiflorum	trailing black currant	-/-/4.3	G5/S4	perennial deciduous shrub	North coast coniferous forest. north coast coniferous forest. Clambering over logs and stumps in moist, wet places. redwood forests. 5-1,395 m. There is no Rarefind occurrence for this taxon within the 9-quad search.	Mar-Jul(Aug)	Low
Rosa gymnocarpa var. *serpentina*	Gasquet rose	-/-/1B.3	G5T3T4/S2	perennial rhizomatous shrub	Chaparral, cismontane woodland, ultramafic. Chaparral, cismontane woodland. serpentinite. often on roadsides, sometime on ridges, streambanks, and in openings. 365-2,230 m. Within the 9-quad search, there are 3 Rarefind occurrences, with the closest being 13.4 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 2008.	Apr-Jun(Aug)	Low
Sanguisorba officinalis	great burnet	-/-/2B.2	G5?/S2	perennial rhizomatous herb	Bog and fen, broadleaved upland forest, marsh and swamp, meadow and seep, north coast coniferous forest, riparian forest, ultramafic, wetland. Bogs and fens, meadows and seeps, broadleafed upland forest, marshes and swamps, north coast coniferous forest, riparian forest. Rocky serpentine seepage areas and along stream 5-1,400 m. Within the 9-quad search, there are 3 Rarefind occurrences, with the closest being 5.6 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 2014.	Jul-Oct	Low
Sanicula tracyi	Tracy's sanicle	-/-/4.2	G4/S4	perennial herb	Cismontane woodland, lower montane coniferous forest, upper montane coniferous forest. cismontane woodland, lower montane coniferous forest, upper montane coniferous forest. Dry gravelly slopes or flats, usually in or at the margin of oak woodland with scattered trees. 100-1,585 m. Within the 9-quad search, there are 5 Rarefind occurrences, with the closest being 5.4 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 1994.	Apr-Jul	Moderate
Sedum laxum ssp. *flavidum*	pale yellow stonecrop	-/-/4.3	G5T4Q/S4	perennial herb	Broadleaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest, ultramafic, upper montane coniferous forest. Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, upper montane coniferous forest. Serpentine or basalt outcrops. 455-2,000 m. Within the 9-quad search, there are 7 Rarefind occurrences, with the closest being 3.2 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 1991.	May-Jul	Low
Sidalcea malachroides	maple-leaved checkerbloom	-/-/4.2	G3/S3	perennial herb	Broadleaved upland forest, coastal prairie, coastal scrub, north coast coniferous forest, riparian forest. Broadleafed upland forest, coastal prairie, coastal scrub, north coast coniferous forest, riparian forest. woodlands and clearings near coast, often in disturbed areas. 0-730 m. Within the 9-quad search, there is 19 Rarefind occurrences, with the closest being 6.9 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 2001.	(Mar)Apr-Aug	Moderate
Sidalcea malviflora ssp. *patula*	Siskiyou checkerbloom	-/-/1B.2	G5T2/S2	perennial rhizomatous herb	Coastal bluff scrub, coastal prairie, north coast coniferous forest. Coastal bluff scrub, coastal prairie, north coast coniferous forest. Open coastal forest, roadcuts. 5-1,255 m. Within the 9-quad search, there is 11 Rarefind occurrences, with the closest being 6.3 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 2014.	May-Aug	Moderate

Appendix 2
Regionally Occurring Special Status Plant Species Scoping List
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Latin Name	Common Name	FESA/CESA/CRPR[1]	Heritage Ranks[2]	Lifeform	Notes	Blooming Period	Potential for Occurrence
Sidalcea oregana ssp. *eximia*	coast checkerbloom	-/-/1B.2	G5T1/S1	perennial herb	Lower montane coniferous forest, meadow and seep, north coast coniferous forest, wetland. Meadows and seeps, north coast coniferous forest, lower montane coniferous forest. Near meadows, in gravelly soil. 5-1,805 m. Within the 9-quad search, there are 5 Rarefind occurrences, with the closest being 5.2 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 2007.	Jun-Aug	Moderate
Thermopsis robusta	robust false lupine	-/-/1B.2	G2/S2	perennial rhizomatous herb	Broadleaved upland forest, north coast coniferous forest, ultramafic. North coast coniferous forest, broadleafed upland forest. Ridgetops, sometimes on serpentine. 365-1,405 m. Within the 9-quad search, there is 1 Rarefind occurrences, with the closest being 11.4 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 2015.	May-Jul	Low
Tiarella trifoliata var. *trifoliata*	trifoliate laceflower	-/-/3.2	G5T5/S2S3	perennial rhizomatous herb	Lower montane coniferous forest, north coast coniferous forest. Lower montane coniferous forest, north coast coniferous forest. forest edge, moist shady banks. 170-1,500 m. There is no Rarefind occurrence for this taxon within the 9-quad search.	(May)Jun-Aug	Low
Trifolium howellii	Howell's clover	-/-/4.3	G4/S4	perennial herb	Lower montane coniferous forest, meadow and seep, upper montane coniferous forest, wetland. Meadows and seeps, lower montane coniferous forest, upper montane coniferous forest. Moist seeps. 800-1,800 m. There is no Rarefind occurrence for this taxon within the 9-quad search.	Jun-Aug	Low
Usnea longissima	Methuselah's beard lichen	-/-/4.2	G4/S4	fruticose lichen (epiphytic)	Broadleaved upland forest, north coast coniferous forest, oldgrowth, redwood. North coast coniferous forest, broadleafed upland forest. grows in the "redwood zone" on tree branches of a variety of trees, including big leaf maple, oaks, ash, douglas-fir, and bay. 45-1,465 m in california. Within the 9-quad search, there are 26 Rarefind occurrences, with the closest being 5.1 miles from the study area; the most recent reported observation date within the 9 quads for this taxon was 2003.	N/A	Low
Wyethia longicaulis	Humboldt County wyethia	-/-/4.3	G4/S4	perennial herb	Broadleaved upland forest, coastal prairie, lower montane coniferous forest, ultramafic. Broadleafed upland forest, coastal prairie, lower montane coniferous forest. Along Streams, seepage areas, sometimes on serpentine. 750-1,525 m. There is no Rarefind occurrence for this taxon within the 9-quad search.	May-Jul	Moderate

1. Species indicator status as assigned by Federal Endangered Species Act (FESA), California Endangered Species Act (CESA), California Native Plant Society (CNPS)
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
0.1: Seriously threatened in California
0.2: Moderately threatened in California
0.3: Not very threatened in California
E: Endangered
R: Rare
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

Regionally Occurring Special Status Animal Species Scoping List

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Appendix 3
Regionally Occurring Special Status Animal Species Scoping List
AMT, LLC. Korbel, California

Latin Name	Common Name	FESA/CESA/CDFW [1]	Heritage Ranks [2]	Taxonomic Group	Notes	Potential for Occurrence
Accipiter cooperii	Cooper's hawk	-/-/WL	G5/S4	Birds	Cismontane woodland, riparian forest, riparian woodland, upper montane coniferous forest. Woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains, also, live oaks. Within the 9-quad search, there are 2 Rarefind occurrences, with the closest being 8.7 miles from the study area; the most recent observation date within the 9 quads for this taxon was 2005.	Low
Accipiter gentilis	northern goshawk	-/-/SSC	G5/S3	Birds	North coast coniferous forest, subalpine coniferous forest, upper montane coniferous forest. Within, and in vicinity of, coniferous forest. Uses old nests, and maintains alternate sites. Usually nests on north slopes, near water. Red fir, lodgepole pine, Jeffrey pine, and aspens are typical nest trees. Within the 9-quad search, there is 1 Rarefind occurrence, with the closest being 10.6 miles from the study area; the most recent observation date within the 9 quads for this taxon was 2016.	Low
Accipiter striatus	sharp-shinned hawk	-/-/WL	G5/S4	Birds	Cismontane woodland, lower montane coniferous forest, riparian forest, riparian woodland. Ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats. Prefers riparian areas. North-facing slopes with plucking perches are critical requirements. Nests usually within 275 feet of water. Within the 9-quad search, there are 3 Rarefind occurrences, with the closest being 5.8 miles from the study area; the most recent observation date within the 9 quads for this taxon was 2005.	Low
Acipenser medirostris	green sturgeon	T/-/SSC	G3/S1S2	Fish	Aquatic, Klamath/north coast flowing waters, Sacramento/San Joaquin flowing waters. These are the most marine species of sturgeon. Abundance increases northward of Point Conception. Spawns in the Sacramento, Klamath, and Trinity Rivers. Spawns at temps between 8-14 °C. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock. There is no Rarefind occurrence for this taxon within the 9-quad search.	None
Anodonta californiensis	California floater	-/-/-	G3Q/S2?	Mollusks	Aquatic. Freshwater lakes and slow-moving streams and rivers. Taxonomy under review by specialists. Generally in shallow water. There is no Rarefind occurrence for this taxon within the 9-quad search.	Low
Aplodontia rufa humboldtiana	Humboldt mountain beaver	-/-/-	GSTNR/SNR	Mammals	Coastal scrub, redwood, riparian forest. Coast range in southwestern Del Norte County and northwestern Humboldt County. Variety of coastal habitats, including coastal scrub, riparian forests, typically with open canopy and thickly vegetated understory. There is no Rarefind occurrence for this taxon within the 9-quad search.	Low
Aquila chrysaetos	golden eagle	-/-/FP ; WL	G5/S3	Birds	Broadleaved upland forest, cismontane woodland, coastal prairie, Great Basin grassland, Great Basin scrub, Lower montane coniferous forest, Pinon and juniper woodlands, upper montane coniferous forest, valley and foothill grassland. Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range, also, large trees in open areas. Within the 9-quad search, there are 2 Rarefind occurrences, with the closest being 1.6 miles from the study area; the most recent observation date within the 9 quads for this taxon was 2006.	Low
Arborimus albipes	white-footed vole	-/-/SSC	G3G4/S2	Mammals	North coast coniferous forest, redwood, riparian forest. Mature coastal forests in Humboldt and Del Norte counties. Prefers areas near small, clear streams with dense alder and shrubs. Occupies the habitat from the ground surface to the canopy. Feeds in all layers and nests on the ground under logs or rock. Within the 9-quad search, there is 1 Rarefind occurrence, with the closest being 12.6 miles from the study area; the most recent observation date within the 9 quads for this taxon was 1949.	Low
Arborimus pomo	Sonoma tree vole	-/-/SSC	G3/S3	Mammals	North coast coniferous forest, oldgrowth, redwood. North coast fog belt from Oregon border to Sonoma County. In Douglas fir, redwood and montane hardwood-conifer forests. Feeds almost exclusively on Douglas fir needles. Will occasionally take needles of grand fir, hemlock or spruce. Within the 9-quad search, there are 23 Rarefind occurrences, with the closest being 2.1 miles from the study area; the most recent observation date within the 9 quads for this taxon was 1996.	Moderate
Ardea herodias	great blue heron	-/-/-	G5/S4	Birds	Brackish marsh, estuary, freshwater marsh, marsh and swamp, riparian forest, wetland. Colonial nester in tall trees, cliff sides, and sequestered spots on marshes. Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows. There is no Rarefind occurrence for this taxon within the 9-quad search.	Low

Appendix 3
Regionally Occurring Special Status Animal Species Scoping List
AMT, LLC. Korbel, California

Latin Name	Common Name	FESA/CESA/CDFW [1]	Heritage Ranks [2]	Taxonomic Group	Notes	Potential for Occurrence
Ascaphus truei	Pacific tailed frog	-/-/SSC	G4/S3S4	Amphiblans	Aquatic, Klamath/north coast flowing waters, lower montane coniferous forest, north coast coniferous forest, redwood, riparian forest. Occurs in montane hardwood-conifer, redwood, Douglas fir and ponderosa pine habitats. Restricted to perennial montane streams. Tadpoles require water below 15 degrees C. Within the 9-quad search, there are 19 Rarefind occurrences, with the closest being 0.6 miles from the study area; the most recent observation date within the 9 quads for this taxon was 2015.	Moderate
Bombus caliginosus	obscure bumble bee	-/-/-	G4?/S1S2	Insects	Coastal areas from Santa Barbara County to north to Washington state. Food plant genera include Baccharis, Cirsium, Lupinus, Lotus, Grindelia and Phacelia. Within the 9-quad search, there are 3 Rarefind occurrences, with the closest being 6 miles from the study area; the most recent observation date within the 9 quads for this taxon was 1968.	Low
Bombus occidentalis	western bumble bee	-/-/-	G2G3/S1	Insects	Once common and widespread, species has declined precipitously from central CA to southern B.C., perhaps from disease. Within the 9-quad search, there are 4 Rarefind occurrences, with the closest being 9.4 miles from the study area; the most recent observation date within the 9 quads for this taxon was 2015.	Moderate
Brachyramphus marmoratus	marbled murrelet	T/E/-	G3G4/S1	Birds	Lower montane coniferous forest, oldgrowth, redwood. Feeds near-shore, nests inland along coast from Eureka to Oregon border and from Half Moon Bay to Santa Cruz. Nests in old-growth redwood-dominated forests, up to six miles inland, often in Douglas fir. Within the 9-quad search, there are 13 Rarefind occurrences, with the closest being 6.3 miles from the study area; the most recent observation date within the 9 quads for this taxon was 1997.	Low
Charadrius montanus	mountain plover	-/-/SSC	G3/S2S3	Birds	Chenopod scrub, valley and foothill grassland. Short grasslands, freshly plowed fields, newly sprouting grain fields, and sometimes sod farms. Short vegetation, bare ground, and flat topography. Prefers grazed areas and areas with burrowing rodents. There is no Rarefind occurrence for this taxon within the 9-quad search.	Low
Contopus cooperi	olive-sided flycatcher	-/-/SSC	G4/S4	Birds	Lower montane coniferous forest, redwood, upper montane coniferous forest. Nesting habitats are mixed conifer, montane hardwood-conifer, Douglas fir, redwood, red fir and lodgepole pine. Most numerous in montane conifer forests where tall trees overlook canyons, meadows, lakes or other open terrain. There is no Rarefind occurrence for this taxon within the 9-quad search.	Moderate
Corynorhinus townsendii	Townsend's big-eared bat	-/-/SSC	G3G4/S2	Mammals	Broadleaved upland forest, chaparral, chenopod scrub, Great Basin grassland, Great Basin scrub, Joshua tree woodland, lower montane coniferous forest, meadow and seep, Mojavean desert scrub, riparian forest, riparian woodland, Sonoran desert scrub, Sonoran thorn woodland, upper montane coniferous forest, valley and foothill grassland. Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance. Within the 9-quad search, there is 1 Rarefind occurrence, with the closest being 13.3 miles from the study area; the most recent observation date within the 9 quads for this taxon was 1949.	Low
Empidonax traillii	willow flycatcher	-/E/-	G5/S1S2	Birds	Meadow and seep, riparian scrub, riparian woodland, wetland. Inhabits extensive thickets of low, dense willows on edge of wet meadows, ponds, or backwaters, 2,000-8,000 foot elevation. Requires dense willow thickets for nesting/roosting. Low, exposed branches are used for singing posts/hunting perches. There is no Rarefind occurrence for this taxon within the 9-quad search.	Low
Emys marmorata	western pond turtle	-/-/SSC	G3G4/S3	Reptiles	Aquatic, artificial flowing waters, Klamath/north coast flowing waters, Klamath/north coast standing waters, marsh and swamp, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, south coast flowing waters, south coast standing waters, wetland. A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6,000-foot elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 kilometers (km) from water for egg-laying. Within the 9-quad search, there are 2 Rarefind occurrences, with the closest being 9.7 miles from the study area; the most recent observation date within the 9 quads for this taxon was 2006.	Low
Entosphenus tridentatus	Pacific lamprey	-/-/SSC	G4/S4	Fish	Aquatic, Klamath/north coast flowing waters, Sacramento/San Joaquin flowing waters, south coast flowing waters. Found in Pacific coast streams north of San Luis Obispo County; however, regular runs in Santa Clara River. Size of runs is declining. Swift-current gravel-bottomed areas for spawning with water temps between 12-18 °C. Ammocoetes need soft sand or mud. There is no Rarefind occurrence for this taxon within the 9-quad search.	Low

Appendix 3
Regionally Occurring Special Status Animal Species Scoping List
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Latin Name	Common Name	FESA/CESA/CDFW [1]	Heritage Ranks [2]	Taxonomic Group	Notes	Potential for Occurrence
Erethizon dorsatum	North American porcupine	-/-/-	G5/S3	Mammals	Broadleaved upland forest, cismontane woodland, closed-cone coniferous forest, lower montane coniferous forest, north coast coniferous forest, upper montane coniferous forest. Forested habitats in the Sierra Nevada, Cascade, and Coast ranges, with scattered observations from forested areas in the transverse ranges. Wide variety of coniferous and mixed woodland habitat. There is no Rarefind occurrence for this taxon within the 9-quad search.	Low
Falco peregrinus anatum	American peregrine falcon	D/D/FP	G4T4/S3S4	Birds	Near wetlands, lakes, rivers, or other water, on cliffs, banks, dunes, mounds, also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site. There is no Rarefind occurrence for this taxon within the 9-quad search.	Low
Haliaeetus leucocephalus	bald eagle	D/E/FP	G5/S3	Birds	Lower montane coniferous forest, oldgrowth. Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water. Nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter. Within the 9-quad search, there is 1 Rarefind occurrence, with the closest being 12.1 miles from the study area; the most recent observation date within the 9 quads for this taxon was 2004.	Low
Icteria virens	yellow-breasted chat	-/-/SSC	G5/S3	Birds	Riparian forest, riparian scrub, riparian woodland. Summer resident, inhabits riparian thickets of willow and other brushy tangles near watercourses. Nests in low, dense riparian, consisting of willow, blackberry, wild grape, forages and nests within 10 feet of the ground. There is no Rarefind occurrence for this taxon within the 9-quad search.	Low
Martes caurina humboldtensis	Humboldt marten	-/CE/SSC	G5T1/S1	Mammals	North coast coniferous forest, oldgrowth, redwood. Occurs only in the coastal redwood zone from the Oregon border south to Sonoma County. Associated with late-successional coniferous forests, prefer forests with low, overhead cover. Within the 9-quad search, there is 1 Rarefind occurrence, with the closest being 3.7 miles from the study area; the most recent observation date within the 9 quads for this taxon was 1927.	Low
Myotis evotis	long-eared myotis	-/-/-	G5/S3	Mammals	Found in all brush, woodland and forest habitats from sea level to about 9,000 feet. Prefers coniferous woodlands and forests. Nursery colonies in buildings, crevices, spaces under bark, and snags. Caves used primarily as night roosts. There is no Rarefind occurrence for this taxon within the 9-quad search.	Low
Myotis thysanodes	fringed myotis	-/-/-	G4/S3	Mammals	In a wide variety of habitats, optimal habitats are pinyon-juniper, valley foothill hardwood and hardwood-conifer. Uses caves, mines, buildings or crevices for maternity colonies and roosts. There is no Rarefind occurrence for this taxon within the 9-quad search.	Low
Nycticorax nycticorax	black-crowned night heron	-/-/-	G5/S4	Birds	Marsh and swamp, riparian forest, riparian woodland, wetland. Colonial nester, usually in trees, occasionally in tule patches. Rookery sites located adjacent to foraging areas: lake margins, mud-bordered bays, marshy spots. There is no Rarefind occurrence for this taxon within the 9-quad search.	Low
Oncorhynchus clarkii clarkii	coast cutthroat trout	-/-/SSC	G4T4/S3	Fish	Aquatic, Klamath/north coast flowing waters. Small coastal streams from the Eel River to the Oregon border. Small, low gradient coastal streams and estuaries. Needs shaded streams with water temperatures less than 18°C, and small gravel for spawning. Within the 9-quad search, there are 6 Rarefind occurrences, with the closest being 8.6 miles from the study area; the most recent observation date within the 9 quads for this taxon was 2001.	None
Oncorhynchus kisutch	coho salmon - southern Oregon/northern California ESU	T/T/-	G4T2Q/S2?	Fish	Aquatic, Klamath/north coast flowing waters, Sacramento/San Joaquin flowing waters. Federal listing refers to populations between Cape Blanco, Oregon and Punta Gorda, Humboldt County, California. State listing refers to populations between the Oregon border and Punta Gorda, California. There is no Rarefind occurrence for this taxon within the 9-quad search.	Low
Oncorhynchus mykiss irideus	summer-run steelhead trout	-/-/SSC	G5T4Q/S2	Fish	Aquatic, Klamath/north coast flowing waters, Sacramento/San Joaquin flowing waters. Northern California coastal streams south to Middle Fork Eel River. Within range of Klamath Mountains province DPS[1] and Northern California DPS. Cool, swift, shallow water and clean loose gravel for spawning, and suitably large pools in which to spend the summer. Within the 9-quad search, there are 3 Rarefind occurrences, with the closest being 0.8 miles from the study area (Mad River); the most recent observation date within the 9 quads for this taxon was 1993.	Low

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Latin Name	Common Name	FESA/CESA/CDFW [1]	Heritage Ranks [2]	Taxonomic Group	Notes	Potential for Occurrence
Oncorhynchus mykiss irideus	steelhead - Klamath Mountains Province DPS	-/-/SSC	G5T3Q/S2	Fish	Aquatic, Klamath/North coast flowing waters, Sacramento/San Joaquin flowing waters. Northern California coastal streams south to Middle Fork Eel River. Within range of Klamath Mountains province DPS and Northern California DPS. Cool, swift, shallow water and clean loose gravel for spawning, and suitably large pools in which to spend the summer. Within the 9-quad search, there are 3 Rarefind occurrences, with the closest being 0.8 miles from the study area (Mad River); and the most recent observation date within the 9 quads for this taxon was 1993.	Low
Oncorhynchus mykiss irideus	steelhead - northern California DPS	T/-/-	G5T2T3Q/S2S3	Fish	Aquatic, Klamath/North coast flowing waters. Streams between Elk River, Oregon and the Klamath and Trinity rivers in California, inclusive. Minimum water depth for upstream migration is 18 centimeters (cm). Water velocities greater than 3-4 meters per second may impede upstream progress. There is no Rarefind occurrence for this taxon within the 9-quad search.	Low
Oncorhynchus tshawytscha	Chinook salmon - California coastal ESU	T/-/-	G5/S1	Fish	Aquatic, Sacramento/San Joaquin flowing waters. Federal listing refers to wild spawned, coastal, spring and fall runs between Redwood Creek, Humboldt County and Russian River, Sonoma County. Within the 9-quad search, there is 1 Rarefind occurrence, with the closest being 13.9 miles from the study area; the most recent observation date within the 9 quads for this taxon was 2000.	Low
Oncorhynchus tshawytscha	Chinook salmon - upper Klamath and Trinity Rivers ESU.	-/-/SSC	G5/S1S2	Fish	Aquatic, Sacramento/San Joaquin flowing waters. Federal listing refers to wild spawned, coastal, spring and fall runs between Redwood Creek, Humboldt County and Russian River, Sonoma County. Within the 9-quad search, there is 1 Rarefind occurrence, with the closest being 13.9 miles from the study area; the most recent observation date within the 9 quads for this taxon was 2000.	Low
Pandion haliaetus	osprey	-/-/WL	G5/S4	Birds	Riparian forest. Ocean shore, bays, freshwater lakes, and larger streams. Large nests built in tree-tops within 15 miles of a good fish-producing body of water. Within the 9-quad search, there are 2 Rarefind occurrences, with the closest being 13.3 miles from the study area; the most recent observation date within the 9 quads for this taxon was 1997.	Low
Pekania pennanti	fisher - West Coast DPS	PT/CT/SSC	G5T2T3Q/S2S3	Mammals	North coast coniferous forest, oldgrowth, riparian forest. Intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure. Uses cavities, snags, logs and rocky areas for cover and denning. Needs large areas of mature, dense forest. Within the 9-quad search, there are 16 Rarefind occurrences, with the closest being 5 miles from the study area; the most recent observation date within the 9 quads for this taxon was 2003.	Low
Phalacrocorax auritus	double-crested cormorant	-/-/WL	G5/S4	Birds	Riparian forest, riparian scrub, riparian woodland. Colonial nester on coastal cliffs, offshore islands, and along lake margins in the interior of the state. Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins. There is no Rarefind occurrence for this taxon within the 9-quad search.	Low
Plethodon elongatus	Del Norte salamander	-/-/WL	G4/S3	Amphibians	Oldgrowth. Old-growth associated species with optimum conditions in the mixed conifer/hardwood ancient forest ecosystem. Cool, moist, stable microclimate, a deep litter layer, closed multi-storied canopy, dominated by large, old trees. Within the 9-quad search, there are 5 Rarefind occurrences, with the closest being 5.2 miles from the study area; the most recent observation date within the 9 quads for this taxon was 1990.	Low
Poecile atricapillus	black-capped chickadee	-/-/WL	G5/S3	Birds	Riparian woodland. Inhabits riparian woodlands in Del Norte and northern Humboldt counties. Mainly found in deciduous tree-types, especially willows and alders, along large or small watercourses. There is no Rarefind occurrence for this taxon within the 9-quad search.	Moderate
Rana aurora	northern red-legged frog	-/-/SSC	G4/S3	Amphibians	Klamath/North coast flowing waters, riparian forest, riparian woodland. Humid forests, woodlands, grasslands, and streamsides in northwestern California, usually near dense riparian cover. Generally near permanent water, but can be found far from water, in damp woods and meadows, during non-breeding season. Within the 9-quad search, there are 21 Rarefind occurrences, with the closest being 2.1 miles from the study area; the most recent observation date within the 9 quads for this taxon was 2016.	Present

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Latin Name	Common Name	FESA/CESA/CDFW [1]	Heritage Ranks [2]	Taxonomic Group	Notes	Potential for Occurrence
Rana boylii	foothill yellow-legged frog	-/CT/SSC	G3/S3	Amphibians	Aquatic, chaparral, cismontane woodland, coastal scrub, Klamath/north coast flowing waters, lower montane coniferous forest, meadow and seep, riparian forest, riparian woodland, Sacramento/San Joaquin flowing waters. Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis. Within the 9-quad search, there are 8 Rarefind occurrences, with the closest being 5.4 miles from the study area; the most recent observation date within the 9 quads for this taxon was 2007.	Low
Rhyacotriton variegatus	southern torrent salamander	-/ /SSC	G3G4/S2S3	Amphibians	Lower montane coniferous forest, oldgrowth, redwood, riparian forest. Coastal redwood, Douglas fir, mixed conifer, montane riparian, and montane hardwood-conifer habitats. Old growth forest. Cold, well-shaded, permanent streams and seepages, or within splash zone or on moss-covered rocks within trickling water. Within the 9-quad search, there are 31 Rarefind occurrences, with the closest being 1.3 miles from the study area; the most recent observation date within the 9 quads for this taxon was 2015.	Moderate
Riparia riparia	bank swallow	-/T/-	G5/S2	Birds	Riparian scrub, riparian woodland. Colonial nester, nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting holes. Within the 9-quad search, there are 2 Rarefind occurrences, with the closest being 10.5 miles from the study area; the most recent observation date within the 9 quads for this taxon was 2012.	Low
Sphyrapicus ruber	red-breasted sapsucker	-/-/-	G5/S4	Birds	Breeds in mixed coniferous and mixed deciduous-coniferous forests and woodlands. Requires standing snags or hollow trees for nesting cavity. There is no Rarefind occurrence for this taxon within the 9-quad search.	Moderate
Strix occidentalis caurina	northern spotted owl	T/T/SSC	G3T3/S2S3	Birds	North coast coniferous forest, oldgrowth, redwood. Old-growth forests or mixed stands of old-growth and mature trees. Occasionally in younger forests with patches of big trees. High, multistory canopy dominated by big trees, many trees with cavities or broken tops, woody debris, and space under canopy. Within the 9-quad search, there are many Rarefind occurrences, with the closest being 0.7 miles from the study area; the most recent observation date within the 9 quads for this taxon was 2016. The study area contains limited habitat, but high-quality habitats exists adjacent to the study area.	Moderate
Thaleichthys pacificus	eulachon	T/-/-	G5/S3	Fish	Aquatic, Klamath/north coast flowing waters. Found in Klamath River, Mad River, Redwood Creek, and in small numbers in Smith River and Humboldt Bay tributaries. Spawn in lower reaches of coastal rivers with moderate water velocities and bottom of pea-sized gravel, sand, and woody debris. Within the 9-quad search, there are 2 Rarefind occurrences, with the closest being 9.6 miles from the study area; the most recent observation date within the 9 quads for this taxon was 2011.	Low

1. Species indicator status as assigned by Federal Endangered Species Act (FESA), California Endangered Species Act (CESA), California Department of Fish and Wildlife (CDFW)

CE: candidate endangered
CT: candidate threatened
D: delisted
DPS: distinct population segment
E: endangered
ESU: evolutionarily significant unit
FP: fully protected
PT: proposed threatened
SSC: species of special concern
T: threatened
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

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Observed Botanical Species List

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Appendix 4 Observed Botanical Species List AMT, LLC. Korbel, California				
Latin Name [1]	**Common Name** [2]	**Lifeform**	**Family**	**Status**
Abies concolor	white silver fir	tree	Pinaceae	native
Acer macrophyllum	bigleaf maple	tree	Sapindaceae	native
Achillea millefolium	yarrow	perennial herb	Asteraceae	native
Acmispon parviflorus	hill lotus	annual herb	Fabaceae	native
Agrostis capillaris	colonial bentgrass	perennial grass	Poaceae	non-native
Agrostis exarata	bentgrass	perennial grass	Poaceae	native
Agrostis stolonifera	redtop	perennial grass	Poaceae	non-native invasive
Aira caryophyllea	silvery hairgrass	annual grass	Poaceae	non-native invasive
Alnus rhombifolia	white alder	tree, shrub	Betulaceae	native
Alnus rubra	red alder	tree, shrub	Betulaceae	native
Amelanchier alnifolia var. *semiintegrifolia*	service berry	shrub	Rosaceae	native
Anaphalis margaritacea	pearly everlasting	perennial herb	Asteraceae	native
Anemone deltoidea	Columbian windflower	perennial herb	Ranunculaceae	native
Anisocarpus madioides	woodland madia	perennial herb	Asteraceae	native
Anthoxanthum odoratum	sweet vernal grass	annual, perennial grass	Poaceae	non-native invasive
Arbutus menziesii	madrono	tree	Ericaceae	native
Arctostaphylos columbiana	redwood manzanita	tree, shrub	Ericaceae	native
Arctostaphylos patula	green leaf manzanita	shrub	Ericaceae	native
Arrhenatherum elatius	tall oatgrass	perennial grass	Poaceae	non-native
Asarum caudatum	creeping wild ginger	perennial herb	Aristolochiaceae	native
Athyrium filix-femina var. *cyclosorum*	western lady fern	fern	Woodsiaceae	native
Avena fatua	wildoats	annual grass	Poaceae	non-native invasive
Baccharis pilularis ssp. *consanguinea*	coyote brush	shrub	Asteraceae	native
Bellis perennis	English lawn daisy	perennial herb	Asteraceae	non-native invasive
Berberis nervosa	Oregon grape	shrub	Berberidaceae	native
Blechnum spicant	deer fern	fern	Blechnaceae	native

Appendix 4 Observed Botanical Species List AMT, LLC. Korbel, California				
Latin Name [1]	**Common Name** [2]	**Lifeform**	**Family**	**Status**
Brassica nigra	black mustard	annual herb	Brassicaceae	non-native invasive
Briza maxima	rattlesnake grass	annual grass	Poaceae	non-native invasive
Briza minor	little rattlesnake grass	annual grass	Poaceae	non-native
Brodiaea elegans	harvest brodiaea	perennial herb	Themidaceae	native
Bromus carinatus var. *carinatus*	California brome	perennial grass	Poaceae	native
Bromus diandrus	ripgut brome	annual grass	Poaceae	non-native invasive
Bromus tectorum	cheatgrass	annual grass	Poaceae	non-native invasive
Calochortus tolmiei	hairy star tulip	perennial herb	Liliaceae	native
Campanula scouleri	Scouler's harebell	perennial herb	Campanulaceae	native
Cardamine californica	bitter cress	perennial herb	Brassicaceae	native
Carex athrostachya	slender leaved sedge	perennial grasslike herb	Cyperaceae	native
Carex leptopoda	slender-footed sedge	perennial grasslike herb	Cyperaceae	native
Carex multicostata	many ribbed sedge	perennial grasslike herb	Cyperaceae	native
Carex praticola	meadow sedge	perennial grasslike herb	Cyperaceae	rare
Carex unilateralis	lateral sedge	perennial grasslike herb	Cyperaceae	native
Ceanothus integerrimus	deer brush	shrub	Rhamnaceae	native
Ceanothus thyrsiflorus	blueblossom	tree, shrub	Rhamnaceae	native
Chamerion angustifolium ssp. *circumvagum*	fireweed	perennial herb	Onagraceae	native
Chimaphila umbellata	Blake's prince's pine	perennial herb	Ericaceae	native
Cirsium arvense	Canada thistle	perennial herb	Asteraceae	non-native invasive
Cirsium vulgare	bullthistle	perennial herb	Asteraceae	non-native invasive
Claytonia perfoliata ssp. *perfoliata*	claytonia	annual herb	Montiaceae	native
Claytonia sibirica	candy flower	perennial herb	Montiaceae	native
Clintonia uniflora	bride's bonnet	perennial herb	Liliaceae	native
Corallorhiza maculata	summer coral root	perennial herb	Orchidaceae	native
Corylus cornuta ssp. *californica*	beaked hazelnut	shrub	Betulaceae	native

Appendix 4 Observed Botanical Species List AMT, LLC. Korbel, California				
Latin Name [1]	**Common Name** [2]	**Lifeform**	**Family**	**Status**
Cynoglossum grande	houndstongue	perennial herb	Boraginaceae	native
Cynosurus echinatus	dogtail grass	annual grass	Poaceae	non-native invasive
Cyperus eragrostis	tall flatsedge	perennial grasslike herb	Cyperaceae	native
Dactylis glomerata	orchardgrass	perennial grass	Poaceae	non-native invasive
Danthonia californica	California oatgrass	perennial grass	Poaceae	native
Delphinium decorum ssp. *tracyi*	Tracy's larkspur	perennial herb	Ranunculaceae	native
Dichelostemma ida-maia	firecracker flower	perennial herb	Themidaceae	native
Digitalis purpurea	foxglove	perennial herb	Plantaginaceae	non-native invasive
Elymus glaucus ssp. *glaucus*	blue wild rye	perennial grass	Poaceae	native
Epilobium brachycarpum	willow herb	annual herb	Onagraceae	native
Epilobium ciliatum ssp. *glandulosum*	glandular willowherb	perennial herb	Onagraceae	native
Equisetum telmateia ssp. *braunii*	giant horsetail	fern	Equisetaceae	native
Erodium botrys	big heron bill	annual herb	Geraniaceae	non-native
Festuca idahoensis	blue fescue	perennial grass	Poaceae	native
Festuca microstachys	small fescue	annual grass	Poaceae	native
Festuca occidentalis	western fescue	perennial grass	Poaceae	native
Festuca perennis	Italian rye grass	annual, perennial grass	Poaceae	non-native
Fragaria vesca	wild strawberry	perennial herb	Rosaceae	native
Frangula californica	California coffeeberry	shrub	Rhamnaceae	native
Fritillaria affinis	checker lily	perennial herb (bulb)	Liliaceae	native
Galium aparine	cleavers	annual herb	Rubiaceae	native
Galium triflorum	sweet bedstraw	annual herb	Rubiaceae	native
Glyceria declinata	low mannagrass	perennial grass	Poaceae	non-native invasive
Helenium bigelovii	Bigelow's sneezeweed	perennial herb	Asteraceae	native
Holcus lanatus	common velvetgrass	perennial grass	Poaceae	non-native invasive
Holodiscus discolor	oceanspray	shrub	Rosaceae	native

Appendix 4 Observed Botanical Species List AMT, LLC. Korbel, California				
Latin Name [1]	**Common Name** [2]	**Lifeform**	**Family**	**Status**
Hypericum perforatum	Klamathweed	perennial herb	Hypericaceae	non-native invasive
Hypochaeris glabra	smooth cat's ear	annual herb	Hypericaceae	non-native invasive
Hypochaeris radicata	hairy cats ear	perennial herb	Asteraceae	non-native invasive
Hypogymnia inactiva	hypogymnia lichen	lichen	Parmeliaceae	native
Isothecium sp.	isothecium moss	moss	Brachytheciaceae	native
Juncus bolanderi	Bolander's rush	perennial grasslike herb	Juncaceae	native
Juncus bufonius var. *bufonius*	toad rush	perennial grasslike herb	Juncaceae	native
Juncus effusus ssp. *pacificus*	pacific rush	perennial grasslike herb	Juncaceae	native
Juncus patens	rush	perennial grasslike herb	Juncaceae	native
Kindbergia sp.	kindbergia moss	moss	Brachytheciaceae	native
Lathyrus vestitus	pacific pea	perennial herb	Fabaceae	n/a
Leucanthemum vulgare	oxe eye daisy	perennial herb	Asteraceae	non-native invasive
Linum bienne	flax	annual herb	Linaceae	non-native
Lobaria pulmonaria	lobaria lichen	lichen	Lobariaceae	native
Lupinus albifrons	silver bush lupine	shrub	Fabaceae	native
Lupinus bicolor	miniature lupine	annual or perennial herb	Fabaceae	native
Lysimachia latifolia	pacific starflower	perennial herb	Myrsinaceae	native
Madia gracilis	gumweed	annual herb	Asteraceae	native
Maianthemum stellatum	starry false lily of the valley	perennial herb	Ruscaceae	native
Mentha pulegium	pennyroyal	perennial herb	Lamiaceae	non-native invasive
Mimulus dentatus	tooth leaved monkeyflower	perennial herb	Phrymaceae	native
Mnium sp.	mnium moss	moss	Mniaceae	native
Navarretia squarrosa	skunkweed	annual herb	Polemoniaceae	native
Neckera sp.	neckera moss	moss	Neckeraceae	native
Orthotrichum sp.	orthotrichum moss	moss	Orthotrichaceae	native
Osmorhiza berteroi	sweetcicely	perennial herb	Apiaceae	native

Appendix 4 Observed Botanical Species List AMT, LLC. Korbel, California				
Latin Name [1]	**Common Name** [2]	**Lifeform**	**Family**	**Status**
Oxalis oregana	redwood sorrel	perennial herb	Oxalidaceae	native
Parentucellia viscosa	yellow parentucellia	annual herb	Orobanchaceae	non-native invasive
Parmotrema sp.	parmotrema lichen	lichen	Parmeliaceae	native
Pentagramma triangularis	gold back fern	fern	Pteridaceae	native
Philadelphus lewisii	wild mock orange	shrub	Hydrangeaceae	native
Phoradendron leucarpum ssp. *tomentosum*	mistletoe	shrub (parasitic)	Viscaceae	native
Pinus ponderosa	yellow pine	tree	Pinaceae	native
Plantago lanceolata	ribwort	perennial herb	Plantaginaceae	non-native invasive
Plantago subnuda	naked plantain	perennial herb	Plantaginaceae	native
Poa annua	annual blue grass	annual grass	Poaceae	non-native
Poa pratensis	Kentucky blue grass	perennial grass	Poaceae	non-native invasive
Polystichum munitum	western sword fern	fern	Dryopteridaceae	native
Polytrichum sp.	polytrichum moss	moss	Polytrichaceae	native
Porella sp.	porella moss	liverwort	Porellaceae	native
Potamogeton natans	floating pondweed	perennial herb (aquatic)	Potamogetonaceae	native
Pseudocyphellaria anomala	pseudocyphellaria lichen	lichen	Lobariaceae	native
Pseudotsuga menziesii var. *menziesii*	Douglas fir	tree	Pinaceae	native
Pteridium aquilinum var. *pubescens*	western bracken fern	fern	Dennstaedtiaceae	native
Quercus garryana	Oregon oak	tree	Fagaceae	native
Quercus kelloggii	California black oak	tree	Fagaceae	native
Ramalina menziesii	ramalina lichen	lichen	Ramalinaceae	native
Ranunculus occidentalis var. *occidentalis*	western buttercup	perennial herb	Ranunculaceae	native
Ribes sanguineum var. *glutinosum*	flowering currant	shrub	Grossulariaceae	native
Rosa gymnocarpa var. *gymnocarpa*	wood rose	shrub	Rosaceae	native
Rubus armeniacus	Himalayan blackberry	shrub	Rosaceae	non-native invasive
Rubus leucodermis	white stemmed raspberry	shrub	Rosaceae	native

Appendix 4 Observed Botanical Species List AMT, LLC. Korbel, California				
Latin Name [1]	**Common Name** [2]	**Lifeform**	**Family**	**Status**
Rubus parviflorus	thimbleberry	vine, shrub	Rosaceae	native
Rubus spectabilis	salmon berry	shrub	Rosaceae	native
Rubus ursinus	California blackberry	vine, shrub	Rosaceae	native
Rumex acetosella	sheep sorrel	perennial herb	Polygonaceae	non-native invasive
Rumex crispus	curly dock	perennial herb	Polygonaceae	non-native invasive
Salix lasiolepis	arroyo willow	tree, shrub	Salicaceae	native
Sanicula crassicaulis	pacific sanicle	perennial herb	Apiaceae	native
Sanicula tuberosa	turkey pea	perennial herb	Apiaceae	native
Scoliopus bigelovii	slink pod	perennial herb	Liliaceae	native
Selaginella wallacei	Wallace's spike moss	moss-like	Selaginellaceae	native
Sisyrinchium bellum	Western blue eyed grass	perennial herb	Iridaceae	native
Spergularia rubra	ruby sandspurry	annual or perennial herb	Caryophyllaceae	non-native
Stachys ajugoides var. *rigida*	hedge nettle	perennial herb	Lamiaceae	native
Symphoricarpos albus var. *laevigatus*	snowberry	shrub	Caprifoliaceae	native
Taraxacum officinale	red seeded dandelion	perennial herb	Asteraceae	non-native invasive
Tellima grandiflora	fringe cups	perennial herb	Saxifragaceae	native
Toxicodendron diversilobum	poison oak	vine, shrub	Anacardiaceae	native
Trifolium obtusiflorum	creek clover	annual herb	Fabaceae	native
Trifolium repens	white clover	perennial herb	Fabaceae	non-native
Umbellularia californica	California bay	tree	Lauraceae	native
Usnea perplexans	usnea lichen	lichen	Parmeliaceae	native
Viola glabella	stream violet	perennial herb	Violaceae	native
Whipplea modesta	modesty	vine, shrub	Hydrangeaceae	native

1. Nomenclature follows Jepson eFlora (UCB, 2016)
2. Nomenclature follows Calflora database (Calflora, 2016)

Observed Animal Species List

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Appendix 5 Observed Animal Species List AMT, LLC. Korbel, California		
Latin Name	**Common Name**	**Taxonomic Group**
Agelaius phoeniceus	red-winged blackbird	Bird
Bombycilla cedrorum	cedar waxwing	Bird
Buteo jamaicensis	red-tailed hawk	Bird
Buteo lineatus	red-shouldered hawk	Bird
Callipepla californica	California quail	Bird
Calypte anna	Anna's hummingbird	Bird
Cathartes aura	turkey vulture	Bird
Certhia americana	brown creeper	Bird
Cervus canadensis roosevelti	Roosevelt elk	Mammal
Chamaea fasciata	wrentit	Bird
Colaptes auratus	northern flicker	Bird
Corvus brachyrhynchos	American crow	Bird
Corvus corax	common raven	Bird
Cyanocitta stelleri	Steller's jay	Bird
Dryocopus pileatus	pileated woodpecker	Bird
Elgaria multicarinata scincicauda	Oregon alligator lizard	Reptile
Falco sparverius	American kestrel	Bird
Geothlypis trichas	common yellowthroat	Bird
Haemorhous mexicanus	house finch	Bird
Hirundo rustica	barn swallow	Bird
Lynx rufus	bobcat	Mammal
Meleagris gallopavo	wild turkey	Bird
Melospiza melodia	song sparrow	Bird
Odocoileus hemionus columbianus	Columbian black-tailed deer	Mammal
Oreothlypis celata	orange-crowned warbler	Bird
Passerella iliaca	fox sparrow	Bird
Patagioenas fasciata	band-tailed pigeon	Bird
Pheucticus melanocephalus	black-headed grosbeak	Bird
Picoides villosus	hairy woodpecker	Bird
Pipilo maculatus	spotted towhee	Bird
Poecile rufescens	chestnut-backed chickadee	Bird
Psaltriparus minimus	bushtit	Bird
Pseudacris regilla	northern pacific treefrog	Amphibian
Rana aurora	northern red-legged frog	Amphibian
Regulus calendula	ruby-crowned kinglet	Bird

Appendix 5 Observed Animal Species List AMT, LLC. Korbel, California		
Latin Name	**Common Name**	**Taxonomic Group**
Regulus satrapa	golden-crowned kinglet	Bird
Sayornis nigricans	black phoebe	Bird
Sitta canadensis	red-breasted nuthatch	Bird
Spinus psaltria	lesser goldfinch	Bird
Sturnella neglecta	western meadowlark	Bird
Sturnus vulgaris	European starling	Bird
Tachycineta thalassina	violet-green swallow	Bird
Thamnophis sp.	gartersnake	Reptile
Troglodytes pacificus	pacific wren	Bird
Turdus migratorius	American robin	Bird
Zonotrichia atricapilla	golden-crowned sparrow	Bird
Zonotrichia leucophrys	white-crowned sparrow	Bird

Site Photographs 6

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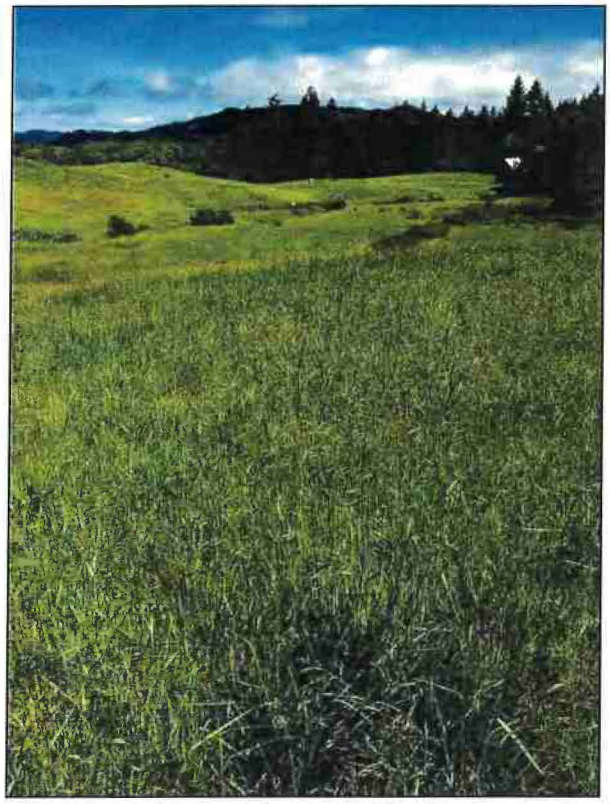


Photo 1. Looking south over California oat grassland containing northern meadow sedge occurrence #2 (Figure 2). Photo taken June 1, 2017.



Photo 2. Northern red-legged frog observed in the branch of Cowan Creek with perennial water flow. Photo taken August 2, 2016.



Photo 3. Looking north in branch of Cowan Creek with perennial water flow. Photo taken April 14, 2017.



Photo 4. Example of Douglas fir recruitment in the understory of Oregon white oak woodlands. Photo taken April 14, 2017.

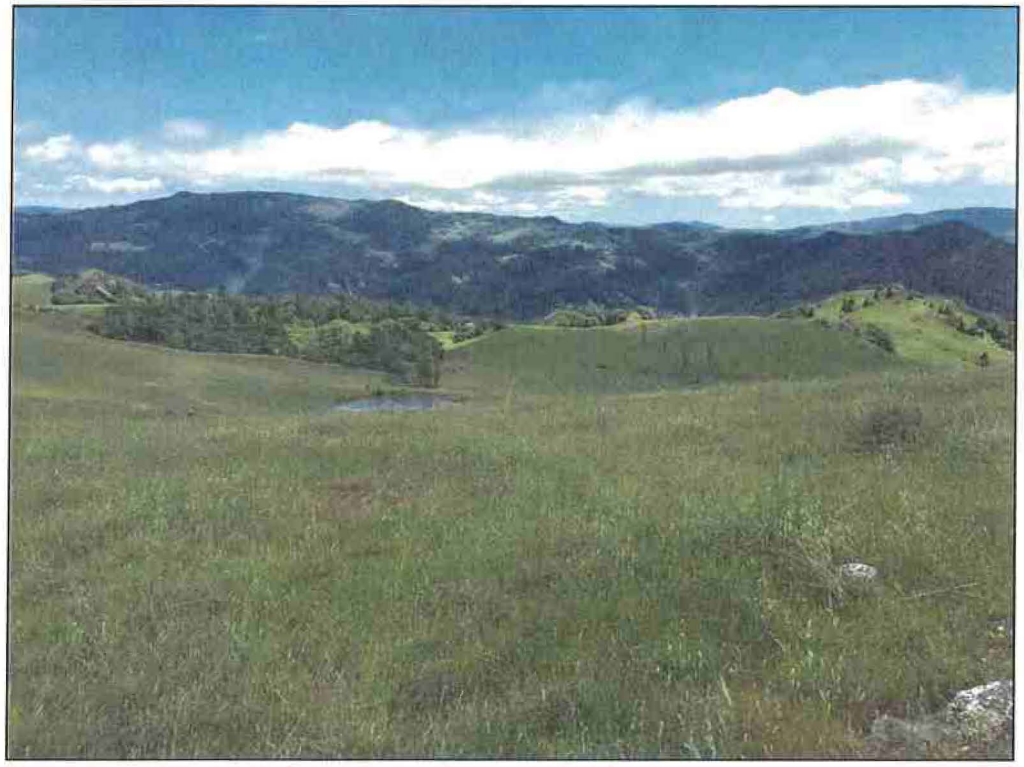


Photo 5. Looking south from the northernmost California oat grass prairie shown on Figure 2. Photo taken June 1, 2017.

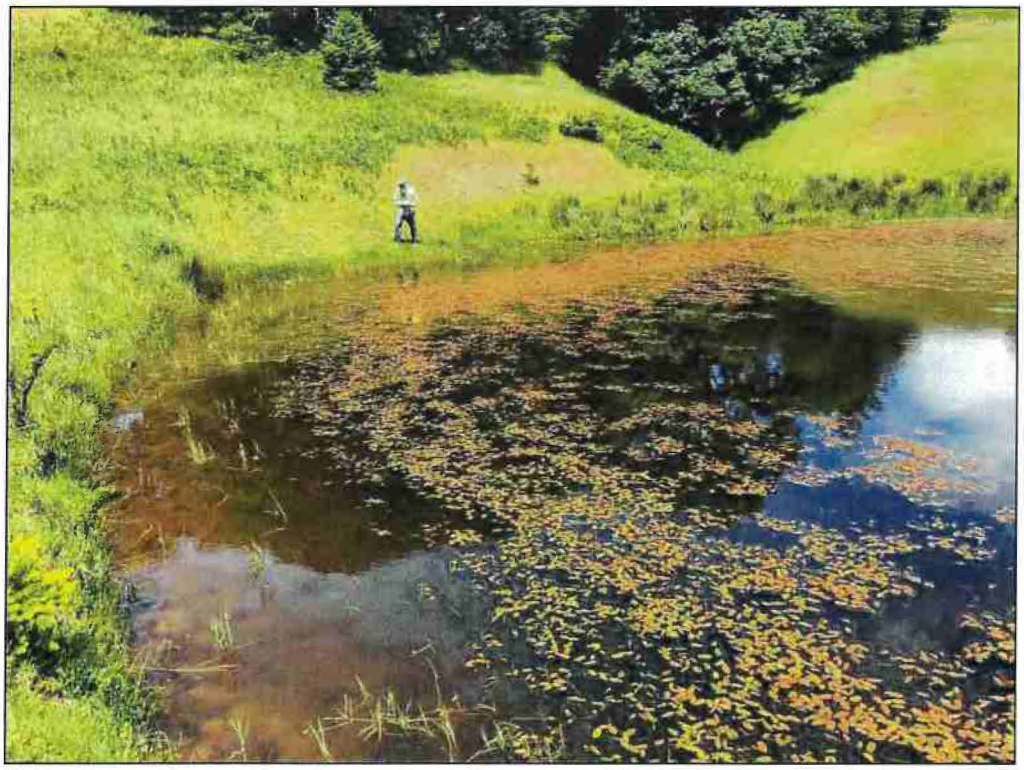


Photo 6. Looking northeast over an existing pond with floating pondweed. Photo taken June 1, 2017.



Photo 7. Branch of Cowan Creek with seasonally intermittent water flow, approximately 300 feet downstream from northern meadow sedge occurrence #2. Photo taken August 2, 2016.

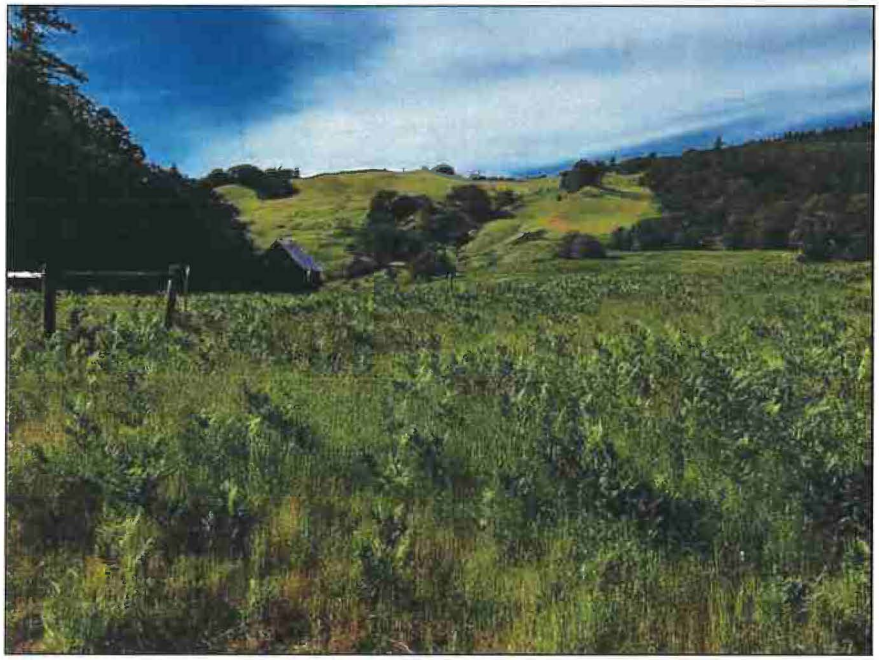


Photo 8. Looking north in the grassland between the riparian areas containing California bay forests shown on Figure 2. Photo taken June 1, 2017.

Wetland and Other Waters Delineation

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Preliminary Jurisdictional Wetland and Other Waters Delineation

Adesa Organic
Korbel, California

Prepared for:

Adesa Organic

SHN Engineers & Geologists

812 W. Wabash Ave.
Eureka, CA 95501-2138
707-441-8855

December 2016
016178.100

Reference: 016178.100

Preliminary Jurisdictional Wetland and Other Waters Delineation

Adesa Organic
Korbel, California

Prepared for:

Adesa Organic

Prepared by:

SHN
Engineers & Geologists
812 W. Wabash Ave
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December 2016

QA/QC: GDO___

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Abbreviations and Acronyms

APN	Assessor's parcel number
CDEC	California Data Exchange Center
CFR	Code of Federal Regulations
CT	control point
CWA	Clean Water Act
EPA	U.S. Environmental Protection Agency
ERDC/CRREL	U.S. Army Engineer Research and Development Center/Cold Regions Research and Engineering Laboratory
FAC	facultative wetland plant species
FACU	facultative-upland wetland plant species
FACW	facultative-wet wetland plant species
GIS	geographic information system
GPS	global positioning system
NCDC	National Climatic Data Center
NL	not listed Wetland plant species
NOAA	National Oceanic & Atmospheric Administration
NR	no reference
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OBL	obligate wetland plant species
OHWM	ordinary high water mark
OSDs	official soil series descriptions
Redox	redoximorphic
RWQCB	California Regional Water Quality Control Board
R	riverine
SHN	SHN Engineers & Geologists
SWRCB	State Water Resources Control Board
TP	test pit
U	upland site
UPL	upland wetland plant species
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USDA	United States Department of Agriculture
USFWS	U. S. Fish & Wildlife Service
USGS	United States Geological Survey
W	wetland site
WDRs	waste discharge requirements
WETS	Climate Analysis for Wetlands Tables
WoS	waters of the State
WoUS	waters of the United States

1.0 Introduction

SHN Engineers & Geologists has prepared this preliminary jurisdictional wetland delineation for Adesa Organic in Korbel, California. Field work was performed by SHN staff.

1.1 Purpose

The purpose of this report is to identify potential jurisdictional wetlands and other waters of the U.S. at the project sites, as defined by the United States Army Corps of Engineers (USACE) methodology. Vegetation, soils, and hydrology were used as wetland parameters for site investigations. The identification of wetlands within the study area will help guide the design and construction of future development within the study area and avoid impacts to jurisdictional wetlands. The results of this report will be used to facilitate the permitting process for the proposed project.

1.2 Project Location

The project is located near Maple Creek, an incorporated town of Humboldt County (Figure 1; United States Geological Survey [USGS] Mad River Buttes 7.5-minute Quadrangle, Township 3 North, Range 3 East, Section 2, Humboldt Meridian). The project is located in two different parcels: 23333 Maple Creek Road, a 33.6-acre portion of a 185-acre parcel (Assessor's parcel numbers [APN] 315-146-008 and 315-222-003, referred to as the 185 site) and at 23550 Maple Creek Road, a 73.0-acre portion of a 433-acre parcel (APNs 315-211-04, 315-211-03, and 315-145-02, referred to as the 433 site), with a central location latitude and longitude of 40.671001° and -123.810537°, respectively. The total study area contains 106.6 acres. Figure 2 presents a site overview map and Figures 3 through 6 present site detail maps.

2.0 Project Description

Agricultural-related development is being considered within the study area. This report will assist in determining appropriate locations for development activities. The 185 site has an existing residence (built in approximately 2001), with several agricultural-exempt outbuildings constructed between 2002 and 2006, with an existing well, water tanks, and a pond (Figure 2 and Figure 6). The 433 site has three existing buildings: a shop and barn structure in the eastern portion of the project area and a livestock shed in the western portion. The shop and barn were built in 2009 with a 0.1 acre pond added at the same time (Photo B2). There are two other existing ponds in the 433-study area, currently used for livestock (Figure 2 and Figure 3).

Before designing the project, wetland delineations must be performed to determine the locations of setbacks for new development.

3.0 Environmental Setting

Elevations throughout the project area range from approximately 1,800 to 2,600 feet above mean sea level. The topography is mostly steep hilly terrain of 25-45 percent slopes, with some areas of gently sloping prairies (0-15 percent slope) within the project area (see Figure 1 and Appendix B, Photo B1).

The average 30-year data (1980 to 2010) precipitation for this area from October 1 through September 30 is 70.00 inches (NOAA, 2016). Rainfall for the period from October 1, 2015, through September 30, 2016, is 71.60 inches (CDEC, 2016), indicating that the 2015-2016 rain season is within a normal category. (Data is from the nearby Bridgeville, California precipitation data station, which is at a similar elevation of 2,100 feet.) Although, according to the Watershed Enhancement Tracking System (WETS) data, the most recent months before the wetland delineation was conducted were drier than a normal period (Table 1; USDA-NRCS, 2016). The investigation was performed between August 2 and October 7, 2016. After comparing these two rainfall data sets, it is our professional judgment that the wetland delineation was performed under normal hydrologic conditions and hydrology is not considered in a "problematic" condition.

Table 1
WETS Rainfall Data
Adesa Organic, Korbel, California

Month	WETS data	Rank	Weight	Value
July 2016	Normal	2	3	6
June 2016	Below Normal	1	2	2
May 2016	Below Normal	1	1	1
			Total[1]	**9**

1. A sum of 6-9 prior to site investigation is considered a drier than normal rainfall.
10-14 prior to site investigation is considered a normal rainfall.
15-18 prior to site investigation is considered a wetter than normal rainfall.

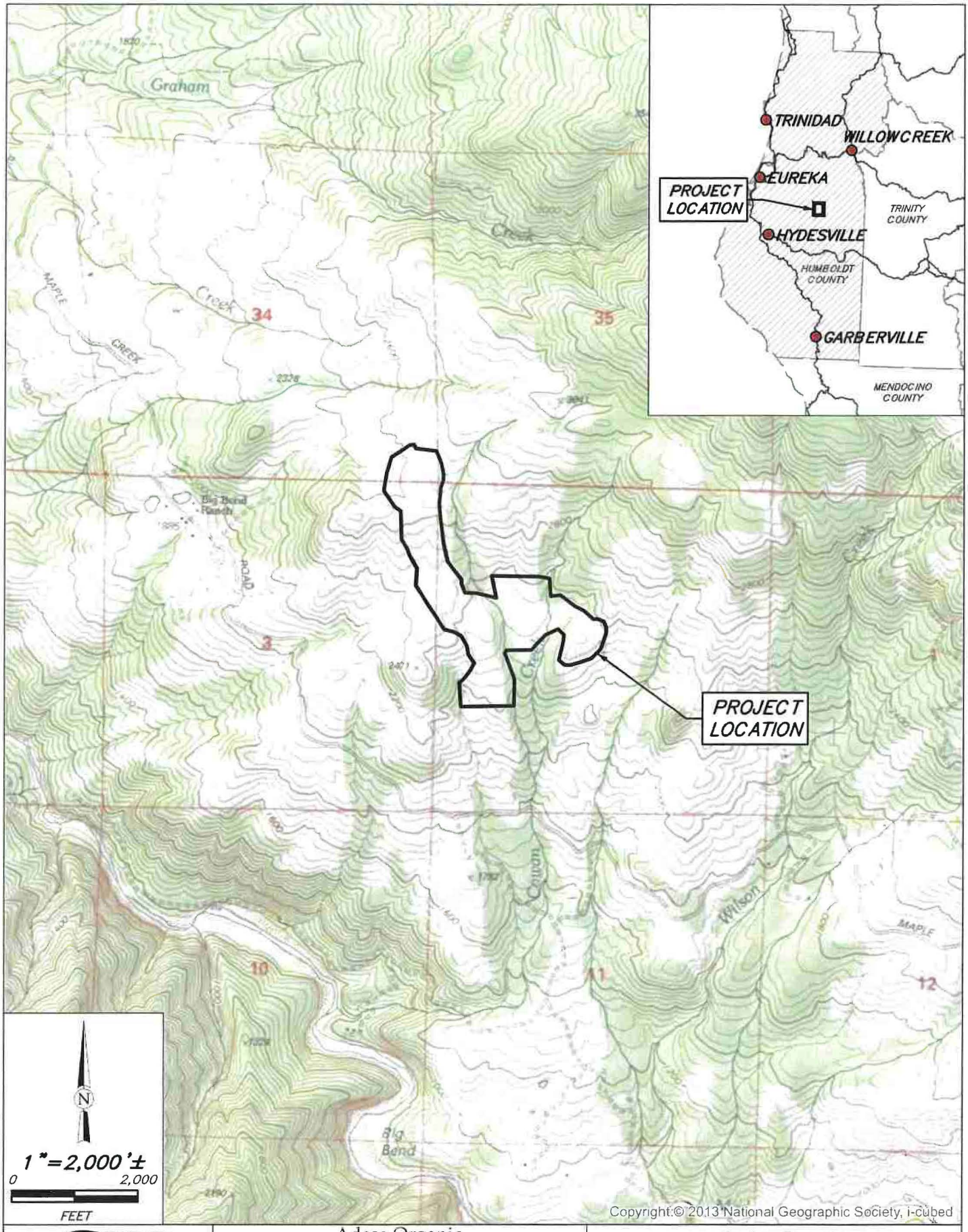
The United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) has a riverine (R) system mapped in the Cowan Creek drainage flowing though the project area (see Appendix A) and two other minor tributaries that drain into the Mad River.

4.0 Vegetation

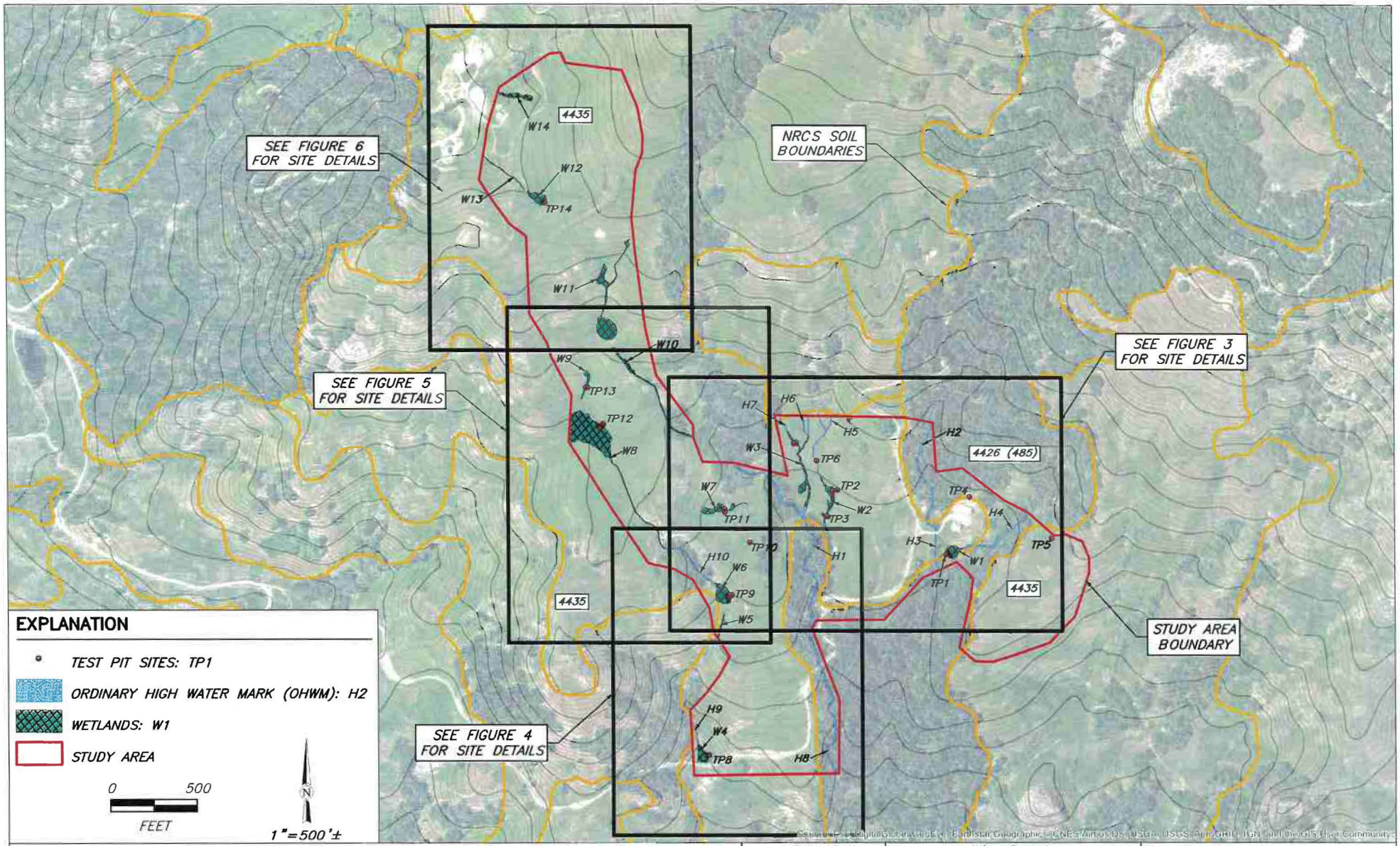
The study area consists of low-sloped natural prairies and a graded zone within steeper topography, mainly on the southern aspect. Within prairie habitat, grass species comprise the majority of plant cover and biomass, with other non-native ruderal herbaceous species composing the remainder. Riparian overstory was dominated by Oregon oak (*Quercus garryana* [FACU]), white alder (*Alnus rhombifolia* [FACW]), Douglas Fir (*Pseudotsuga menziesii* var. *menziesii* [FACU]), and bigleaf maple (*Acer macrophyllum* [FACU]). Riparian understory was dominated by ocean spray (*Holodiscus discolor* [FACU]), poison oak (*Toxicodendron diversilobum* [FAC]), in addition to a diversity of ferns and grasses. A complete plant list of the whole study area is compiled in Table D-1 in Appendix D.

5.0 Geologic Setting and Soil Composition

The site is set in the coastal mountains approximately 19 miles southeast of Eureka, California. The lithology is composed of the Franciscan Complex and ranges in age from the Jurassic to Miocene, which originated on the seafloor and pushed against the continent by plate tectonics, forming the present day coastal mountains. The project is located in the Central belt portion of the Franciscan complex and is described as a mélange, or a mixture of metamorphosed sandstone and argillite (fine-grained sedimentary rock composed mainly of clay particles).



Consulting Engineers & Geologists, Inc.	Adesa Organic Wetland Delineation Report Korbel, Humboldt County, California	Project Location Map SHN 016178.100
October 2016	Figure1_ProjectLocationMap	Figure 1



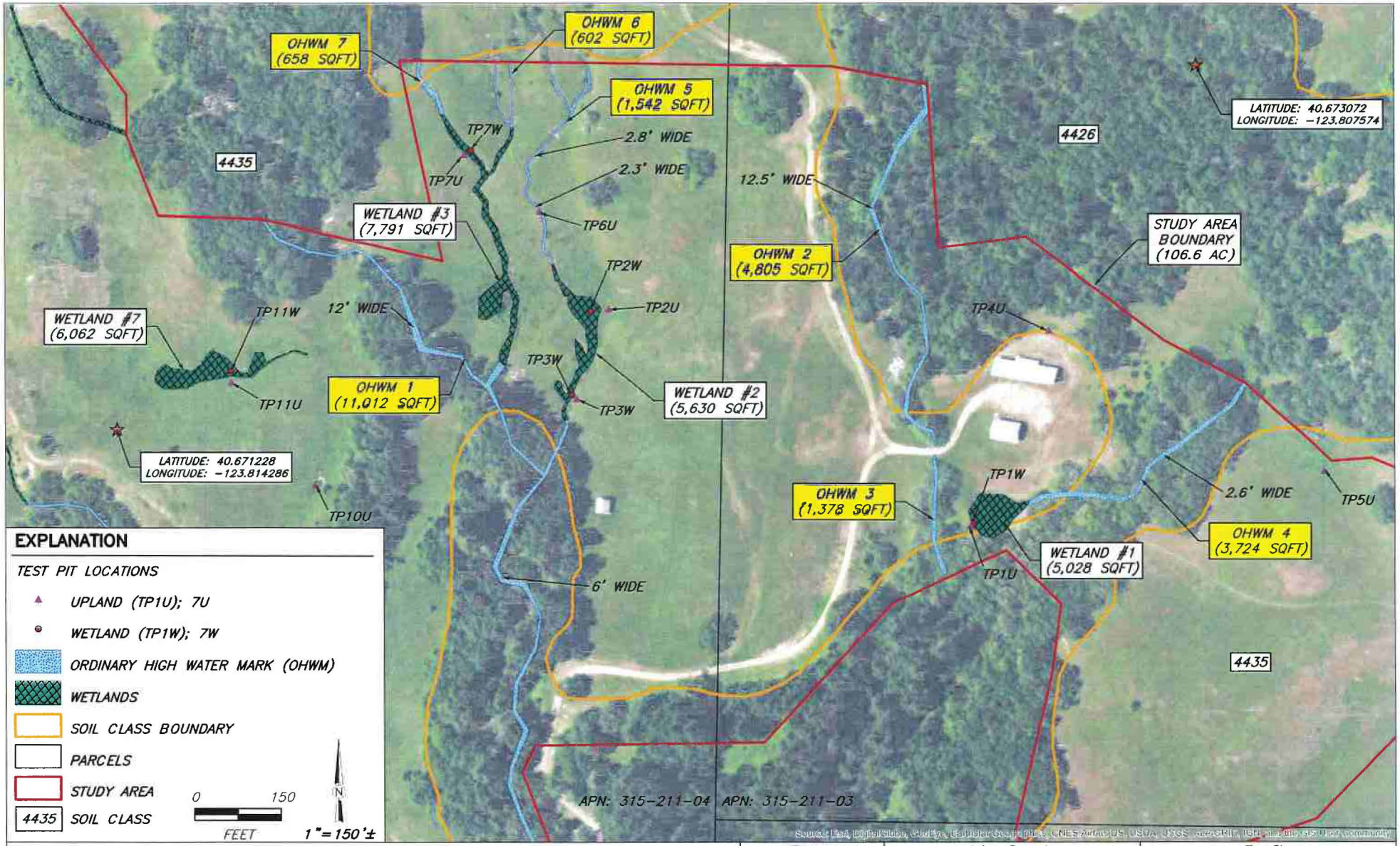
NOTES:
4426 (485): PASTURE ROCK-COYOTE ROCK-MANEZE COMPLEX 15 TO 20 PERCENT SLOPE SOILS SERIES;
4435: ELKCAMP-AIRSTRIP-HIGHYORK COMPLEX 9 TO 30 PERCENT SLOPE SOIL SERIES;
IMAGE SOURCE: ESRI (2014)

SHN Consulting Engineers & Geologists, Inc.

Adesa Organic
Wetland & OHWM Delineation
Korbel, Humboldt County, California

Site Overview Map
SHN 016178.100

November 2016 | Figure2_SiteOverviewMap | Figure 2



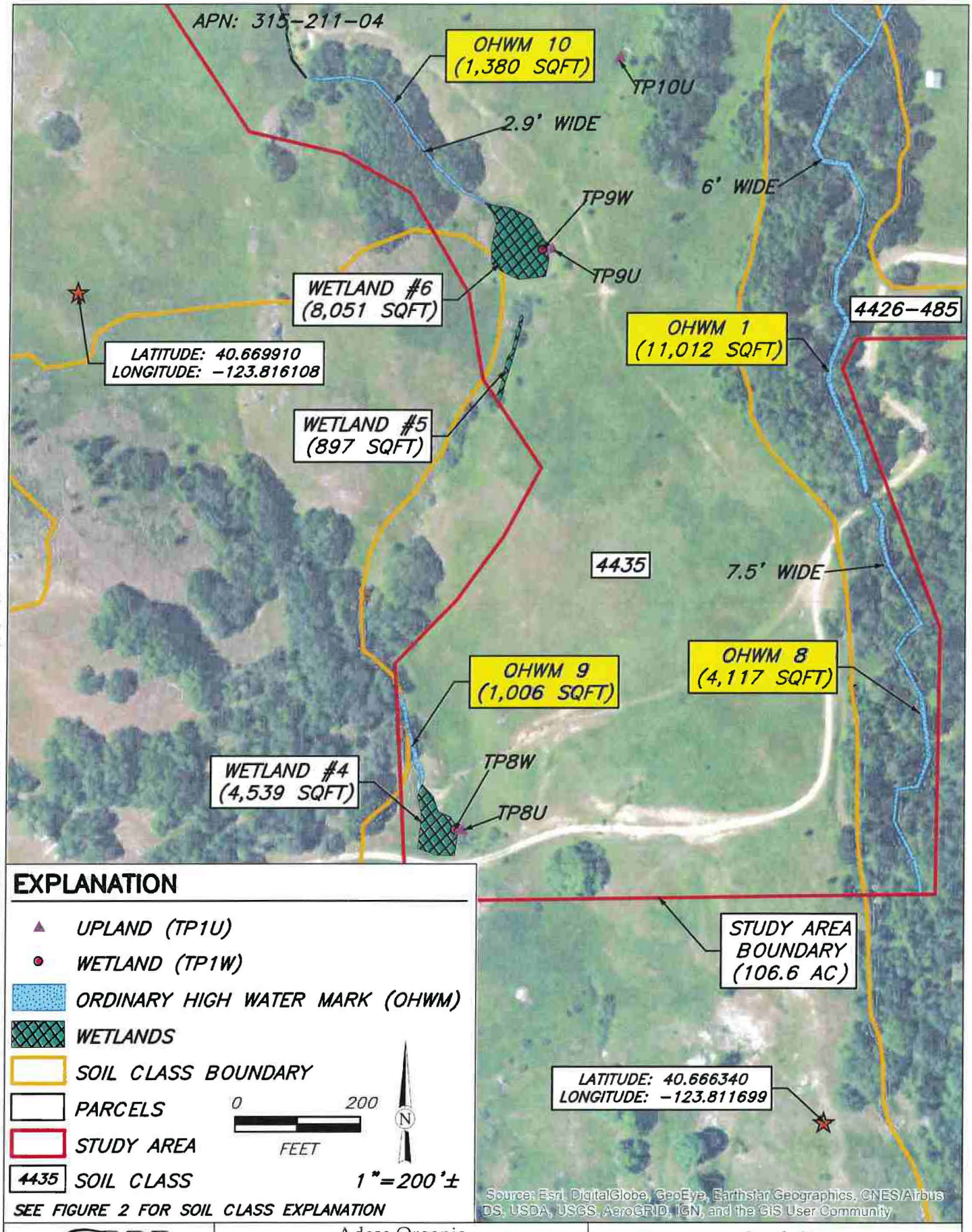
SEE FIGURE 2 FOR SOILS CLASS EXPLANATION

Consulting Engineers & Geologists, Inc.

Adesa Organic
Wetland & OHWM Delineation
Korbel, Humboldt County, California

East Site
Detail Map
SHN 016178.100

November 2016 | Figure3_EastSite | Figure 3

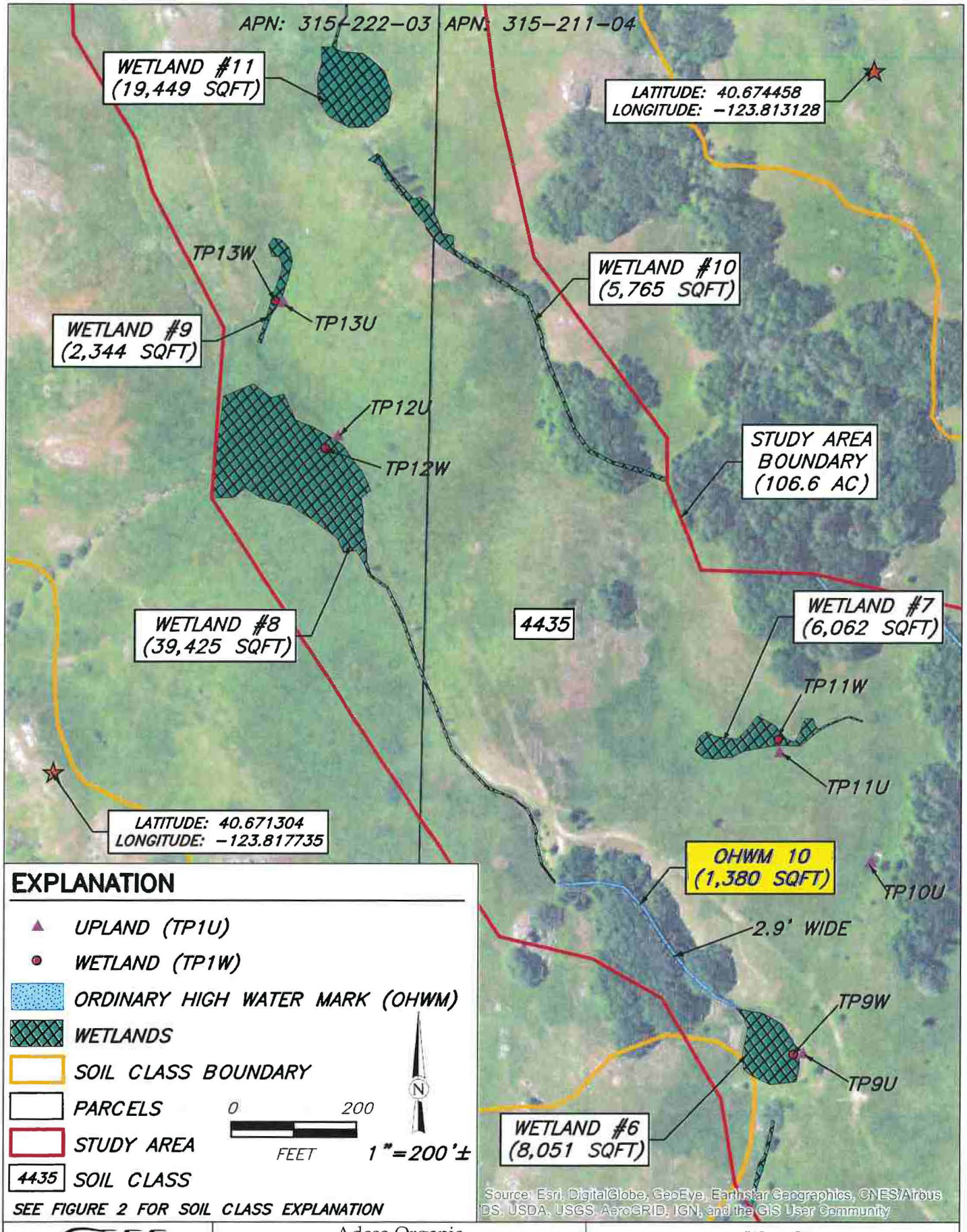


Consulting Engineers & Geologists, Inc.

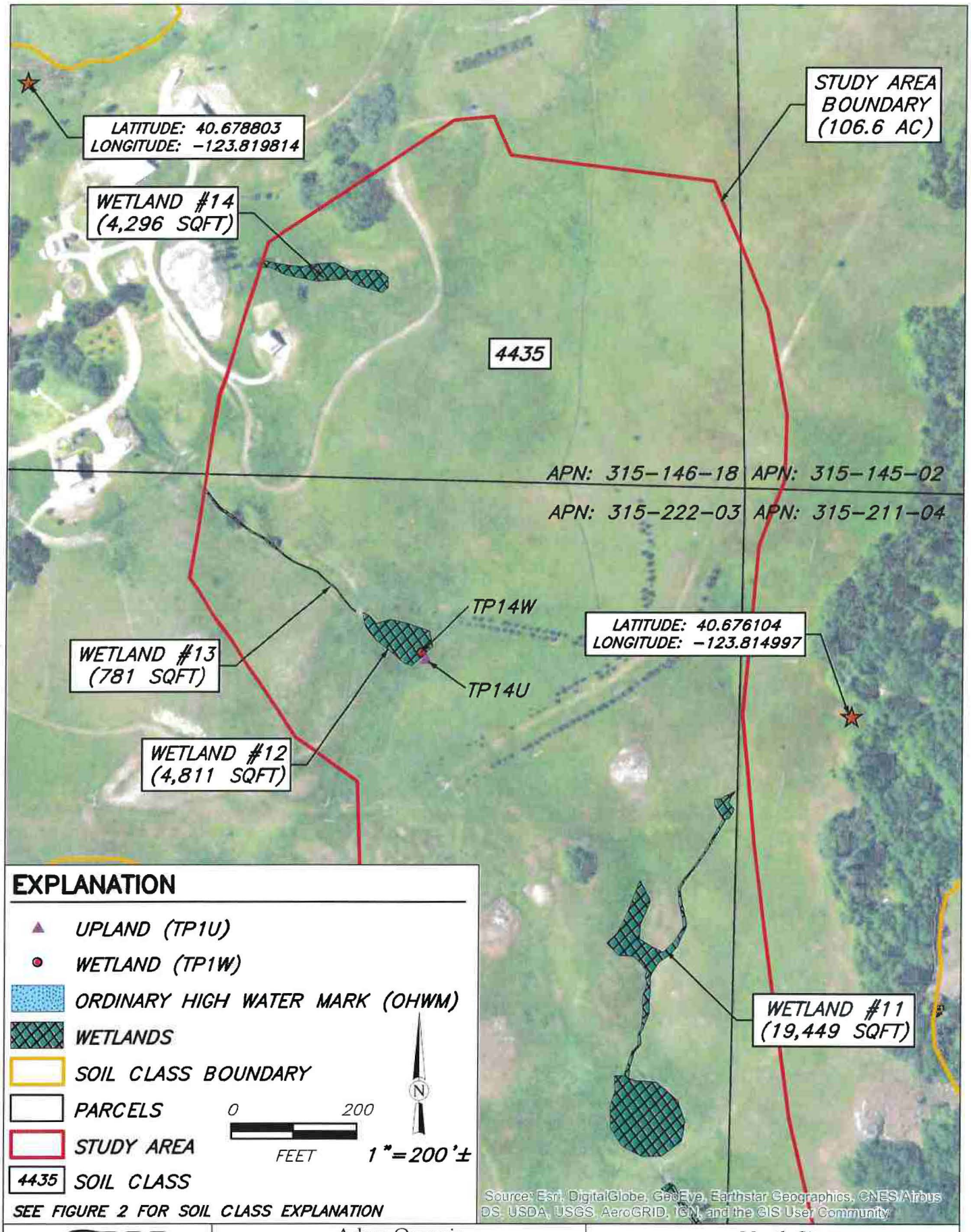
Adesa Organic
Wetland & OHWM Delineation
Korbel, Humboldt County, California

South Site
Detail Map
SHN 016178.100

November 2016 | Figure4_SouthSite | Figure 4



Consulting Engineers & Geologists, Inc.	Adesa Organic Wetland & OHWM Delineation Korbel, Humboldt County, California	West Site Detail Map SHN 016178.100
	November 2016	Figure5_WestSite	Figure 5



Consulting Engineers & Geologists, Inc.	Adesa Organic Wetland & OHWM Delineation Korbel, Humboldt County, California	North Site Detail Map SHN 016178.100
November 2016	Figure6_NorthSite	Figure 6

The soils in the project site have a USDA classification of Elkcamp-Airstrip-Highyork complex, 9-30 percent slope (4435) in the open areas, and the Pasturerock-Coyoterock-Maneze complex, 15-50 percent slopes 4426 (485) in the treed drainages (Figure 2). Currently, the mapped soils are not published and available to the public, but a draft map and descriptions were provided by the NRCS field office in Arcata, California. These soils were not designated by the NRCS as prime soils, but portions of the project area were later redefined by Dirty Business Soil Consulting & Analysis in Arcata, California.

The project area is dominated by the Elkcamp-Airstrip-Highyork complex, 9-30 percent slope (4435), as follows:

Elkcamp-50%
Airstrip-20%
Highyork-15%
Minor components-15%

Elkcamp Series
The Elkcamp series consists of very deep, well drained soils formed in colluvium and residuum derived from sandstone, siltstone, and mudstone. Elkcamp soils are on mountains and have slopes of 15 to 50 percent. The mean annual precipitation is about 2,290 millimeters (90 inches) and the mean annual temperature is about 13 degrees C (55 degrees F).

Typical Profile:
A1: 0 to 7 inches: loam
A2: 7 to 24 inches: loam
Bt1: 24 to 29 inches: gravelly clay loam
Bt2: 29 to 43 inches: gravelly clay loam
Bt3: 43 to 65 inches: very gravelly clay loam

Airstrip Series
The Airstrip series consists of moderately deep, well drained soils formed in colluvium and residuum derived from sandstone and siltstone. Airstrip soils are on mountains and have slopes of 9 to 50 percent. The mean annual precipitation is about 2,290 millimeters (90 inches) and the mean annual temperature is about 11 degrees C (52 degrees F).

Typical Profile:
A1: 0 to 6 inches: gravelly loam
A2: 6 to 10 inches: very gravelly loam
A3: 10 to 20 inches: very gravelly loam
AC: 20 to 26 inches: very gravelly loam
R: 26 to 79 inches: bedrock

Highyork Series
The Highyork series consists of very deep, somewhat poorly drained soils that formed in material weathered from chloritic schist and other metasedimentary rocks. Highyork soils are on mountains and have slopes of 15 to 50 percent. The mean annual precipitation is about 2,160 millimeters and the mean annual temperature is about 11 degrees C.

Typical Profile:
A1: 0 to 7 inches: gravelly loam
A2: 7 to 16 inches: clay loam
Bt1: 16 to 35 inches: clay loam
Bt2: 35 to 51 inches: clay loam
BT: 51 to 79 inches: gravelly clay loam

Pasturerock-Coyoterock-Maneze complex, 15 to 50 percent slopes 4426 (485) is confined to a minor portion of the study area, in the treed drainages:

Pasturerock-40%
Coyoterock-25%
Maneze-15%
Minor components-20%

Pasturerock Series
The Pasturerock series consists of very deep, well drained soils formed in colluvium derived from sandstone and mudstone. Pasturerock soils are on mountains and have slopes of 15 to 50 percent. The mean annual precipitation is about 2,290 millimeters (90 inches) and the mean annual temperature is about 13 degrees C (55 degrees F).

Typical Profile
Oi: 0 to 1 inches: slightly decomposed plant material
A: 1 to 5 inches: loam
AB: 5 to 8 inches: clay loam
Bt1: 8 to 17 inches: clay loam
Bt2: 17 to 35 inches: very cobbly clay loam
BT: 35 to 48 inches: gravelly clay loam
C: 48 to 69 inches: extremely gravelly sandy clay loam

Coyoterock Series
The Coyoterock series consists of very deep, moderately well drained soils formed in colluvium and residuum derived from sandstone and mudstone. Coyoterock soils are on mountains and have slopes of 15 to 50 percent. The mean annual precipitation is about 2,290 millimeters (90 inches) and the mean annual temperature is about 13 degrees C (55 degrees F).

Typical Profile
Oi: 0 to 0 inches: slightly decomposed plant material
A1: 0 to 8 inches: cobbly clay loam
A2: 8 to 16 inches: gravelly clay loam
Bat: 16 to 29 inches: gravelly clay loam
Bt: 29 to 39 inches: gravelly clay
Cg: 39 to 60 inches: gravelly silty clay

Maneze Series
The Maneze series consists of very deep, well drained soils formed in colluvium and residuum derived from sandstone, mudstone, and siltstone. Maneze soils are on mountains and have slopes of 15 to 50 percent. The mean annual precipitation is about 2,410 (95 inches) millimeters and the mean annual temperature is about 13 degrees C (55 degrees F).

Typical Profile:
Oi: 0 to 0 inches: slightly decomposed plant material
A1: 0 to 11 inches: loam
A2: 11 to 18 inches: extremely cobbly loam
Bow: 18 to 44 inches: extremely cobbly clay loam
Cg: 44 to 63 inches: very gravelly silty clay loam
(USDA, 2016b)

6.0 Regulatory Setting

6.1 Federal Laws

6.1.1 Section 401 and 404 of the Clean Water Act

Under Section 404 (33 U.S. Code [USC] 1344) of the Clean Water Act (CWA), as amended, the USACE and the Environmental Protection Agency (EPA) retain primary responsibility for permits to discharge dredged or fill material into "navigable waters of the United States." All discharges of dredged or fill material into jurisdictional waters of the United States (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).

In summary, 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, and
7. wetlands adjacent to waters.

Under 33 CFR 328.3, WoUS do not include prior converted cropland or waste treatment systems.

In 2008, the EPA and USACE released a guidance memorandum implementing the Supreme Court's decision in the cases of the Rapanos v. U.S. and Carabell v. U.S. As a result of these cases, the agencies will apply a significant nexus standard to the following categories 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 applicants for a federal license or permit 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. 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 (33 USC 403) of the Rivers and Harbors Appropriation Act and prohibits the unauthorized obstruction or alteration of any navigable WoUS.

6.2 State Laws–Porter-Cologne Water Quality Act

The state maintains independent regulatory authority over the placement of waste, including fill, into waters of the State (WoS) under the Porter-Cologne Water Quality Act. WoS are defined by the Porter-Cologne Water Quality 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 an 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 dredged or fill discharges to waters deemed by the USACE to be outside of federal jurisdiction under Section 404 of the CWA.

7.0 Methodology

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 USACE 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.

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 soils that are 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, 2010). 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).

At each investigation point, two test pits (TP) were excavated to find the boundary of the wetland: a wetland site (W) and an upland site (U). These are called "paired plots." Paired upland and wetland test pits are located as close together as possible, while avoiding transitional areas. If a suspected wetland test pit does not produce an USACE-designated wetland, a second upland paired plot was not performed. All pits that do not produce a wetland determination, whether paired or not, have the designation of "U" after the test pit number.

Prior to conducting the field investigation, SHN staff reviewed the 1977 USGS topographic quadrangle map (Figure 1); United States Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS) Official Soil Series Descriptions (USDA 2016); and NWI map (USFWS, 2016) (Appendix A). During the field investigation, sample points were characterized at the site for the aforementioned botanical, hydrological, and soil parameters.

Test pit locations were selected to:

- achieve appropriate coverage and characterization of wetland and upland habitats,
- document potential changes in the vegetative community (such as, a shift in the dominant species), and
- determine the approximate boundary line between wetlands and uplands by determining the extent of key wetland parameters (hydrology, hydric soils, and hydrophytic vegetation).

All field mapping was completed with a Trimble pro 6t global positioning system (GPS) antenna connected to a Panasonic Toughbook CF-19 with geographic information system (GIS) software. SHN downloaded the appropriate aerial photos and digitized relevant site plan mapping (Google Earth, 2016). Several fixed locations (for example fence angles) were marked as control points (CT) with the Trimble Pro 6t to get an estimate of aerial imagery accuracy.

7.1 Vegetation Methodology

Prior to the field investigation, a review of plant species reported to be within the project area was performed by querying the "Consortium of California Herbaria" database records and "Calflora" observations. It was determined that the site investigation was performed during an above-normal rainfall period by reviewing rainfall data from October 2015 through September 2016 (see Section 3.0). 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, the herbaceous and sapling/shrub strata at a 5-foot radius. Botanical nomenclature for Latin names follows *The Jepson Manual, Vascular Plants of California* (Baldwin et al., 2012) in addition to the online Jepson Interchange (U. C. Berkeley, 2016) for verification of species whose taxonomy may have changed since its publication.

The wetland indicator status of plant species for this investigation was based on the *Western Mountains, Valleys, and Coast 2016 Regional Wetland Plant List* (Lichvar et al., 2016)). Synonyms were checked for species that did not appear on the USACE wetland plant list. Plant species were classified as:

- *Obligate (OBL)-occurs almost always within a wetland (estimated probability 99%)*
- *Facultative-wet (FACW)-usually occurs in wetlands (estimated probability 67-99%)*
- *Facultative (FAC)-equally likely to occur in wetlands or non-wetlands (estimated probability 33-67%)*
- *Facultative-upland (FACU)-usually occurs in non-wetlands (estimated probability 1-33%)*
- *Upland (UPL)-occurs almost always in non-wetlands (estimated probability 99%)*
- *Not listed (NL)-scored as an upland plant and calculated as such on wetland determination forms*

The 50/20 method[1] was applied to each stratum to determine the dominant plant species and to satisfy the hydrophytic vegetation criteria. If either hydric soils or wetland hydrology were present, the prevalence index[2] was applied if the 50/20 method did not indicate hydrophytic vegetation. The occurrence and type of plant cover determine whether jurisdictional 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 (OHWM).

7.2 Soils Methodology

Soils were field-verified for the presence or absence of hydric conditions. Test pits were dug to the depth needed to document an indicator or to confirm the absence of indicators. The test pits for this study area range from 16 to 24 inches, and the thickness of each soil horizon was measured. The Munsell Soil Color Chart (Kollmorgen Instruments Corporation, 1998) was referenced to determine the moist soil matrix colors 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 7.0; USDA, 2010).

7.3 Hydrology Methodology

The presence of wetland hydrology indicators was determined by direct observation (or lack thereof) of surface water, groundwater, or shallow soil saturation during the field investigation. In some cases, hydrology determinations were made based on hydrology indicators (for example, drainage patterns, geomorphic position, and water-stained leaves) rather than actual direct evidence from saturation or inundation itself. Additionally, observations were made that would indicate if the site is subject to flooding or standing water. Potential indicators would include water marks, drift deposits, sediment deposits, and similar features. Indicators of extended period saturation would include oxidized rhizospheres surrounding living roots or the presence of reduced iron or sulfur in the soil profile.

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).

7.4 Ordinary High Water Mark (OHWM) Methodology

For purposes of Section 404 of the CWA, the lateral limits of jurisdiction over non-tidal water bodies in the absence of adjacent wetlands extend to the OHWM. When adjacent wetlands are present, CWA jurisdiction extends beyond the OHWM to the limits of the adjacent wetlands. For purposes of Sections 9 and 10 of the Rivers and Harbors Act of 1899, the lateral extent of federal jurisdiction, which is limited to the traditional navigable waters of the United States, extends to the OHWM, whether or not adjacent wetlands extend landward of the OHWM (USACE, 2014). Where OHWM and wetlands coincide, the wetland delineation supersedes the OWHM designation.

USACE regulations define the term OHWM for the purposes of the CWA lateral jurisdiction as follows:

> *The term "ordinary high water mark" means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas at 33 CFR 328.3(e).*

The OHWM in non-perennial streams corresponds with the boundaries of the active channel, which are typically expressed by some combination of three primary indicators: a topographic break in slope, change in sediment characteristics, and change in vegetation characteristics (USACE, 2014). The following supporting features should be considered when making an OHWM determination, to the extent that they can be identified and are deemed reasonably reliable (USACE, 2014):

- Drift/wrack
- Erosion/scour
- Bank undercutting
- Root exposure
- Point bars
- Water staining
- Litter Water staining
- removal
- Silt deposits
- Shelving
- Headcut/knickpoint
- Macroinvertebrates

8.0 Discussion and Results

Field investigations were conducted on August 2, September 29, September 30, and October 7, 2016. Ten paired test pits and four investigative pits (twenty-four test pits total) were excavated to characterize the area and record information for vegetation, soils, and hydrology. Once the relationship was established between hydric soils, vegetation, and hydrology in a portion of the study area, exploratory soil probing was used to delineate the boundaries of other similar wetlands in the near vicinity.

Locations of TPs are shown on Figures 2 through 6. Photos of the study area are shown in Appendix B. Each test pit has a discussion section that describes the physical features and considerations of the site, followed by a Data section that summarizes information from the completed "Wetland Determination Data Forms" located in Appendix C.

8.1 TP1 Paired Plots (Wetland #1)

Discussion

The TP1 paired pits are situated next to the pond in the eastern portion of the study area (see Figure 3; Photo B2). The pond was created in 2009 according to previous landowners. Fill material was brought in from an unknown source and placed around the topographic low spot to capture rainwater runoff and perhaps contain a natural seepage. Interpreting the soil colors as to the existence of redox was "problematic" due to the short time for the hydric features to imprint on the newly formed soil horizons and the conglomeration of matrix soil colors that could be misinterpreted as redox. Even though the fill was placed more than five years ago, it is not thought that "normal circumstances" have been achieved yet.

There is one paired plot for this depression: TP1W and TP1U. TP1U is approximately 6 feet west from TP1W on the berm.

Data

TP1W has all three parameters present: vegetation, hydric soils, and hydrology and is, therefore, considered a wetland site. The vegetation contained only an herbaceous stratum of 30 percent low mannagrass (*Glyceria declinata* [FACW]), 15 percent pennyroyal (*Mentha pulegium* [OBL]), and 10 percent floating pondweed (*Potamogeton natans* [OBL]). The soils showed the beginnings of a minor amount of gley color (10B 6/1 on the gley 2 page). There were enough redox features to identify the soils as hydric using the depleted matrix indicator (F3). The hydrology had the following primary indicators: water marks (B1), inundation visible on aerial imagery (B7), sparsely vegetated concave surface (B8), and the secondary indicators of water-stained leaves (B9), saturation visible on aerial imagery (C9), and the secondary indicators geomorphic position (D2), and FAC-Neutral test (D5).

TP1U does not have any of the wetland parameters. The vegetation contained only an herbaceous stratum composed of 35 percent cover sweet vernal grass (*Anthoxanthum odoratum* [FACU]), 30 percent hairy cat's ear (*Hypochaeris radicata* [FACU]), 25 percent white clover (*Trifolium repens* [FAC]), 15 percent dogtail grass (*Cynosurus echinatus* [NL]), and 10 percent pennyroyal (OBL). The recently placed fill material made soil classification "problematic," but there was no indication that the differential colors were due to redox rather than the mixture of matrix colors combined with fill placement (Photo B3); therefore, TP2U does not contain hydric soil. There were no wetland hydrology indicators.

8.2 TP2 Paired Plots (Wetland #2)

Discussion
TP2 paired plots are located in the western portion of the study area (Figure 2), at a wet seepage area that drains into the western branch of Cowan Creek. There is one paired plot for this site: TP2W and TP2U. TP2W is above the incised drainage of the seepage area on a low-sloped flood plain. TP2U is located on a 15 to 25 percent slope approximately 33 feet from TP2W. There is a wide transitional area between the drainage bed and the upland soils that are out of the wetland area (Photo B4).

Data
TP2W is has all three parameters present: vegetation, hydric soils, and hydrology and is, therefore, considered a wetland site. The vegetation contained only an herbaceous stratum composed of 40 percent Pacific rush (*Juncus effusus* ssp. *pacificus* [FACW]), 30 percent pennyroyal (OBL), 15 percent slender leaved sedge (*Carex athrostachya* [FACW]), 10 percent rush (*Juncus patens* [FACW]), 5 percent Kentucky blue grass (*Poa pratensis* [FAC]), and 5 percent common velvet grass (*Holcus lanatus* [FAC]). The soils had the depleted matrix (F3) indicator, and the hydrology contained the following primary indicators: oxidized rhizospheres along living roots (C3), and the secondary indicators geomorphic position (D2) and FAC-Neutral test (D5).

TP2U does not have the three wetland parameters. The vegetation contained only an herbaceous stratum of 65 percent orchardgrass (*Dactylis glomerata* [FACU]), 20 percent velvet grass (FAC), 15 percent dogtail grass (NL), 10 percent Kentucky blue grass (FAC), and 5 percent western bracken fern (*Pteridium aquilinum* var. *pubescens* [FACU]). The USACE dominance test method indicates that this pit does not qualify for a hydrophitic vegetation parameter. No hydric soils or hydrology indicators were present.

8.3 TP3 Paired Plots (Wetland #2)

Discussion
TP3 paired plots are located lower in the wet seepage area than TP2, where the drainage has become more steeply incised. There is one paired plot for this site: TP3W and TP3U (Figure 3). TP3W is in the drainageway at the base of the bank slope._TP3U is 10 feet east, above TP3W.

Data
TP3W has all three parameters present: vegetation, hydric soils, and hydrology and is, therefore, considered a wetland site. The vegetation contained both a sapling/shrub and an herbaceous stratum. The sapling/shrub layer contained 20 percent arroyo willow (*Salix lasiolepis* [FACW]), 15 percent poison oak (*Toxicodendron diversilobum* [FAC]), and 10 percent coyote brush (*Baccharis pilularis* ssp. *consanguinea* [NL]). The herb stratum contained 45 percent Pacific rush (FACW), 20 percent pennyroyal (OBL), 5 percent western sword fern (*Polystichum munitum* [FACU]), and 5 percent orchard grass (FACU). The soils had the depleted matrix (F3) indicator in the upper horizons and the redox dark surface (F6) indicator in the lower portion of the test pit. The hydrology had the following primary indicators: saturation (A3), and the secondary indicators of saturation visible on aerial imagery (C9), geomorphic position (D2), and FAC-Neutral test (D5).

TP3U has vegetation contained in both a sapling/shrub and an herbaceous stratum. The sapling/shrub stratum contained 10 percent coyote brush (NL). The herb stratum contained 70 percent orchard grass (FACU), 20 percent dogtail grass (NL), 10 percent hairy cat's ear (FACU), and 5 percent western bracken fern (FACU). No hydric soils or hydrology indicators were present.

8.4 TP4U Pit

Discussion
TP4 was excavated because of the wetland vegetation and hydrology parameter potential of the site (Figure 3; Photo B5). Because the test pit data did not support evidence of a wetland, a second paired plot was not performed. The soils consist of fill and may have been mechanically compacted at an undetermined date. An investigation using Google Earth did not show when the fill and grading was performed at this site. At approximately 20 inches, the soils appeared looser and may be at the transition of compacted fill with disturbed native soils. The colors of the soil reflect matrix colors and not imprinting of reducing/oxidizing action on the soils.

Data
TP4U contained only the vegetative parameter, and therefore not considered a wetland site. The vegetation consisted of only the herbaceous stratum, consisting of 50 percent white clover (FAC), 15 percent velvet grass (FAC), 15 percent hairy cat's ear (FACU), and 15 percent pennyroyal (OBL). The USACE dominance test method indicates that this pit qualifies for a hydrophitic vegetation parameter. The soils at this location did not have hydric indicators. TP4 is not considered to have a wetland hydrology parameter, because there was only one secondary indicator of geomorphic position (D2).

8.5 TP5U Pit

Discussion
TP5 was excavated at the lowest elevation of a depression at the base of the hill slope that appeared to have the highest probability of being in a wetland site (Figure 3; Photo B6). Because the test pit data did not support evidence of a wetland, a second paired plot was not performed.

Data
TP5U vegetation contained only the herbaceous stratum, containing 70 percent dogtail (NL), 25 percent velvet grass (FAC), and 2 percent bull thistle (*Cirsium vulgare* [FACU]). There were no hydric soil indicators, and only the hydrology secondary indicator of geomorphic position (D2).

8.6 TP6U Pit

Discussion
TP6 was excavated to find the extent of the wetland defined by TP2W and TP3W (Figure 3). Although in the same drainageway, TP6 only had one of wetland parameters: hydrology. Because the test pit data did not support evidence of a wetland, a second paired plot was not performed.

Data

TP6U vegetation only had growth in the herbaceous stratum, consisting of 55 percent rush (FACW), 30 percent dogtail grass (NL), 15 percent pennyroyal (OBL), 10 percent Pacific rush (FACW), and 2 percent Klamath weed (*Hypericum perforatum* [FACU]). There were no hydric soil indicators. There were two hydrology secondary indicators: saturation visible on aerial imagery (C9) and geomorphic position (D2), qualifying for the hydrology parameter, but not as a wetland site.

8.7 TP7 Paired Plots (Wetland #3)

Discussion

The TP7 site was excavated to delineate the wetland potential of a second drainage system in the 433-Site A project area. The site has two pits: TP7W and TP7U (Figure 3). TP7U is in the drainage bank, 4 feet higher than TP7W.

Data

TP7W has the 3 wetland parameters, and therefore considered a wetland site. The vegetation only had growth in the herbaceous stratum, consisting of 60 percent rush (FACW), 20 percent pennyroyal (OBL),15 percent Pacific rush (FACW), 2 percent willow herb (FAC), and 2 percent velvet grass (FAC). The soils had the redox dark surface (F6) indicator, and the hydrologic indicators met are the secondary saturation visible on aerial imagery (C9), geomorphic position (D2) and the FAC-Neutral test (D5).

TP7U has no wetland parameters met. The vegetation only had growth in the herbaceous stratum, consisting of 35 percent dogtail grass (NL), 25 percent pennyroyal (OBL),15 percent velvet grass (FAC) and 2 percent willow herb (FAC). No hydric soils or hydrology indicators were present.

8.8 TP8 Paired Plots (Wetland #4)

Discussion

The TP8 site is situated at a depression that detains water before draining through a culvert under the road (Figure 4; Photo B7). The roadway has created this wetland depression feature, which would otherwise contain itself to the drainageway that flows from a pond upstream. The site has two pits: TP8W and TP8U. TP8U is 10 feet east from TP8W.

Data

TP8W has the three wetland parameters met, and is considered a wetland pit. The vegetation only had growth in the herbaceous stratum, consisting of 90 percent pennyroyal (OBL), 3 percent Kentucky blue grass (FAC), 3 percent velvet grass (FAC), and 3 percent dogtail grass (NL). The soils are hydric with the depleted matrix (F3) indicator. The hydrology parameter was met with the two secondary indicators of geomorphic position (D2) and the FAC-Neutral test (D5).

TP8U has no wetland parameters met. The vegetation only had growth in the herbaceous stratum, consisting of 75 percent dogtail grass (NL), 12 percent pennyroyal (OBL),10 percent velvet grass (FAC) and 1 percent smooth cat's ear (*Hypochaeris glabra* [NL]). No hydric soils or hydrology indicators were present.

8.9 TP9 Paired Plots (Wetland #6)

Discussion
The TP9 site is at a pond created prior to 1993, according to Google Earth images (Figure 4; Photo B8). The investigation of this site was to confirm that hydric soils had formed and to find the extent of the pond's wetland boundary. The berm around the pit is composed of fill. The site has two pits: TP9W and TP9U. TP9U is 13 feet east of TP9W

Data
TP9W has the three wetland parameters met, and is considered a wetland pit. The vegetation only had growth in the herbaceous stratum, consisting of 70 percent floating pond weed (OBL).

The soils are hydric with the depleted matrix (F6) indicator. The hydrology parameter was met with the primary surface water (A1) indicator, and the two secondary indicators of geomorphic position (D2) and the FAC-Neutral test (D5).

TP9U does not have any of the wetland parameters. The vegetation only had growth in the herbaceous stratum, consisting of 55 percent dogtail grass (NL), 15 percent velvet grass (FAC), 15 percent sweet vernal grass, 10 percent *(Plantago lanceolata* [FACU]), 3 percent Kentucky blue grass (FAC), 3 percent pennyroyal (OBL), and 2 percent western sword fern (FACU). No hydric soil or hydrology indicators were found.

8.10 TP10U Pit

Discussion
The TP10 site was excavated in the lowest part of a depression that appeared to be the likeliest spot for a wetland (Figure 5; Photo B9). The two vegetation and hydrology parameters were met, but not the hydric soils parameter; therefore, TP10U is not a considered a wetland site. Because the test pit data did not support evidence of a wetland, a second paired plot was not performed.

Data
TP10U vegetation only had growth in the herbaceous stratum, consisting of 65 percent ribbed sedge (*Carex nulticostata* [NL]), 30 percent Pacific rush (FACW), and 5 percent pennyroyal (OBL). There were no hydric soil indicators. The hydrology had two secondary indicators present, the geomorphic position (D2) and the FAC-Neutral test (D5).

8.11 TP11 Paired Plots (Wetland #7)

Discussion
The TP11 site is situated in a larger depression above TP10 (Figure 5; Photo B10). A soil probe was used to determine the correlation of hydric soil indicators and the presence of pennyroyal at this depression. Because there was such a close correlation at this site, the pennyroyal was used to map the extent of the wetland. TP11U is 18 feet south of TP11W.

Data

TP11W has all three wetland parameters met, and is a wetland pit. The vegetation only had growth in the herbaceous stratum, consisting of 65 percent pennyroyal (OBL), 20 percent velvet grass (FAC), 10 percent orchard grass FACU), and 5 percent curly dock (*Rumex Crispus* [FAC]). The hydric soil indicator redox dark surface (F6) was found, and the two secondary hydrology indicators were present: geomorphic position (D2) and the FAC-Neutral test (D5).

TP11U has no wetland parameters met. The vegetation only had growth in the herbaceous stratum, consisting of 80 percent orchard grass, 10 percent velvet grass (FAC), and 10 percent dogtail grass (NL). No hydric soil or hydrology indicators were found.

8.12 TP12 Paired Plots (Wetland #8)

Discussion

The TP12 site is in a large seepage area that drains from a ponded area northeast above the roadway and where storm or ground water is retained in the broad depression west of the roadway (Figure 5; Photos B11 and B12). After several soil probe tests on the pennyroyal boundary in the flat seepage area, the correlation between hydric soils and pennyroyal was used to map the extent of the wetland at this site. TP12U is 29 feet east of TP12U and is on the east edge of the existing roadway.

Data

TP12W has all three wetland parameters met, and is a wetland pit. The vegetation only had growth in the herbaceous stratum, consisting of 80 percent pennyroyal (OBL), and 20 percent Kentucky blue grass (FAC). The redox dark surface (F6) hydric soil indicator was present, and two secondary hydrology indicators: geomorphic position (D2) and the FAC-Neutral test (D5).

TP12U has no wetland parameters met. The vegetation only had growth in the herbaceous stratum, consisting of 85 percent orchard grass (FACU), 8 percent dogtail grass (NL), and 5 percent sweet vernal grass (FACU). No hydric soil or hydrology indicators were found.

8.13 TP13 Paired Plots (Wetland #9)

Discussion

The TP13 site was excavated to determine if the hill slope drainage from the pond could be a wetland. There were abundant amounts of pennyroyal in the drainage, but there was not the same correlation between hydric soils and pennyroyal that was found in the TP12 seepage area. There is a wide transitional area approximately 70 feet between the TP12 seepage area and the TP13 drainage that leads into it, where hydric soil indicators ranged from obvious to nonexistence within a few feet of one another. TP13U is 11 feet east of TP13W.

Data

TP13W has all three wetland parameters met, and is a wetland pit. The vegetation only had growth in the herbaceous stratum, consisting of 50 percent Kentucky blue grass (FAC), 40 percent pennyroyal (OBL), 10 percent orchard grass (FACU), 5 percent many ribbed sedge (NL), and 5 percent Bolander's rush (*Juncus bolanderi* [OBL]). The depleted matrix (F3) hydric soil indicator was found. The hydrology primary indicator present was oxidized rhizospheres along living roots (C3) and two secondary hydrology indicators: geomorphic position (D2) and the FAC-Neutral test (D5).

TP13U has no wetland parameters and is not considered a wetland site. The vegetation only had growth in the herbaceous stratum, consisting of 40 percent orchard grass (FACU), 30 percent Kentucky blue grass (FAC), 20 percent dogtail grass (NL), 5 percent hairy cat's ear (FACU), and 2 percent pennyroyal (OBL). No hydric soil or hydrology indicators were found.

8.14 TP14 Paired Plots (Wetland #12)

Discussion
The TP14 site was chosen to find the southernmost extent of the wetland drainageway (Figure 6; Photo B13). The extent of this drainage is in a depression that forms east of the existing roadway, before draining through the 6-inch culvert to the drainageway on the west side._TP14U is 11 feet east of TP14W and denotes the easternmost boundary of that wetland system.

Data
TP14W has all three wetland parameters met, and is a wetland pit. The vegetation only had growth in the herbaceous stratum, consisting of 80 percent creeping bent grass (*Agrostis stolonifera* [FAC]), 30 percent Kentucky blue grass (FAC), 25 percent pennyroyal (OBL), 5 percent rush (FACW), and 1 percent curly dock (FAC). The redox dark surface (F6) hydric soil indicator was present. The hydrology primary indicator was found: oxidized rhizospheres along living roots (C3) and two secondary hydrology indicators: geomorphic position (D2) and the FAC-Neutral test (D5).

TP14U has no wetland parameters met, and is therefore not considered a wetlands pit. The vegetation only had growth in the herbaceous stratum, consisting of 70 percent Kentucky blue grass (FAC), 30 percent velvet grass (FAC), 1 percent rush (FACW), and 1 percent curly dock (FAC). No hydric soil or hydrology indicators were found.

8.15 Additional Wetlands without Excavated Pits

Wetlands 5, 10 (Photo B14), 11 (Photo B15), 13, and 14 (Photo B16) were delineated based on observed local patterns between hydric soils, vegetation, and hydrology at nearby test pits. These relationships were used to infer and delineate wetland boundaries in locations with similar and consistent relationships between wetland parameters in the local area. An exploratory soil probe was used to spot check and confirm the boundaries of hydric soil indicators.

8.16 Ordinary High Water Mark (OHWM)

Within the 433-parcel study area, OHWM were observed in Cowan Creek and its tributaries in addition to other small drainages that eventually drain to Mad River. OHWM features observed include active channels, a break in slope, change in sediment characteristics, and a change in vegetation characteristics. Additional features observed and used to assist interpretation of OHWM included minor erosion/scour, bank undercuts, and root exposure.

9.0 Conclusions

The USFWS NWI website (Appendix A) shows the NWI designation of a riverine system preexisting on this site in the drainageway of the two main branches of Cowan Creek flowing through the study area, and two other small tributaries near TP8 and TP14. SHN conducted a

study to confirm and better define the riverine boundaries, and investigate for other OHWM and wetland areas. Where OHWM and wetlands coincide, the wetland delineation supersedes the OHWM designation.

The site investigation occurred during a period with normal rainfall during the summer season of 2016 (Section 3.0). Following the USACE 3-parameter guidelines, TP1W, TP2W, TP3W, TP7W, TP8W, TP9W, TP11W, TP12W, TP13W, and TP14W have the vegetative, hydric soil, and hydrology indicators necessary to place them within the edges of the wetland boundaries. All other test pits, with the designation of "U" after the test pit number, indicates that these pits did not meet all three of the wetland parameters, and therefore not considered a wetland site.

The total wetland areas and OWHM are listed in Table 2.

Table 2
Wetland Delineation and OHWM[1] Results
Adesa Organic, Korbel, California

Waterbodies	Cowardian Type	Latitude/Longitude	Area (square feet)
Wetland #1	Palustrine EM[2] 1[3]	40.670918/ -123.808812	5,028
Wetland #2	Riverine Intermittent EM	40.671789/ -123.811358	5,630
Wetland #3	Riverine Intermittent EM	40.672197/ -123.811948	7,791
Wetland #4	Palustrine EM 1	40.667583/ -123.813962	4,539
Wetland #5	Riverine Intermittent EM	40.669655/ -123.813670	897
Wetland #6	Palustrine EM 1	40.670125/ -123.813582	8,051
Wetland #7	Palustrine EM 1	40.671562/ -123.813696	6,062
Wetland #8	Palustrine EM 1	40.672571/ -123.816242	39,425
Wetland #9	Riverine Intermittent EM	40.673493/ -123.816514	2,344
Wetland #10	Riverine Intermittent EM	40.6737641/ -123.815677	5,765
Wetland #11	Palustrine EM 1	40.674375/ -123.816138	19,449
Wetland #12	Palustrine EM 1	40.676426/ -123.817584	4,811
Wetland #13	Riverine Intermittent EM	40.676800/ -123.818345	781
Wetland #14	Riverine Intermittent EM	40.678012/ -123.818073	4296
OHWM#1	Riverine Intermittent RB[4]	40.670638/ -123.811927	11,012
OHWM # 2	Riverine Intermittent RB	40.671942/ -123.809274	4,805
OHWM #3	Riverine Intermittent RB	40.670859/ -123.809175	1,378
OHWM #4	Riverine Intermittent RB	40.671194/ -123.807795	3,724
OHWM #5	Riverine Intermittent EM	40.672625/ -123.811671	1,542
OHWM #6	Riverine Intermittent EM	40.672727/ -123.811873	602
OHWM #7	Riverine Intermittent EM	40.672877/ -123.812376	658
OHWM #8	Riverine Intermittent RB	40.668408/ -123.811369	4,117
OHWM #9	Riverine Intermittent EM	40.667935/ -123.814126	1,006
OHWM #10	Riverine Intermittent RB	40.670596/ -123.814184	1,380
Total			**145,093**

1. OHWM: ordinary high water mark
2. EM: Emergent
3. 1: Persistent
4. RB: Rock Bottom

9.0 Limitations

The conclusions in this report represent a "snapshot in time" and it is possible that some species were not 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. The conclusions should be verified by the USACE through receipt of a jurisdictional determination letter.

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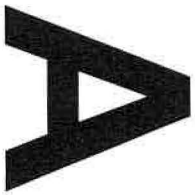
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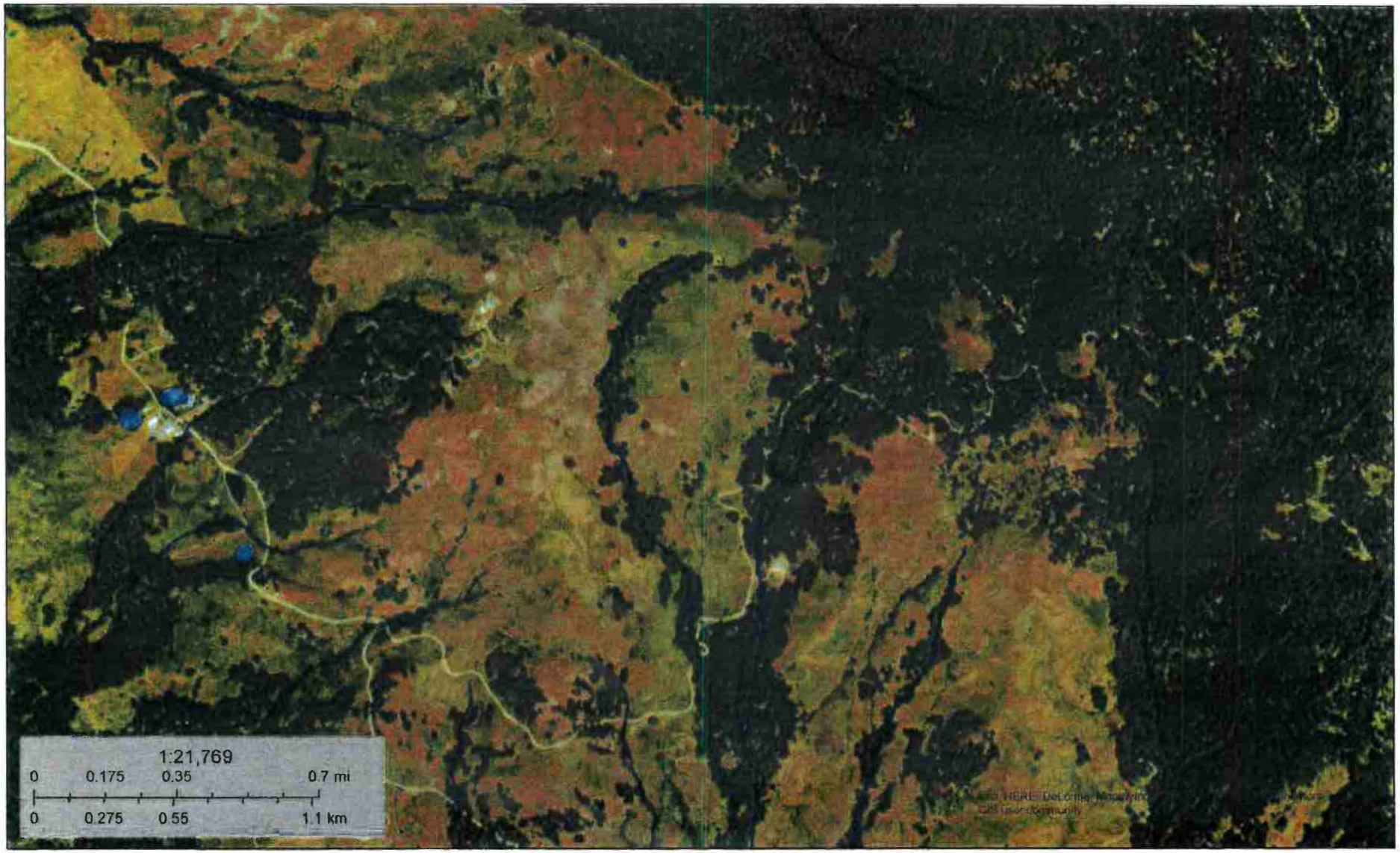


National Wetlands Inventory

U.S. Fish and Wildlife Service

National Wetlands Inventory

Adesa Org. NWI Wetlands & Riparian



October 20, 2016

- 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

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

B

Site Photographs



Photo B1: Project Area Terrain



Photo B2: Pond

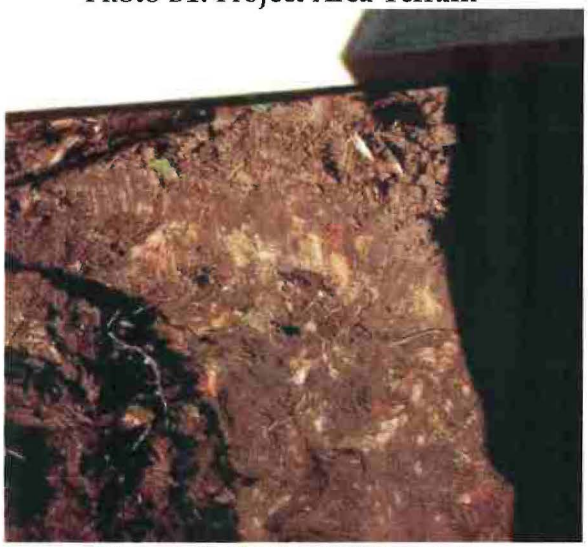


Photo B3: TP1U Fill Material



Photo B4: TP2 Wet Seepage



Photo B5: TP4 Site

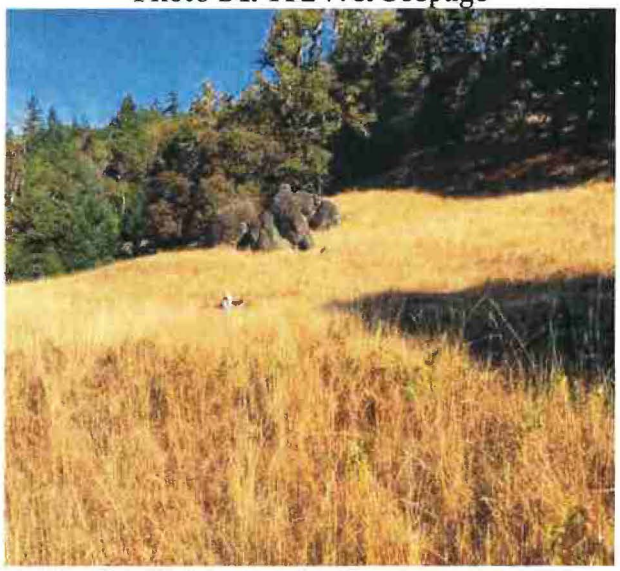


Photo B6: TP5 Site

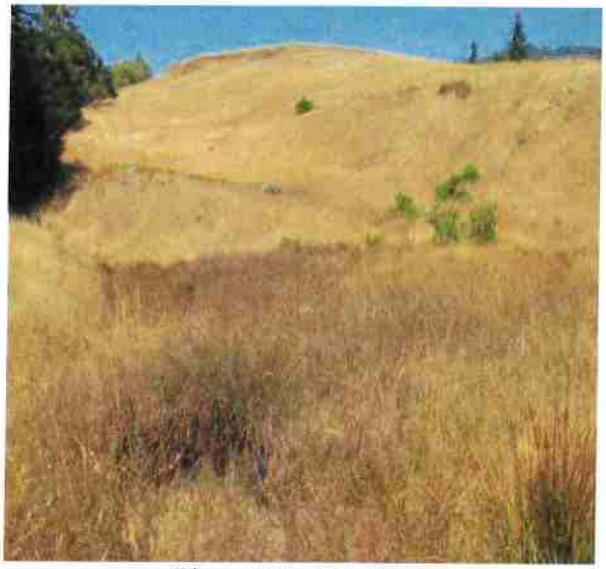


Photo B7: TP8 Site



Photo B8: TP9 Site



Photo B9: TP10 Site



Photo B10: TP11 Site



Photo B11: TP12 Site



Photo B12: Wetland #8 &#9 at Base of Slope



Photo B13: TP14 Site



Photo B14: Wetland #10 Below Pond



Photo B15: Wetland #11

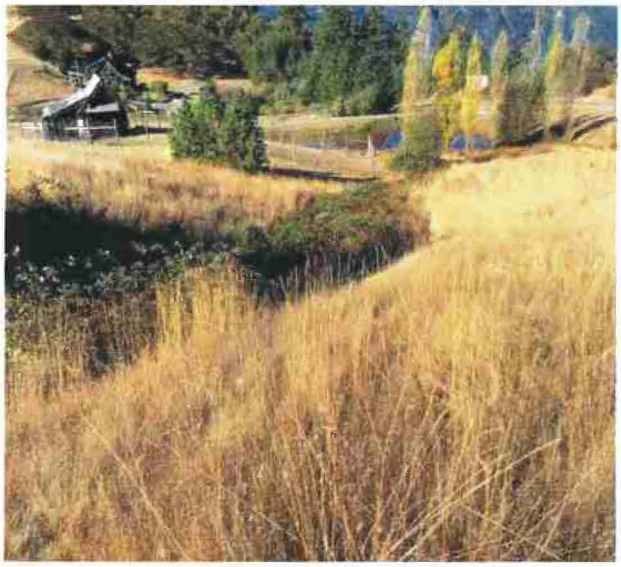


Photo B16: Wetland #14



Wetland Determination Data Forms

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

Project/Site: Maple Creek 016178.100 City/County: Humboldt Co. Sampling Date: 8/2/16
Applicant/Owner: Adesa Organics State: CA Sampling Point: TP W
Investigator(s): Cindy Wilcox / Gregg O'Connell Section, Township, Range: T 3N, R3E, Sec 2
Landform (hillslope, terrace, etc.): Pond edge Local relief (concave, convex, none): flat Slope (%): 0%
Subregion (LRR): LRR A Lat: 40.671001° Long: -123.810537 Datum:
Soil Map Unit Name: Elk Camp - Airstrip - Highyork complex 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 Y, or Hydrology Y significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓
Are Vegetation N, Soil Y, or Hydrology N 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: Fill soils to form 2009 pond, greater than 5%, but weak soil hydric indicators

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	Ø = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	Ø = Total Cover		
Herb Stratum (Plot size: 5x5 ft)			
1. Alopecurus geniculatus	30	Y	FACW
2. Mentha pulegium	15	Y	OBL
3. Potamogeton natans	10	N	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	55 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	Ø = Total Cover		

% Bare Ground in Herb Stratum 45%

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 ✓ No ____

Remarks:

SOIL

Sampling Point: 7C cl

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
0-1	10YR 3/2	100					L	Fill material
1-4	10YR 3/2	95%	5YR 4/4	20	C	M	SL	
	10YR 5/2	45%						
4-24	10YR 5/2	84%	GLEY 1 10G 4/1	4%	C	PL	SiL	Contrast - 10YR 3/2 - 10YR 6/4 = 4 value
			10YR 6/3	12%	D	M		Dominant color 10YR 5/2
								Prominent color 10YR 6/3

[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:

Bordered in red, 4 inches or more of fill material. Use presence of gley as indicator of becoming hydric soils.

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): 12

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks: Surface water present with 12 inches of fill material. Water did not penetrate into the pit and has been removed.

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

Project/Site: Maple Creek 016178.100 City/County: Humboldt Co. Sampling Date: 8/2/2016
Applicant/Owner: Adesa Organics State: CA Sampling Point: TP1 U
Investigator(s): Cindy Wilcox / Gregg O'Connor Section, Township, Range: T3N, R3E, Sec 2
Landform (hillslope, terrace, etc.): Top of pond berm Local relief (concave, convex, none): Convex Slope (%): <5
Subregion (LRR): LRR A Lat: 40.671001° Long: -123.810537 Datum:
Soil Map Unit Name: Elk Camp-Airstrip-Highlyrik complex 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: Fill soils to build pond 2009

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2. Ø			
3.			
4.			
	Ø = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2. Ø			
3.			
4.			
5.			
	Ø = Total Cover		
Herb Stratum (Plot size: ____)			
1. Anthoxanthum odoratum	35	Y	FACU
2. Hypochaeris radicata	30	Y	FACU
3. Trifolium repens	25	Y	FAC
4. Cynosurus echinatus	15	N	NL
5. Mentha pulegium	10	N	OBL
6.			
7.			
8.			
9.			
10.			
11.			
	115 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1. Ø			
2.			
	Ø = 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: 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 ✓

Remarks:

SOIL

Sampling Point: TP 1 U

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 7/2	100					L	
5-24"	10YR 7/2	90					SL	Fill
	5Y 8/1	3						problematic soil
	5YR 5/6	6						

[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: Colors are from fill, from unknown source. Colors are not redox, but part of fill 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) N
- ___ 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: No hydrology present - upland

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

Project/Site: Maple Creek 016178.100 City/County: Humboldt Co. Sampling Date: 8/2/16

Applicant/Owner: Adesa Organics State: CA Sampling Point: TP2W

Investigator(s): Cindy Wilcox / Gregg O'Connell Section, Township, Range: T 3N, R3E, Sec 2

Landform (hillslope, terrace, etc.): drainage floodplain Local relief (concave, convex, none): none Slope (%): 5

Subregion (LRR): LRR A Lat: 40.671001° Long: -123.810537 Datum:

Soil Map Unit Name: Elk camp - Airstrip - Highyork complex 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 N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation N, Soil N, or Hydrology N 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 – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	Ø	= Total Cover	

Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	Ø	= Total Cover	

Herb Stratum (Plot size: 5x5ft)			
1. Juncus effusus	40	Y	FACW
2. Mentha pulegium	30	Y	OBL
3. Carex atherodes	15	N	FACW
4. Juncus patens	10	N	FACW
5. Poa pratensis	5	N	FAC
6. Hedera helix	5	N	FAC
7.			
8.			
9.			
10.			
11.			
	105	= Total Cover	

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	Ø	= 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
- ___ 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: TP2W

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
0-1.5	7.5YR 3/2	100					L	Δ thick V-1, CAR 6
F3 1.5-7	7.5YR 4/2	90	7.5YR 5/8	10	RM	M	SiL	7.5YR 4/2 vs 7.5YR 5/8
F6 7-24"	10YR 2/1	95	7.5YR 5/8	5	RM	M	SiL	(prominent contrast)

[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: Third plain of drainage. Large transitional area until upland soils.

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

Project/Site: Maple Creek 016178.100 City/County: Humboldt Co. Sampling Date: 8/2/16

Applicant/Owner: Adesa Organics State: CA Sampling Point: TP2U

Investigator(s): Cindy Wilcox / Greg O'Connell Section, Township, Range: T 3N, R3E, Sec 2

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 15

Subregion (LRR): LRR A Lat: 40.671001° Long: -123.810537 Datum:

Soil Map Unit Name: Elkcamp - Airstrip - Highyork complex 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 N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation N, Soil N, or Hydrology N 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 – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5x5ft)			
1. Dactylis glomerata	65	Y	FACU
2. Holcus lanatus	20	N	FAC
3. Cynosurus echinatus	15	N	NL
4. Pteridium aquilinum	10	N	FACU
5. Pteridium aquilinum	5	N	FACU
6.			
7.			
8.			
9.			
10.			
11.			
	115	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= 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: 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	—	x 1 =	—
FACW species	—	x 2 =	—
FAC species	30	x 3 =	90
FACU species	70	x 4 =	280
UPL species	15	x 5 =	75
Column Totals:	115 (A)		445 (B)

Prevalence Index = B/A = 3.87

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: TP2U

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
0-1	10YR 3/2	100					L	sod layer - pushed around.
1-24"	10YR 4/2	100					SL	occassional sand stone gravel ton/white in color

[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:

Compacted soils & difficult to dig into.

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) N
- ___ 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: Maple Creek 016178.100 City/County: Humboldt Co. Sampling Date: 8/2/16

Applicant/Owner: Adesa Organics State: CA Sampling Point: TP3W

Investigator(s): Cindy Wilcox / Gregg Connection, Township, Range: T3N, R3E, Sec 2

Landform (hillslope, terrace, etc.): Drainage Channel Local relief (concave, convex, none): Concave Slope (%): 6

Subregion (LRR): LRR A Lat: 40.671001° Long: -123.810537 Datum:

Soil Map Unit Name: Elkamp - Arcata - Highyork Complex NWI classification: PUA

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

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

Are Vegetation N, Soil N, or Hydrology N 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 – Use scientific names of plants.

(cumulative %)

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot size: 5)			
44% 1. Salix lasiolepis	20 (44%)	Y	FACW
22% 2. Rosa californica	10 (22%)	Y	NL
33% 3. Toxicodendron diversilobum	15 (33%)	Y	FAC
4.			
5.			
	45 = Total Cover		

Herb Stratum (Plot size: 5)			
1. Juncus effusus	45 (60)	Y	FACW
2. Mentha pulegium	20 (26)	Y	OBL
3. Polystichum munitum	5 (6)	N	FACU
4. Dactylis glomerata	5 (6)	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	75 = Total Cover		

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 30

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (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:

SOIL

Sampling Point: TP3W

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
0-2"	10YR 3/3	100					L	
2-16	10YR 3/2	93	5YR 5/8	6	RM	M	SiL	
			7.5YR 7/4	1	RM	PL		
16-24	7.5YR 3/2	50	10YR 7/8	3	RM	M	SiL	
	10YR 3/2	40	5Y 5/1	4	RM	M		
			10YR 5/8	3	RM	M		10YR 3/2 - 5YR 5/8.
						Other: 1		Δ 2V, 6 = Prominent

[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): 6"

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: Maple Creek 016178.100 City/County: Humboldt Co. Sampling Date: 8/2/16
Applicant/Owner: Adesa Organics State: CA Sampling Point: TP3U
Investigator(s): Cindy Wilcox / Gregg O'Connell Section, Township, Range: T3N, R3E, Sec 2
Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 25
Subregion (LRR): LRR A Lat: 40.671001° Long: -123.810537 Datum:
Soil Map Unit Name: Elkcamp-Airstrip-Highyork complex 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 N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation N, Soil N, or Hydrology N 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 – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	Ø = Total Cover		
Sapling/Shrub Stratum (Plot size: 5)			
1. Baccharis pilularis	10	Y	NL
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: 5)			
1. Dactylis glomerata	70	Y	FACU
2. Cynosurus echinatus	20	N	NL
3. Hypochaeris radicata	10	N	FACU
4. Plantago lanceolata	5	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	105 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	Ø = Total Cover		

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: Ø (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: Ø (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:

SOIL

Sampling Point: TP3U

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 3/1						L	
5-24"	10YR 4/3	80	10YR 6/8	8	RM	M	SiL	
	10YR 6/1	12						

[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:

On hillslope around TP3U. No features but matrix chroma technically. Soil compacted & difficult to dig out. Breaker bar

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) N
- ___ 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: Maple Creek 016178.100 City/County: Humboldt Co. Sampling Date: 8/2/16

Applicant/Owner: Adesa Organics State: CA Sampling Point: TP-4W

Investigator(s): Cindy Wilcox / Grego'connection Section, Township, Range: T 3N, R3E, Sec 2

Landform (hillslope, terrace, etc.): gravel-fill pad Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): LRR A Lat: 40.671001° Long: -123.810537 Datum:

Soil Map Unit Name: Elkcamp-Airstrip-Highyork complex 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 N, Soil Y, or Hydrology Y significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓

Are Vegetation N, Soil Y, or Hydrology Y 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 ____	
Hydric Soil Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: This site appears to have been filled & graded in the past. Redirected seepage area? Grading may have happened before available Google images.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	Ø	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	Ø	= Total Cover	
Herb Stratum (Plot size: 5x5ft)			
1. Total in Report	50	Y	FAC
2. Holcus lanatus	15	N	FAC
3. Hypochoeris radicata	15	N	FACU
4. Mentha pulegium	15	N	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	95	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	Ø	= Total Cover	

% Bare Ground in Herb Stratum 20

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
- ___ 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: TP-12

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	Loc[2]	Texture	Remarks
0-2"	7.5YR 3/2						L	Sod layer - fill
2-20"	10YR 3/2	70					SL	graded
	7.5YR 7/1	10	1 pct reduced					
	7.5YR 8/6	20	fill soil color					
20-24"	10YR 4/3	99	10YR 8/1	1	C	CS	SL	1+ disturbed

[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:

Very compacted. Fill material brought in + compacted. Unable to open soil pit, perhaps on disturbed native soil.

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:

© [illegible]

SHN Consulting Engineers & Geologists, Inc.

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

9/29/2016

Project/Site: Maple Creek 016178.100 City/County: Humboldt Co. Sampling Date:

Applicant/Owner: Adesa organics State: CA Sampling Point: TP5U

Investigator(s): Wilcox/Otonnell Section, Township, Range: T3NR3E, Sec 2

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): LRRA Lat: 40.671001 Long: -123.810537 Datum:

Soil Map Unit Name: Elk Camp-Airstrip-Highyork complex 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? N Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (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: Depression w/ OC, obl. plant. Used lowest point in depression

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2. Ø			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2. Ø			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5')			
1. Cynosurus echinata	70	Y	NL
2. Holcus lanatus	25	Y	FAC
3. Circium vulgaris	2	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1. Ø			
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: 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 ✓

Remarks: Cow Patties & Bed Down area.

SOIL

Sampling Point: TP5U

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
0-1.2'	2.5Y 3/3	100					SCL	very dry

[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) depressional @ toe of slope
- __ 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:

SHN Consulting Engineers & Geologists, Inc.

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

Project/Site: Maple Creek 01/0178.100 City/County: Humboldt Co. Sampling Date: 9/29/16

Applicant/Owner: Adeva Organics State: CA Sampling Point: TF6U

Investigator(s): Wilcox/O'Donnell Section, Township, Range: T3NR3E, Sec 2

Landform (hillslope, terrace, etc.): hillslope drainage Local relief (concave, convex, none): concave Slope (%): 0-3

Subregion (LRR): LRRA Lat: 40.671001 Long: -123.810337 Datum:

Soil Map Unit Name: Elk Camp-Airstrip-Highyork Complex 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? No Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (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 – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2. Ø			
3.			
4.			
	____ = Total Cover		

Sapling/Shrub Stratum (Plot size: 5ft)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		

Herb Stratum (Plot size: 5ft)			
1. Juncus balticus	55	Y	FACW
2. Mentha pulegium	15	N	OBL
3. Juncus effusus	10	N	FACW
4. Cyperus eschentus	30	Y	NL
5. Hypericum perforatum	2	N	FACU
6.			
7.			
8.			
9.			
10.			
11.			
	112 = Total Cover		

Woody Vine Stratum (Plot size: ____)			
1			
2. Ø			
	____ = 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 ✓

Remarks:

SOIL

Sampling Point: TP-Plot 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
0-16	10YR 3/2	100					gravelly SiL	dry

[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:

SHN Consulting Engineers & Geologists, Inc

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

Project/Site: Maple Creek 0161178.100 City/County: Humboldt Co. Sampling Date: 9/29/16

Applicant/Owner: Adesa organics State: CA Sampling Point: TP7W

Investigator(s): Wilcox/O'Connell Section, Township, Range: T3NR3E, Sec 2

Landform (hillslope, terrace, etc.): hillslope drainage Local relief (concave, convex, none): Concave Slope (%): 5-10

Subregion (LRR): LRR F Lat: 40.67100 Long: -123.816-37 Datum:

Soil Map Unit Name: Elk Camp-Airstrip-High York complex 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? No Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____ or Hydrology ____ naturally problematic? NO (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 – 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. Juncus patens	60	Y	FACW
2. Juncus effusus	15	N	FACW
3. Mentha pulegium	20	Y	OBL
4. Epilobium brachycarpum	2	N	NL
5. Holcus lanatus	2	N	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	99 = 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: 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 ✓ No ____

Remarks:

SOIL

Sampling Point: TP1W

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
0-1	10YR 3/2	100					SL	
1-16"	10YR 3/2	92	10YR 4/6	8	RM	M	SiL	

[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:

SHN Consulting Engineers & Geologists, Inc.

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

Project/Site: Maple Creek 01 6178.100 City/County: Humboldt Co. Sampling Date: 9/29/16

Applicant/Owner: Adena organics State: CA Sampling Point: TP4

Investigator(s): Wilcox/Stonnell Section, Township, Range: T3N, R3E, Sec 2

Landform (hillslope, terrace, etc.): hillside drainage Local relief (concave, convex, none): convex Slope (%): 25

Subregion (LRR): LRR A Lat: 40.67160° Long: -123.810.37° Datum:

Soil Map Unit Name: Elk Camp - Airstrip - High York complex 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? No Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (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 – 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. Cyperus echinatus	35	Y	NL
2. Mentha pulegium	25	Y	OBL
3. Epilobium brachycarpum	2	N	NL
4. Holcus lanatus	15	N	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	77 = Total Cover		
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 ✓

Remarks:

SHN Consulting Engineers & Geologists, Inc.

SOIL

Sampling Point: TP74

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
0-16"	2.5Y 3/2	100						

[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:

Consulting Engineers & Geologists, Inc

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

Project/Site: Maple Creek 5146173.100 City/County: Humboldt Co. Sampling Date: 9/29/10

Applicant/Owner: Area organics State: CA Sampling Point: TP 8W

Investigator(s): Willox/Connell Section, Township, Range: T 3N, R 3E, Sec 2

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0-15

Subregion (LRR): LRR A Lat: 40.671001 Long: -123 8.0537 Datum: _____

Soil Map Unit Name: Ellipsis - Shell complex 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? N Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? N (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 – 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. Mentha pulegium	90	Y	OBL
2. Poa pratensis	3	N	FAC
3. Holcus lanatus	3	N	FAC
4. Cyperus eragrostis	3	N	NI
5.			
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: 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

___ 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: TP9W

Consulting Engineers & Geologists, Inc

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"	2.5Y 4/2	90	2.5Y 6/4	10	RM	M	SIL	distinct contrast
5"-16	10YR 3/1	100						

[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: In slight depression - standing water in ditch next to road culvert

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:

SHN Consulting Engineers & Geologists, Inc.

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

Project/Site: Maple Creek 614178.100 City/County: Humboldt Co. Sampling Date: 9/29/10

Applicant/Owner: Adesa organics State: CA Sampling Point: TP84

Investigator(s): Wilcox/O'Connell Section, Township Range: T3NR3E, Sec 2

Landform (hillslope, terrace, etc.): toe slope Local relief (concave, convex, none): convex Slope (%): 6-20

Subregion (LRR): LRR A Lat: 40.67001 Long: -123.81037 Datum:

Soil Map Unit Name: Elkamp-Arsta-Dinsmore complex 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? No Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (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 – 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')			
1. Cynosurus echinatus	75	Y	NL
2. Myrtha pulegium	12	N	Not
3. Holcus lanatus	10	N	FAC
4. Hypochaeris glabra	1	N	NL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	98 = Total Cover		
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: 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 ____	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:

SOIL

Sampling Point: WP-84

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
0-16	10YR 3/2	100						

[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:

SHN Consulting Engineers & Geologists, Inc.

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

Project/Site: Maple Creek 016178.100 City/County: Humboldt Co. Sampling Date: 9-29-16

Applicant/Owner: Adesa organics State: CA Sampling Point: TP9W

Investigator(s): Wilcox/Donnell Section, Township, Range: T3N, R3E, Sec 2

Landform (hillslope, terrace, etc.): pond Local relief (concave, convex, none): concave Slope (%): 0-5

Subregion (LRR): LRR F Lat: 40.67100 Long: -123.810337 Datum:

Soil Map Unit Name: Elk Camp-Airstrip-Highwork complex 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? No Are 'Normal Circumstances' present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (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 – 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. Potamogeton natans	70		OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70 = Total Cover		
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: ____ (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
- ✓ 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: TP4N

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	Loc[2]	Texture	Remarks
0-3	2.5Y 3/1	100					CL	moist
3-16	2.5Y 3/2	95	5Y 8/6	2			CL	moist
	10YR 2/1	40	7.5YR 6/8	3				dominant contrast

[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: In pond

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): ~36" (edge of pond)

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:

SHN Consulting Engineers & Geologists, Inc.

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

Project/Site: Maple Creek 01 6:73.000 City/County: Humboldt Co. Sampling Date: 9/29/16

Applicant/Owner: Area organics State: CA Sampling Point: TP4U

Investigator(s): Willa Cl Donnell Section, Township, Range: T3NR3E, Sec 2

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 25

Subregion (LRR): LRR A Lat: 40.671001 Long: -123.810337 Datum:

Soil Map Unit Name: Elkcamp-Airstrip-Highyork complex 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? No Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? No (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: Berm or pond. Fill soils, but brought in before 1993. Assume normal circumstances

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')			
1. Cynosurus echinatus	55	Y	NL
2. Holcus lanatus	15	N	FAC
3. Prendium aquilinum	2	N	FACU
4. Plantago lanceolata	10	N	FACU
5. Rumex crispus	3	N	FAC
6. Mentha pulegium	3	N	OBL
7. Anthoxanthum odoratum	15	N	FACU
8.			
9.			
10.			
11.			
	103 = 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 ___	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:

SOIL

Sampling Point: TP4

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
0-2	10YR 3/3	95	10YR 7/6	5	C	PL	SiL	Fill soils for roadway embankment
2-16	10YR 3/3	90	10YR 7/6	10	RM	M	SiL	Variable

[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:

Fi

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:

SHN Consulting Engineers & Geologists, Inc.

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

Project/Site: Maple Creek 016178.100 City/County: Humboldt Co. Sampling Date: 7/30

Applicant/Owner: Adena organics State: CA Sampling Point: TP104

Investigator(s): Wilcox/O'tonnell Section, Township, Range: T3NR3E, Sec 2

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 0-5

Subregion (LRR): LRR A Lat: 40.67002 Long: -123.810-37 Datum:

Soil Map Unit Name: Elk Camp - Airstrip - Highspur Complex 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? N Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (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: Used lowest depressed area for test pit with highest density of wetland vegetation.

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. Juncus effusus	30	Y	FACW
2. Carex multicostata	65	Y	NL
3. Veronica pulegium	5	N	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = 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: 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	5	x 1 =	5
FACW species	30	x 2 =	60
FAC species	____	x 3 =	____
FACU species	____	x 4 =	____
UPL species	65	x 5 =	200
Column Totals:	100 (A)		325 (B)

Prevalence Index = B/A = 3.25

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: It's surprising that Carex multicostata is not listed in the regional plant list.

SOIL

Sampling Point: TP10 U

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
0-24	10YR 2/1	40					SiL	Wood debris
	10YR 3/2	60						

[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:

SHN Consulting Engineers

WETLAND DETERMINATION DATA FORM – Western Mountains

Project/Site: Rand Creek 3.4.3.2 City/County: Mendocino Sampling Date: 9/30/16

Applicant/Owner: Adobe Organics State: CA Sampling Point: TP11WT

Investigator(s): Wiley, Stanley Section, Township, Range: 28, R12E, T16N

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 5-10

Subregion (LRR): LRR F Lat: 40.671001 Long: -123.810537 Datum:

Soil Map Unit Name: Elkcamp-Airstrip-Highyork complex 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? No Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (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 – 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. Vulpia pulegium	45	Y	OBL
2. Lolium sp.	2	N	FAC
3. Hordeum marinum	10	Y	FAC
4. Dactylis glomerata	10	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum: ____

Remarks:

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

____ 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants

____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? Yes ✓ No ____

SOIL

Sampling Point: TP1W

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	Loc	Texture	Remarks
3-6	7.5YR 5/3	98	7.5YR 5/8	2	RM	M	C	V fine dark
			7.5YR 5/2	4	RM	M		prominent contrast
6-16	7.5YR 5/3	90	7.5YR 5/8	10	RM	M	SL	

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

*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*:

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

*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)
- ___ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? Yes ___ No ✓ Depth (inches): ___ Wetland Hydrology Present? Yes ___ No ___

(includes capillary fringe)

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

Remarks

SHN Consulting Engineers & Geologists, Inc.

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

Project/Site: Map Area 1, 2, 3 City/County: Trinity Sampling Date:

Applicant/Owner: Caltrans State: CA Sampling Point: TP 4

Investigator(s): Wilcox/Conner Section, Township, Range: T 35N, R 3E, Sec 2

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Conc/Ex Slope (%): 15

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

Soil Map Unit Name: Elkamp-Airstrip-Hayfork complex 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? N Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (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 ✓	
Hydric Soil Present?	Yes ____	No ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Wetland Hydrology Present?	Yes ____	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: 5')			
1. Dactylis glomerata	40	Y	FACU
2. Poa annua	10	N	FAC
3. Lupesurus echinatus	50	N	NL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Cover of Biotic Crust ____ Present? Yes ____ No ✓

Remarks:

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 ____	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 ≤3.0¹

___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants¹

___ Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes ____ No ✓

SOIL

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	Loc	Texture	Remarks
0-12	10YR 3/1	90						
12-16	10YR 4/1	90						

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains 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:

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

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)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ 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? Yes ___ No ___ Depth (inches): _____ Wetland Hydrology Present? Yes ___ No ___

(includes capillary fringe)

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

Remarks

Consulting Engineers & Geologists, Inc.

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

Project/Site: [illegible] City/County: [illegible] Sampling Date: 9/30/11

Applicant/Owner: [illegible] State: [illegible] Sampling Point: TP12W

Investigator(s): Wilcox/Connell Section, Township, Range: [illegible]

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope: 0-2

Subregion (LRR): LRR A Lat: [illegible] Long: [illegible] Datum: [illegible]

Soil Map Unit Name: Elkcamp-Listrip-Highyork complex NWI classification: [illegible]

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? N Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (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: Sharp break in slope at toe of terrace [illegible]

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. Bromus pacificum	70	Y	UPL
2. Poa pratensis	20	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 5

Remarks:

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 ✓ No ____

SOIL

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	Loc	Texture	Remarks
0-19	10YR 3/2		10YR 5/6	15	RM	M	SiL	gleyed layer with mottles
			5YR 5/8	1	RM	M		
19-32	10YR 3/2		10YR 5/6	5	RM	M	SiL	

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. 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:

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

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)
- ___ Sphagnum moss (D8) (LRR T, U)
- ___ Raised Ant Mounds (D6) (LRR A)

Field Observations:

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

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

Saturation Present? Yes ___ No ✓ Depth (inches): _____ Wetland Hydrology Present? Yes ✓ No ___

(includes capillary fringe)

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

Remarks:

Consulting Engineers & Geologists, Inc.

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

Project/Site: Maple Creek 2 : 2.7 acres City/County: Mendocino Sampling Date: 9/30/16

Applicant/Owner: Adept Engineers State: CA Sampling Point: 1 P124

Investigator(s): Wilcox/Stoner Section, Township, Range: S 5, T 20N, R 12W

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Conc Slope (%): 10-15

Subregion (LRR): LRR A Lat: 39° 27' 13.3" Long: 123° 48' 52.8" Datum: NAD 83

Soil Map Unit Name: Elk Camp-Trinidad-Higgins complex 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? N Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? N (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 – 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. Lupinus glabratus	25	Y	FACU
2. Eupatorium rugosum	2	N	NL
3. Anthoxanthum odoratum	5	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	32 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum: 68

Remarks:

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 ___	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

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

___ 5 - Wetland Non-Vascular Plants

___ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? Yes ___ No ✓

TP12H

SOIL

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	Loc	Texture	Remarks
0-3	10YR 3/2	99	2.5Y 7/6	1%	C/M	M	SiL	very dry

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. 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 of Problem (for Hydric Soils):

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

Wetland vegetation, 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)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ 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? Yes ___ No ✓ Depth (inches): _____ Wetland Hydrology Present? Yes ___ No ✓

(includes capillary fringe)

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

Remarks:

SHN Consulting Engineers & Geologists, Inc.

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

Project/Site: Maple Creek 016178.100 City/County: Humboldt Co. Sampling Date: 9/30/16

Applicant/Owner: Adera Ventures State: CA Sampling Point: TP13W

Investigator(s): Wilcox/O'Donnell Section, Township, Range: T3N, R3E, Sec 2

Landform (hillslope, terrace, etc.): draining on hillslope Local relief (concave, convex, none): concave Slope (%): 8

Subregion (LRR): LRR A Lat: 40.671001 Long: -123.818737 Datum:

Soil Map Unit Name: Elkamp - Airstrip - Highlyne complex 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? N 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: Drainage from pond above.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2. Ø			
3.			
4.			
	____ = Total Cover		

Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3. Ø			
4.			
5.			
	____ = Total Cover		

Herb Stratum (Plot size: 5ft)			
1. Mentha Pulegium	40	Y	OBL
2. Poa pratensis	50	Y	FAC
3. Carex multicostata	5	N	NL
4. Dactylis glomerata	10	N	FACU
5. Juncus balticus	5	N	FACW
6.			
7.			
8.			
9.			
10			
11.			
	110 = Total Cover		

Woody Vine Stratum (Plot size: ____)			
1.			
2. Ø			
	____ = 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
- ✓ 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: TP13

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
0-16"	10YR 3/2	85	10YR 7/8	15*				very dry
	10YR 4/2	70		* gradually decrease in depth to ~ 5%				prominent contrast

[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:

Bank / toe, concave & on slope.

SHN Consulting Engineers & Geologists, Inc.

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

Project/Site: Maple Creek 31-78.000 City/County: Humboldt Co. Sampling Date: 9/30/16

Applicant/Owner: Adena organics State: CA Sampling Point: TP13U

Investigator(s): Wilcox/Stonner Section, Township, Range: T3N R3E Sec 2

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 8

Subregion (LRR): LRR A Lat: [illegible] Long: [illegible] Datum:

Soil Map Unit Name: Ellamp-Airstrip-Higgonbotham complex 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? No Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (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: next to drainage from pond

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2. Ø			
3.			
4.			
	____ = Total Cover		

Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4. Ø			
5.			
	____ = Total Cover		

Herb Stratum (Plot size: 5')			
1. Dactylis glomerata	40	Y	FACU
2. Poa pratensis	30	Y	FAC
3. Cynosurus echinatus	20	Y	NL
4. Hypochaeris radicata	5	N	FACU
5. Mnium pulgeum	2	N	(OBL)
6.			
7.			
8.			
9.			
10.			
11.			
	97 = Total Cover		

Woody Vine Stratum (Plot size: ____)			
1. Ø			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 2

Remarks:

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

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

___ 5 - Wetland Non-Vascular Plants

___ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? ✓

TP 8

SOIL

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	Loc	Texture	Structure
0-16"	10YR 3/2	99%	7.5YR 5/6	<1	F	M	SL	Very dry

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. 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:

- ___ [illegible]
- ___ [illegible]
- ___ [illegible]

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____ ✓

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)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? Yes ___ No ✓ Depth (inches): _____ Wetland Hydrology Present? Yes ___ No ✓

(includes capillary fringe)

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

Remarks

slope, not concave.

SHN Consulting Engineers & Geologists, Inc.

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

Project/Site: Maple Creek 016178.100 City/County: Humboldt Co. Sampling Date: 10/7/11

Applicant/Owner: Adesa organics State: CA Sampling Point: TP14U

Investigator(s): Wilcox/Otonnell Section, Township, Range: T3N,R3E, Sec 2

Landform (hillslope, terrace, etc.): hill slope Local relief (concave, convex, none): none Slope (%): 15-20

Subregion (LRR): LRRA Lat: 40.671001 Long: -123.810337 Datum:

Soil Map Unit Name: Elkcamp-Airstrip-Highyork complex 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? N Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (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 – 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. Bog pratensis	70	Y	FAC
2. Holcus lanatus	30	Y	FAC
3. Juncus patens	1	N	FACW
4. Rumex crispus	1	N	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	102 = 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: 2 (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:

SOIL

Sampling Point: TP14W

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
0-20	10YR 3/2	60					SiL	drier than TP14-W
	10YR 3/4	40						

[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

Plant List

Table D-1 Plant List Adesa Organic, Korbel, California		
Scientific Name	**Common Name**	**Indicator 2016[1]**
Abies concolor	white silver fir	NL
Acer macrophyllum	bigleaf maple	FACU
Achillea millefolium	yarrow	FACU
Agrostis capillaris	colonial bentgrass	FAC
Agrostis exarata	bentgrass	FACW
Agrostis stolonifera	creeping bent grass	FAC
Aira caryophyllea	silvery hairgrass	FACU
Alnus rhombifolia	white alder	FACW
Alnus rubra	red alder	FAC
Anthoxanthum odoratum	sweet vernal grass	FACU
Arbutus menziesii	madrono	NL
Asarum caudatum	creeping wild ginger	FACU
Athyrium filix-femina var. *cyclosorum*	western lady fern	NL
Avena fatua	wildoats	NL
Baccharis pilularis ssp. *consanguinea*	coyote brush	NL
Bellis perennis	English lawn daisy	NL
Brassica nigra	black mustard	NL
Brodiaea elegans	harvest brodiaea	FACU
Bromus tectorum	cheatgrass	NL
Carex athrostachya	slender leaved sedge	FACW
Carex leptopoda	slender-footed sedge	FAC
Carex multicostata	many ribbed sedge	NL
Cirsium arvense	Canada thistle	FAC
Cirsium vulgare	bullthistle	FACU
Cynoglossum grande	hound's tongue	NL
Cynosurus echinatus	dogtail grass	NL
Cyperus eragrostis	tall flatsedge	FACW
Dactylis glomerata	orchard grass	FACU
Danthonia californica	California oatgrass	FAC
Elymus glaucus ssp. *glaucus*	blue wild rye	NL
Epilobium brachycarpum	willow herb	NL
Epilobium ciliatum	willow herb	FACW
Equisetum telmateia ssp. *braunii*	giant horsetail	FACW
Festuca idahoensis	blue fescue	FACU
Festuca occidentalis	western fescue	UPL
Festuca perennis	Italian rye grass	FAC
Fragaria vesca	wild strawberry	FACU
Frangula californica	California coffeeberry	NL
Galium triflorum	sweet bedstraw	FACU

Table D-1 Plant List Adesa Organic, Korbel, California		
Scientific Name	**Common Name**	**Indicator 2016[1]**
Glyceria declinata	low mannagrass	FACW
Helenium bigelovii	Bigelow's sneezeweed	FACW
Holcus lanatus	common velvetgrass	FAC
Holodiscus discolor	oceanspray	FACU
Hypericum perforatum	Klamathweed	FACU
Hypochaeris glabra	smooth cat's ear	NL
Hypochaeris radicata	hairy cats ear	FACU
Juncus bolanderi	Bolander's rush	OBL
Juncus bufonius var. *bufonius*	toad rush	FACW
Juncus effusus ssp. *pacificus*	pacific rush	FACW
Juncus patens	rush	FACW
Lathyrus sp.	pea	NL
Leucanthemum vulgare	ox- eye daisy	FACU
Linum bienne	flax	NL
Lupinus bicolor	miniature lupine	NL
Madia gracilis	gumweed	NL
Maianthemum stellatum	starry false lily of the valley	FAC
Mentha pulegium	pennyroyal	OBL
Mimulus dentatus	tooth leaved monkeyflower	OBL
Navarretia squarrosa	skunkweed	FACU
Osmorhiza berteroi	sweet cicely	FACU
Oxalis oregana	redwood sorrel	FACU
Parentucellia viscosa	yellow parentucellia	FAC
Pentagramma triangularis	gold back fern	NL
Philadelphus lewisii	wild mock orange	NL
Pinus ponderosa	yellow pine	FACU
Plantago lanceolata	ribwort	FACU
Plantago subnuda	naked plantain	FACW
Poa annua	annual blue grass	FAC
Poa pratensis	Kentucky blue grass	FAC
Polystichum munitum	western sword fern	FACU
Potamogeton natans	floating pondweed	OBL
Pseudotsuga menziesii var. *menziesii*	Douglas fir	FACU
Pteridium aquilinum var. *pubescens*	western bracken fern	FACU
Quercus garryana	Oregon oak	FACU
Quercus kelloggii	California black oak	NL
Ribes sanguineum var. *glutinosum*	flowering currant	FACU
Rubus armeniacus	Himalayan blackberry	FAC
Rubus leucodermis	white stemmed raspberry	FACU

Table D-1 Plant List Adesa Organic, Korbel, California		
Scientific Name	**Common Name**	**Indicator 2016[1]**
Rubus parviflorus	thimbleberry	FACU
Rubus spectabilis	salmon berry	FAC
Rubus ursinus	California blackberry	FACU
Rumex acetosella	sheep sorrel	FACU
Rumex crispus	curly dock	FAC
Salix lasiolepis	arroyo willow	FACW
Sanicula crassicaulis	pacific sanicle	NL
Scoliopus bigelovii	slink pod	NL
Spergularia rubra	ruby sandspurry	FAC
Stachys ajugoides var. *rigida*	hedge nettle	OLB
Symphoricarpos albus var. *laevigatus*	snowberry	FACU
Taraxacum officinale	red seeded dandelion	FACU
Tellima grandiflora	fringe cups	FACU
Toxicodendron diversilobum	poison oak	FAC
Trifolium obtusiflorum	creek clover	FAC
Trifolium repens	white clover	FAC
Umbellularia californica	California bay	FAC
Viola glabella	stream violet	FACW
Whipplea modesta	modesty	NL

1. Indicators are abbreviated as follows:
   OBL: Obligate
   FACW: Facultative
   FAC: Facultative
   FACU: Facultative upland
   UPL: Upland
   NL: Not listed



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www.shn-engr.com

1062 G St., Suite I, Arcata, CA 95521-5800 707-822-5785
Civil Engineering, Environmental Services, Geosciences, Planning & Permitting, Surveying

Reference: 016178.500

February 4, 2019

Laura Borusas
23550 Maple Creek Rd.
Korbel, CA 95550

Subject: Biological Resources in your project area

Dear Ms. Borusas:

As per your recent request, SHN has reviewed the special-status species habitat availability in the vicinity of your project location at 23550 Maple Creek Rd in Korbel, CA. Habitat assessments were conducted for animal species during site visits in 2017, as noted in the Natural Resources Assessment (NRA) (SHN, 2017). The potential for occurrence of those species included on the list were then evaluated based on the habitat availability within your project area.

In May and June of 2018, SHN conducted three additional biological site visits to investigate the occurrence of special status species. The only special-status species that were observed were red-legged frog (*Rana aurora*) and grasshopper sparrow (*Ammodramus savannarum*).

In regard to the question of how the special-status species scoping list in the 2017 NRA and species observed at your project site differs from an adjacent project site to the south along the Mad River, the following criteria should be considered:

Proximity to the Mad River

Some species are expected along the Mad River, such as Western Pond Turtle (*Actinemys marmorata*) which requires aquatic vegetation and algae for food as well as open areas for basking. In comparison, upper Cowan Creek within your project area is mostly a narrow, steep-sided drainage with significant canopy cover. This may also restrict fish-eating species that require open water for an aerial approach.

Proximity to contiguous mature coniferous forest

Many special status birds and mammals on the CNDDB scoping list are typically associated with coniferous forests. Your project area contains minimal patches of mixed conifer and hardwoods, concentrated along upper Cowan Creek. The adjacent property to the south, along the Mad River, is surrounded by coniferous forest with much closer proximity to extensive coniferous forest on the south side of the Mad River.

Differing elevation and habitat types

The property along the Mad River, directly to the South of your Study Area has an approximate median elevation of 1,000 feet, whereas your project area is at a range of approximately 2,300 to 2,800 feet. Plants and trees in particular may have specific elevation ranges where they typically occur. Plant communities and tree species composition are often different at higher elevations than they are at lower elevations which can change the habitat availability for particular animal species with elevational changes.

Please feel free to contact me at 707-822-5785 with any questions or if further clarification of this information is required.

Respectfully submitted,

SHN

Gretchen O'Brien
Biologist

GAO:ceg

References: SHN Consulting Engineers & Geologists. 2017. *Natural Resources Assessment, AMT, LLC*, Korbel, CA.

Phone: (707) 822-5785 Email: arcata@shn-engr.com Web: shn-engr.com
1062 G Street, Ste. I, Arcata, CA 95521-5800

Reference: 016178.500

November 1, 2019

CONFIDENTIAL

Laura Borusas
23333 Maple Creek Rd.
Korbel, CA 95550

Subject: Grasshopper Sparrow (*Ammodramus savannarum*) Impacts and Mitigation Measures for Project-related Activities at AMT, LLC

Dear Ms. Borusas:

An impact analysis of the proposed project at 23333 Maple Creek Rd, Korbel, CA has been conducted and mitigation measures regarding the grasshopper sparrow are recommended below. The Natural Resources Assessment prepared by SHN, dated December 2017 included a CNDDB database for the Mad River Buttes and surrounding quadrangles. The CNDDB report from CDFW did not include an occurrence of the grasshopper sparrow at the time, nor did field visits detect the grasshopper sparrow, and therefore the species was not analyzed in the Natural Resources Assessment. The grasshopper sparrow occurrence that was documented onsite in May of 2018 was part of a dataset submitted to CNDDB and is now included in query reports for the Mad River Buttes quadrangle.

The grasshopper sparrow is not listed as Threatened or Endangered under State or Federal Endangered Species Acts but is listed as a species of special concern (nesting) by CDFW. This species makes inconspicuous ground nests in short grass prairies. Impacts to the grasshopper sparrow may occur, particularly during the breeding season (typically April through July) if project activities encroach on grassland habitat. This species migrates to southern climates in the fall through winter, so it is not expected to occur onsite from September to March.

The open grassland portions of your project area are considered potential habitat for the grasshopper sparrow. Two (2) individual detections of the grasshopper sparrow were noted during a site visit on May 30, 2018 (see Figure 1).

Avoidance and minimization measures for impacts to the grasshopper sparrow:

- Limit ground disturbance and construction to the non-breeding season for the grasshopper sparrow. If mowing, work on structures, or other ground disturbance is done between August 31 and April 1, these activities are not likely to affect reproductive success.
- If project-related development activities must occur during the reproductive season, nesting bird surveys should be performed by a qualified biologist to ensure that no active nests are destroyed. If active nests are found, a protective no-work buffer should be established around the nest by the biologist until the nest has fledged.

If the above recommendations are implemented, the proposed project should not have a negative impact on nesting grasshopper sparrows.

Feel free to contact me at 707-822-5785 with any questions or concerns.

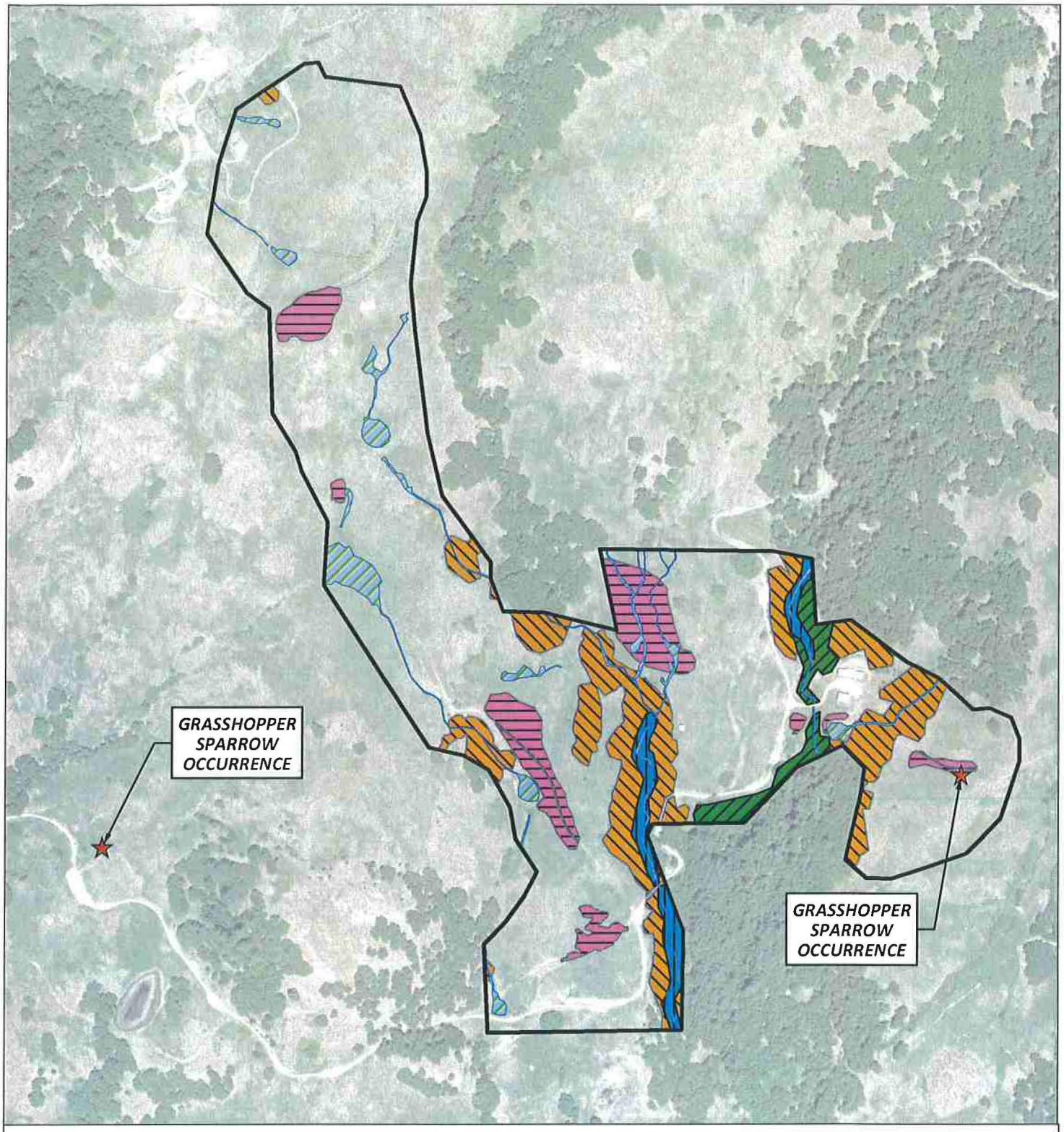
Respectfully submitted,

SHN

Gretchen O'Brien
Senior Wildlife Biologist

GAO:ceg

Cc: Cliff Johnson, County of Humboldt
Cheri Sanville, CDFW



EXPLANATION

- GRASSHOPPER SPARROW
- STUDY AREA
- OHWM
- WETLANDS
- CALIFORNIA BAY FOREST
- CALIFORNIA OAT GRASS PRAIRIE
- DOUGLAS FIR FOREST
- OREGON WHITE OAK WOODLAND

0 600

1" = 600'±

N

IMAGE SOURCE: GOOGLE EARTH, 5/26/2016

Path: \\Arcata\Projects\GIS-Files\Eureka\2016\016178-AMT\500_NRA\PROJ_MXD\NRAADD_Fig1_GrasshopperSparrow.mxdUser Name: jsousa

SHN	AMT Addendum to Natural Resources Assessment Korbel, Humboldt County, California	Grasshopper Sparrow Occurrences SHN 016178.500
October 2019	NRAADD_Fig1_GrasshopperSparrow	Figure 1

PACIFIC NORTHWESTERN BIOLOGICAL
RESOURCES CONSULTANTS, Inc.
P.O. Box 2416, McKinleyville, CA 95519-2416 – Phone (707) 845-5940
e-mail: sandra@pacnwbio.com

December 8, 2018

Laura Borusas
23550 Maple Creek Rd.
Korbel, CA 95550

RE: Eagle Assessment and Spotted Owl information update

Dear Ms. Borusas

Please find attached a biological assessment for Golden Eagle and Bald Eagle for the AMT project. My assessment determined that your project would not have a significant negative impact on either the Golden Eagle nor the Bald Eagle.

Regarding the Northern Spotted Owl, as was already stated in previous submissions to the county, there is no critical designated habitat of NSO in or near the project area. Forested areas adjacent or close proximity to the project are dominated by true Oaks (Quercus spp.) which do not leaf out until after the egg laying period thus they are not considered nesting habitat. When large stands of oak at high density are present, they only offer foraging habitat once they leaf out; well into the breeding season, well past the nest selection phase. There are forested areas that do include a conifer component besides oak, but they are present as narrow "fingers" following drainages. Although some of these stands, may meet some spotted owl habitat specifications, the narrowness of them make them unsuitable for nesting opportunities as they are too open from the sides (not a large enough contiguous area). As such, there is no nesting habitat in proximity to the AMT project on your property. Also, your project is not removing any timber and would be considered a noise disturbance only project which is typically assessed at a ¼ mile from the project. There is no suitable habitat within ¼ mile of the project area, and the project is already following the minimum noise disturbance levels for generator use of 50 decibels at 100ft, thus no Spotted Owl surveys would be necessary. Spotted Owl habitat on neighboring Green Diamond Resource Company is monitored annually under their Habitat Conservation Plan. As mentioned in the Technical Memorandum dated August 31, 2018, there are 3 Spotted Owl sites monitored in the vicinity of the AMT project: HUM 0657 (~1.8 miles NW), HUM 1035 (~0.6miles N), and HUM 1038(~1.1mi W). I checked with the Green Diamond Resource Company Wildlife Department and all three sites' final status was unoccupied for 2018.

If you need additional information, please give me a call at 707-845-5940 or email at sandra@pacnwbio.com.

Sincerely,

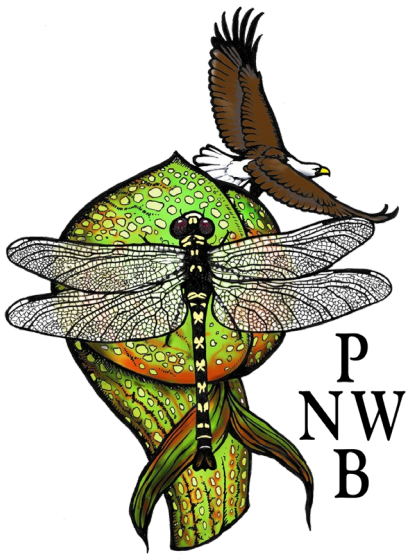
/S/ via email

Sandra Hunt-von Arb
Senior Biologist

Attachment:
Biological Assessment Addendum- Golden Eagle and Bald Eagle by PNWB dated 12/8/2018.

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BIOLOGICAL ASSESSMENT ADDENDUM
GOLDEN EAGLE AND BALD EAGLE

Prepared for

AMT, LLC
Korbel California

RE: Permit Application No. APPS#s

11923	**APN: 315-211-004 & 315-145-002**	**CUP-16-452**
11924	**APN: 315-146-018 & 315-222-003**	**CUP-16-453**

December 8, 2018

By: Sandra Hunt-von Arb
Senior Biologist

The purpose of this assessment is to give additional information and assessment of Golden Eagle (Aquila chrysaetos), and Bald Eagle (Haliaeetus leucocephalus) with a focus on local (Humboldt County level and local project assessment area level) information. It should be treated as additional to the Natural Resource Assessment prepared by SHN dated December 2017 and the Technical Memorandum by Gretchen O'Brien of SHN dated August 31, 2018 already submitted to Humboldt County for the aforementioned permits.

Golden Eagle

General:

The Golden Eagle (GOEA) is widely distributed throughout the northern hemisphere where habitat exists. In Humboldt County, CA, they are associated with Douglas-fir-Prairie mix, where there is a large prairie component. While average territory size is often quoted to be approximately 10 mi^2, their size is highly dependent on prey availability. Where extensive surveys have been conducted in Humboldt County (Coastal Douglas-fir prairie zone in the general Mattole River/Bear River area), GOEA nests/core areas were found to be 1-1.5 miles apart suggesting a much smaller than average territory size. As a species, GOEA predominantly nest on cliffs with occasional use of large trees; in Humboldt County, they primarily nest in very large Douglas-fir trees with only one known historical cliff nest. Although forging areas can and do overlap, GOEA are highly territorial centered around their active nest

Typically, GOEA in Humboldt County nest in very large (≥4.5' DBH), old Douglas-fir with large enough branches and structure to support a large (>6' wide) stick nest. These nests are typically found in the middle third of the tree, on steep ground along river corridors on the middle third of the slope, and despite their size, can be difficult to see from the ground and/or helicopter. The most effective method for finding nests, are through ocular surveys with aid from a spotting scope from prominent locations that view large areas of prairie and also view forested areas (preferably from across the drainage). Surveys should begin early in the season (mid January with a peak in mid February)when eagles are most visible as they make impressive aerial displays meant to establish their territory boundaries as well as pair bonding displays. These include, but are not limited to, large pronounced undulating flight displays along ridges, wide upward circling along a vertical line that continue to great heights (where they disappear even while using a scope), dropping of items and catching them mid-air, and clipping of live branches (with their bill, like loppers) to line the nest. I have observed GOEA copulate on the ground following aerial displays. Had I not observed the eagle land on the ground, I never would have seen it, as it was far and looked like just another rock in the middle of the prairie to the naked eye. This time period, when GOEA are most visible is most effective at narrowing down the core area and possibly even which stand of forest they are nesting in but often additional surveys are needed to key in on the nest tree itself. Once GOEA lay eggs, they enter a secretive period, (presumably to avoid revealing the nest location) where they are harder to find as well as follow once they are found. While GOEA are the largest raptor in North America, they are amazingly adept at being secretive when necessary, flying low at as well as below canopy level. They again become less secretive during the late nestling period when parents increase prey deliveries as the eaglets grow in both size and appetite.

Based on prey remains I have observed at the base of several GOEA nests and favored roosts near the nest, the diet of GOEA in Humboldt County is varied. While they are adept at hunting, they often feed

on carrion and while they are known to primarily feed on mammals, they will also hunt larger birds. GOEA pairs are also known to hunt cooperatively (e.g. one individual separating young from their parents and the second individual swooping in the take the young. When GOEA are present at carrion, they are the dominant avian species; I have witnessed Ravens and Turkey Vultures wait their turn while a GOEA eats carrion. Some of the prey items I have observed (viewing hunting, and searching for prey remains at bases of several nest trees and favored perch trees) are; fawn (whole observed in a nest), jackrabbits, piglets (observed hunting, catching, and flying off), turkey, skunk, merganser, goat, lamb, fox, cattle carrion, deer carrion etc. Anecdotally, I spoke to a long time rancher about historical GOEA activity for a nest near their ranch on the Eel River and they spoke of not being able to keep cats as a child due to the eagles eventually catching them all, as well as more recently observing them hunting turkeys whose populations have been exploding. GOEA either perch on prominent snags near ridgetops within the prairie matrix or fly high above searching for prey as well as keying in on other carrion eating species such as corvids and turkey vultures to locate carrion. When hunting live prey, they tend to fly from a relatively long distance and do not dive straight down; it is more of an on the wing swoop down towards the prey which is typically on the ground (i.e. not in flight or in a tree). This hunting style requires more open space than the perch and dive method or the hover and dive method often employed by raptors that primarily feed on ground based prey in general.

Project Specific:

A field visit led by Laura Borusas was conducted on October 29th from 11:00-16:00 to familiarize myself with the specific project area, a description of the proposed activities and re-familiarization of the immediate surrounding habitat. I was also the wildlife biologist for Big Bend Ranch, which is adjacent to the project, in the mid-2000's for a previous landowner and before it became a retreat. At that time, the Ranch had both timber harvest, restoration, and ranching activities (Cattle and Goats). In the past, I have also surveyed, monitored, and visited the GOEA nest mentioned in the Technical Memorandum and thus already familiar with that specific territory. Additionally, I have reviewed survey data (survey summaries and station maps) from 2017 and 2018 conducted by Green Diamond Resource Company (GDRCo) as part of two nearby Timber Harvest Plans. GOEA specific surveys were conducted ~2miles north as well as ~1mile north and northeast of the AMT Project area. I also discussed longer term eagle surveys and their activity in the general area with GDRCo biologists. Gretchen O'Brien of SHN, conducted two surveys in 2018 for the project area. They were described in the Technical Memorandum dated August 31, 2018, however, I did not have survey data forms or station maps to review.

As described in previous documents, there is a known GOEA nest approximately 1.6 miles to the south of the project area with no known alternate nest for this territory. It is across Mad River, on the other side of the drainage where the area is primarily forested as is typical on a north slope. Current general GOEA activity matches what was known in the mid 2000's. 2018 surveys conducted for this project did not observe any eagles. Surveys conducted by GDRCo observed a pair of GOEA in 2017 over 2miles north of the AMT project area with no breeding behavior and no detection during follow-up surveys and stand searches. In 2018, they observed one subadult GOEA in June in the same vicinity, suggesting a successful nest in that general area. No adult GOEA were observed throughout the surveys consisting of 7 points each monitored 3 separate times for ~ 3hours each visit. This suggests the nest was not in the immediate proximity to the survey area. No eagles were observed while surveying for the Timber Harvest Plan adjacent and to the east of the AMT project. Based on personal experience, the prairies in

this vicinity are primarily used for foraging. Based on the volume of surveys and the lack of consistent eagle activity, it is likely that foraging conducted over a wide area and thus not often observed. Prey remains I found below a favored perch near the historic nest included small goat legs which likely came from directly across the drainage on Big Bend Ranch which at the time leased land to a goat farmer. Large numbers of deer, jackrabbits, and turkeys are often observed in the area, suggesting there is ample prey.

The area of construction is basically tucked in between two narrow "fingers" of forest that follow draws within the prairie. These are largely a mix of true oaks and Douglas-fir with a minimal component of other hardwoods and conifers. No prominent large snag or snag top trees (preferred roosts and hunting perches) were observed in the immediate vicinity, although some were noted to the east and southest on adjacent property. No trees large enough with ample branching structure to support a GOEA nest were observed. Trees in the forested areas adjacent to the project are somewhat small and lack large old Douglas-fir or similar conifers typical of nests in Humboldt County.

The area is surrounded by vast foraging habitat. While the area of proposed construction is prairie, due to the vicinity of treed areas on multiple sides, it should be considered as very low quality foraging habitat, especially considering the amounts of more open and therefore higher quality foraging habitat throughout the area. Also, GOEA have been foraging in the area since at least 2002 when the nest was discovered. Foraging has been done while local ranching and timber activities have been ongoing throughout the area and as such GOEA in this region have been tolerant of overall low level or temporally short term higher level human activities in this drainage (e.g. ranch road use and maintenance, building of barns and shed, timber harvest, deer hunting, etc.)

The project proposes use of generators and mixed light as part of their operations. Noise would be of concern if there was a nearby nest which is not the case. Eagles are sight hunters and unlike owls, do not use hearing to aid in hunting. Also, it is my understanding that the project will meet or exceed the threshold of 50 decibels at 100 feet that the county already requires in general. Regarding mixed light, it is my understanding that greenhouses will be shielded so that the little light that might escape would be at a level that not visible from neighboring properties between sunset and sunrise.

Historical and current knowledge of GOEA activity in the area shows that the AMT area is of low-quality of foraging. The closest known nest is over 1.5 miles away and uses the wide prairie area on the north side of the Mad River as foraging. Surveys for both the project and neighboring landowner activities support that GOEA continue to use the area primarily for foraging. Noise from generators will meet or exceed 50 decibels at 100 ft. Greenhouse light will be shielded between sunset and sunrise. GOEAs in this region are already accustomed to ranching and timber harvest associated human activities. Based on statements above, it is my professional opinion that the AMT project will not cause a significant negative impact to Golden Eagles.

Bald Eagle

General:

The Bald Eagle (BAEA) is found in North America From Alaska and Canada down into Mexico. While their numbers plummeted primarily due to the effects of DDT, recovery in Humboldt County has been

slow and mostly recent. In the early 1990's there was only one known nest in Humboldt County along the Trinity River just inside the County. One had to drive to Trinity County and look over the river into Humboldt County to view the nest. There were a relatively large number (for that time) of nests on the Klamath River in neighboring Del Norte County. New BAEA nest began being discovered in the Eel River watersheds and Humboldt Bay Region it the early 2000's. BAEA nests in the Mad River Watershed were first discovered above the fish hatchery and the first and only BAEA nest on Humboldt Bay was built in the fall/winter of 2005/2006. They have, so far, tended nest along major rivers in areas already inhabited by Osprey (Pandion haliaetus). It has been noted by local biologists that monitor Osprey, that Osprey nests nearest BAEA nests tend to be abandoned, and/or at a minimum flight lines to feeding areas are altered to avoid the defended BAEA nest core area. BAEA nests tend to be built in large conifers along major rivers such as the Klamath River, Mad River, Eel River as well as near the Humboldt Bay (Humboldt Bay Eagle nest in northern Humboldt Bay, and nest near College of the Redwoods that forages in south Humboldt Bay). BAEAs and GOEAs are fierce competitors and do not tolerated each other. So long as there is ample foraging habitat, GOEA are dominant. Their need for prairie for foraging limit their local range to the Oak/Douglas-fir prairie regions. BAEA do not require prairie for foraging and despite their varied diet tend to prefer fish overall. In summary, in Humboldt County, they are currently found along rivers in more heavily treed areas also typical of Osprey habitat (fish obligate)

While BAEAs can be long distance migrators, they can also be resident. BAEA can be found in Humboldt County year-round with a pulse in numbers during the Salmon Runs. The Humboldt Bay Eagles were monitored via a nest-cam year-round with and although they left the area during the winter months, they returned after severe winter storms for a day or two to check on the nest. They were also seen initially building their first nest in late November 2005 so it is surmised that they are likely lateral migrators; moving to nearby good feeding grounds- likely following Salmon runs, while staying close enough to periodically visit their nest. A nest on the SF Eel River is monitored by local Wildlife Photographer Talia Rose (County Line Wild Photography), and eagles are present at the nest during nesting season (typically beginning in mid to late February) and then leave after the young fledge, however, BAEA are seen along the river throughout the non- breeding season. Sub-adult BAEAs are known to be great travelers sometimes traveling hundreds of miles until settling on a territory as they reach maturity (typically at 5 years of age in areas of low density such as Humboldt County).

In Humboldt County, nest building and pre-nesting maintenance typically begins in February or March. Egg laying is highly dependent of each individual female (monitored marked individuals lay their eggs in their own 14 day window which varies by individual). They typically use the same nest, but can and will build a new nest near an old nest, but they typically use the same nest for many years. They are highly territorial creating a "no fly zone" in the immediate vicinity of their nest.

Their diet is primarily fish based, but they have a very broad overall diet that includes fish, birds, mammals and carrion. In Humboldt County, they have been observed eating: assorted river fishes such as Salmon, invasive Pike Minnow, and Lamprey: A large variety of ocean/bay fish: birds such as waterfowl, egrets, and shorebirds: Mammals such as skunk, rats, racoon (likely road kill): and Carrion.

Project Specific:

BAEAs have not be observed during the breeding season during many years of Golden Eagle Surveys in the general area. They have been observed along the Mad River in the winters during the Salmon Runs.

Most of these eagles are migratory. While there are known BAEAs along the Mad River, they are, so far, only found just above the Mad River Hatchery in mostly Redwood/Douglas fir forest along the River. Further up river, as the habitat changes to Oak/Douglas-fir prairie, there are GOEAs.

The Project area does not affect the river corridor where BAEA are typically seen in the winter. Also, during the breeding season, GOEA are territorial and would outcompete BAEA. For these reasons, this project will not have a significant negative impact on Bald Eagles.

Qualification of the preparer, Sandra Hunt-von Arb: Sandra has been conducting surveys and/or habitat assessments for diurnal and nocturnal raptors since 1996 and specifically eagles since 1999. She has spent hundreds of hours conducting eagle surveys in Humboldt County alone, using several survey methodologies including stationary ocular surveys, moving ocular surveys, stand searches, and helicopter surveys. She was part of the team of private biologists that worked with CDFW-Timber Division on determining the best methods to find Golden Eagle nests in Humboldt County in the early 2000's. She has also recently been involved with Golden Eagle cliff nest enhancement and creation using novel non-blasting methods. Furthermore, she is the lead biologist for the "Humboldt Bay Eagle Nest" and was co-coordinator of the Humboldt Bay Eagle Nest Cam. She continues to work in the region on eagles as well as other wildlife.

1062 G St., Suite I, Arcata, CA 95521-5800 707-822-5785
Civil Engineering, Environmental Services, Geosciences, Planning & Permitting, Surveying

Technical Memorandum

Reference: 016178.500
Date: **August 31, 2018**
To: **Greg Williston**
From: **Gretchen O'Brien**
Subject: **AMT Biology**

This memorandum is to summarize the biology information obtained in 2018 regarding the AMT project at 23550 Maple Creek Road, Korbel, CA (Figure 1 attached) and is an update to the Natural Resources Assessment produced in December 2017 (SHN, 2017[1]).

Golden Eagle (*Aquila chrysaetos*)

Data Query

A Golden Eagle occurrence report was acquired from the California Department of Fish & Wildlife (CDFW) on May 22, 2018 (attached). According to this report, a single historical Golden Eagle nest location is approximately 1.6 miles to the south of the nearest AMT property boundary (Google Earth map attached). The most recent confirmed observation of Golden Eagle at this location was in 2012. Golden Eagle habitat delineated within and surrounding the AMT property CDFW BIOS Data Viewer was obtained on June 18, 2018 (attached).

Survey

An SHN biologist (Gretchen O'Brien) conducted two site visits for Golden Eagle observation and habitat assessment on the AMT property. On May 30, 2018, observation was made by walking/driving along the main access road through the property. Turkey Vultures (*Cathartes aura*) and Red-tailed Hawks (*Buteo jamaicensis*) were observed flying overhead. The property is comprised primarily of open, sloping grassland. Narrow corridors of conifer habitat line the two creeks that run north-south through the property. No audio or visual detections of Golden Eagle were recorded during this site visit (5.5 hours).

On June 19, 2018, Gretchen O'Brien conducted a 2-hour stationary ground observation survey for Golden Eagle within the vicinity of the AMT project area (survey station location map attached) which resulted in no Golden Eagle observations or audio detections. The survey location was placed with a wide (approximately 5 miles) view of the surrounding aerial space (weather conditions: clear skies, 80 degree F, wind B.S. 2/3). Several Turkey Vultures and Red-tailed Hawks were observed flying over the AMT property during the survey.

Discussion

Golden Eagles nest predominantly on cliff sides, though large trees are also used. The known nest in the Maple Creek area is located in a large Douglasfir tree (60" DBH, 160' tall). Most of the habitat available within the AMT property is considered of medium suitability for Golden Eagle. The small patches of conifers

are delineated as high suitability. Much of the high suitability habitat in the vicinity is delineated on the south side of the Mad River, where the known nest is located.

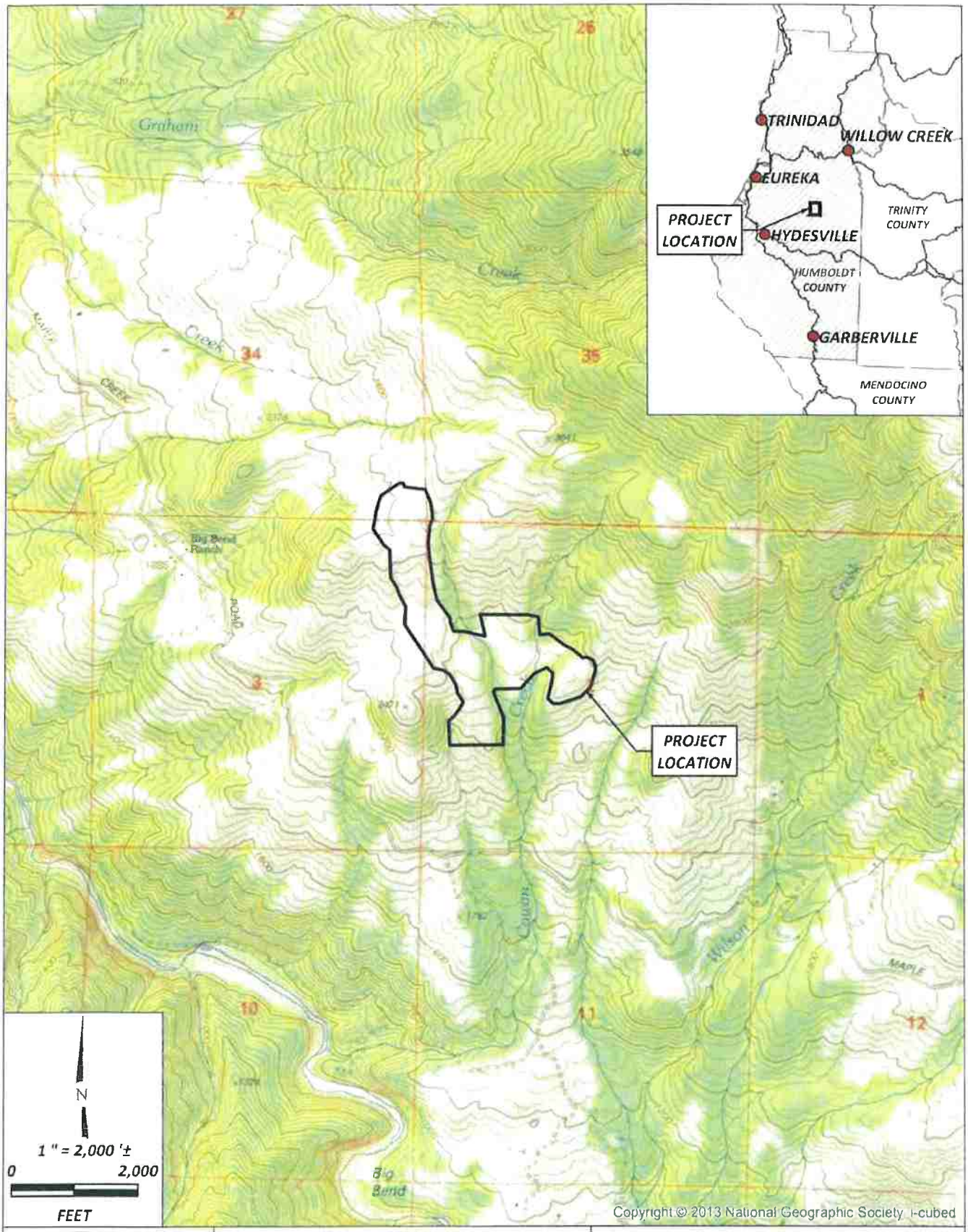
Golden Eagles typically have a home range of about 10 miles and can have more than one nest within a territory. Some foraging habitat does exist within the AMT property boundary. A consolidation of the proposed project to one area would provide for larger contiguous foraging habitat availability for Golden Eagles on the AMT property if the birds utilize the area.

Northern Spotted Owl (*Strix occidentalis caurina*)
Adjacent Northern Spotted Owl location information was obtained from Green Diamond Resource Company (GDRC) on June 19, 2018. Known locations surveyed and monitored by GDRC in the vicinity of the AMT property in Maple Creek include HUM0657 approximately 1.8 miles to the northwest (unoccupied as of 6/19/18), HUM1035 approximately 0.6 miles to the north (unoccupied as of 6/19/18), and HUM1038 approximately 1.1 miles to the west (unoccupied as of 6/19/18).

A protocol survey for Northern Spotted Owl was not conducted for the AMT property in 2018.

Discussion
Habitat for Northern Spotted Owl within the AMT property is limited to the narrow stretches of conifers along the two creeks that run through the property. The available habitat may provide roosting and potentially foraging opportunities for Northern Spotted Owl, although much more suitable habitat for roosting, foraging, and nesting exists in the surrounding landscape in the larger patches of contiguous conifer forest.

[1]SHN. 2017. Natural Resources Assessment – AMT. Korbel, CA



Path: \\eureka\projects\2016\016178 AMT\GIS\PROJ_MXD\Natural_Resource_Assessment\Figure1_ProjectLocationMap1.mxd User Name: psundberg

Consulting Engineers & Geologists, Inc.	AMT Natural Resource Assesment Korbel, Humboldt County, California	Project Location Map SHN 016178.500
	December 2017 | Figure1_ProjectLocationMap1	Figure 1

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Species IS (Aquila chrysaetos)
 AND County IS (Humboldt)

Map Index Number:	49818	**EO Index:**	49818
Key Quad:	Mad River Buttes (4012367)	**Element Code:**	ABNKC22010
Occurrence Number:	81	**Occurrence Last Updated:**	2003-01-08

Scientific Name: *Aquila chrysaetos* **Common Name:** golden eagle

Listing Status: **Federal:** None
State: None

CNDDB Element Ranks: **Global:** G5
State: S3

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
CDF_S-Sensitive
CDFW_FP-Fully Protected
CDFW_WL-Watch List
IUCN_LC-Least Concern
USFWS_BCC-Birds of Conservation Concern

General Habitat:

ROLLING FOOTHILLS, MOUNTAIN AREAS, SAGE-JUNIPER FLATS, AND DESERT.

Micro Habitat:

CLIFF-WALLED CANYONS PROVIDE NESTING HABITAT IN MOST PARTS OF RANGE; ALSO, LARGE TREES IN OPEN AREAS.

Last Date Observed:	2002-06-12	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2002-06-12	**Occurrence Rank:**	Excellent
Owner/Manager:	BLM	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

SOUTH OF BIG BEND, MAD RIVER.

Detailed Location:

NEST IS LOCATED 92' HIGH IN THE NEST TREE AND PLACED IN A CROTCH AGAINST THE BOLE; NEST IS LARGE (4' X 4'), BUT DIFFICULT TO SEE DUE TO PLACEMENT IN THE TREE.

Ecological:

NEST TREE IS A DOUGLAS-FIR (60" DBH, 160' TALL), WITHIN OLD GROWTH DOUGLAS-FIR / TANOAK FOREST.

Threats:

General:

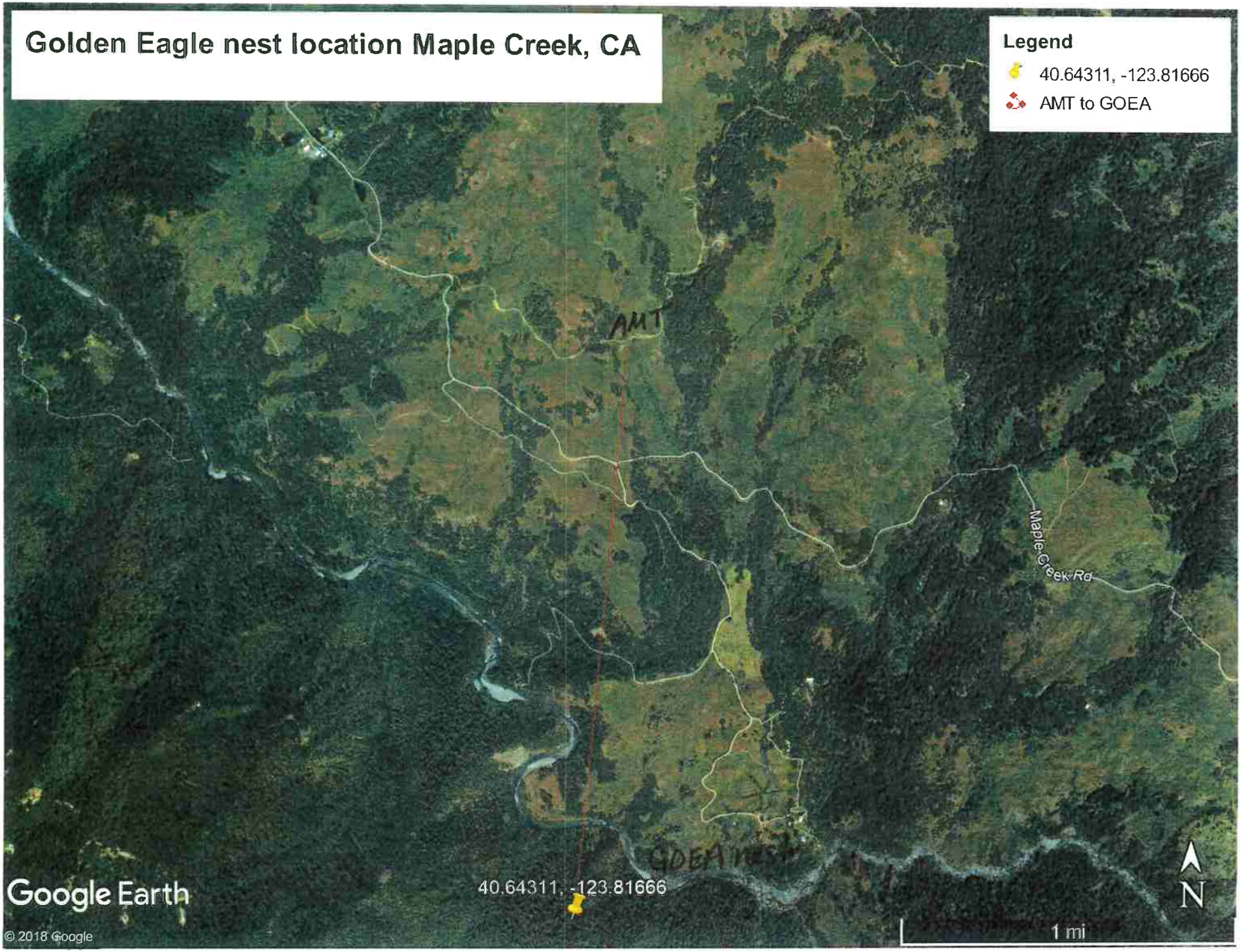
1 EAGLET WAS HEARD CALLING FROM THE NEST ON 12 JUN 2002.

PLSS:	T03N, R03E, Sec. 15, NE (H)	**Accuracy:**	80 meters	**Area (acres):**	0
UTM:	Zone-10 N4499460 E430948	**Latitude/Longitude:**	40.64311 / -123.81666	**Elevation (feet):**	1,600

County Summary:	**Quad Summary:**
Humboldt	Mad River Buttes (4012367)

Sources:

BRA02F0002 BRADLEY, L.C. (SCOTIA PACIFIC COMPANY) - FIELD SURVEY FORM FOR AQUILA CHRYSAETOS (NEST SITE) 2002-06-12

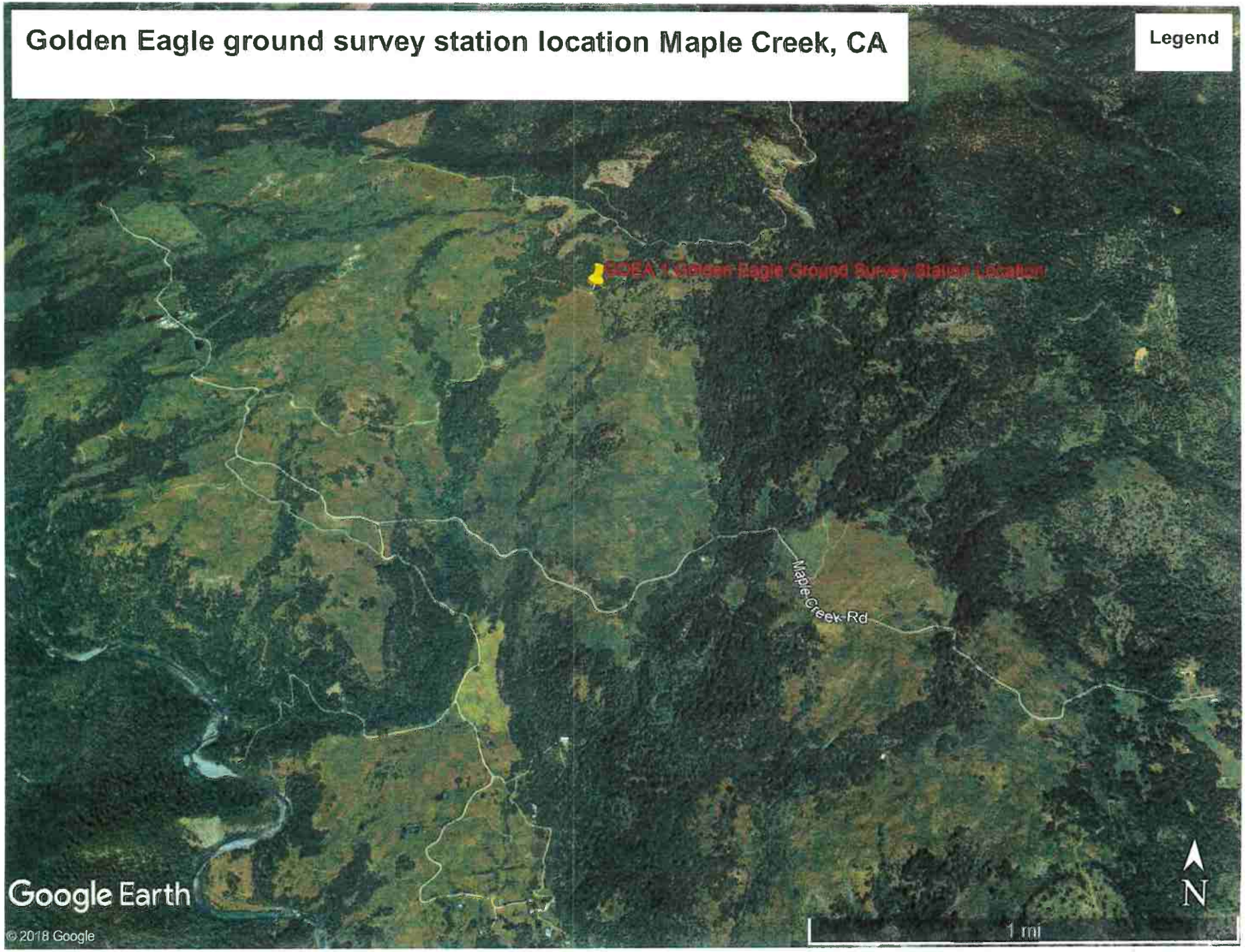

Golden Eagle nest location Maple Creek, CA
Legend
40.64311, -123.81666
AMT to GOEA
AMT
Maple Creek Rd
GOEA nest
40.64311, -123.81666
Google Earth
© 2018 Google
N
1 mi

CALIFORNIA DEPARTMENT OF FISH and WILDLIFE BIOS

Maple Creek, CA

Golden Eagle Habitat
Green = High Suitability
Brown = Medium Suitability

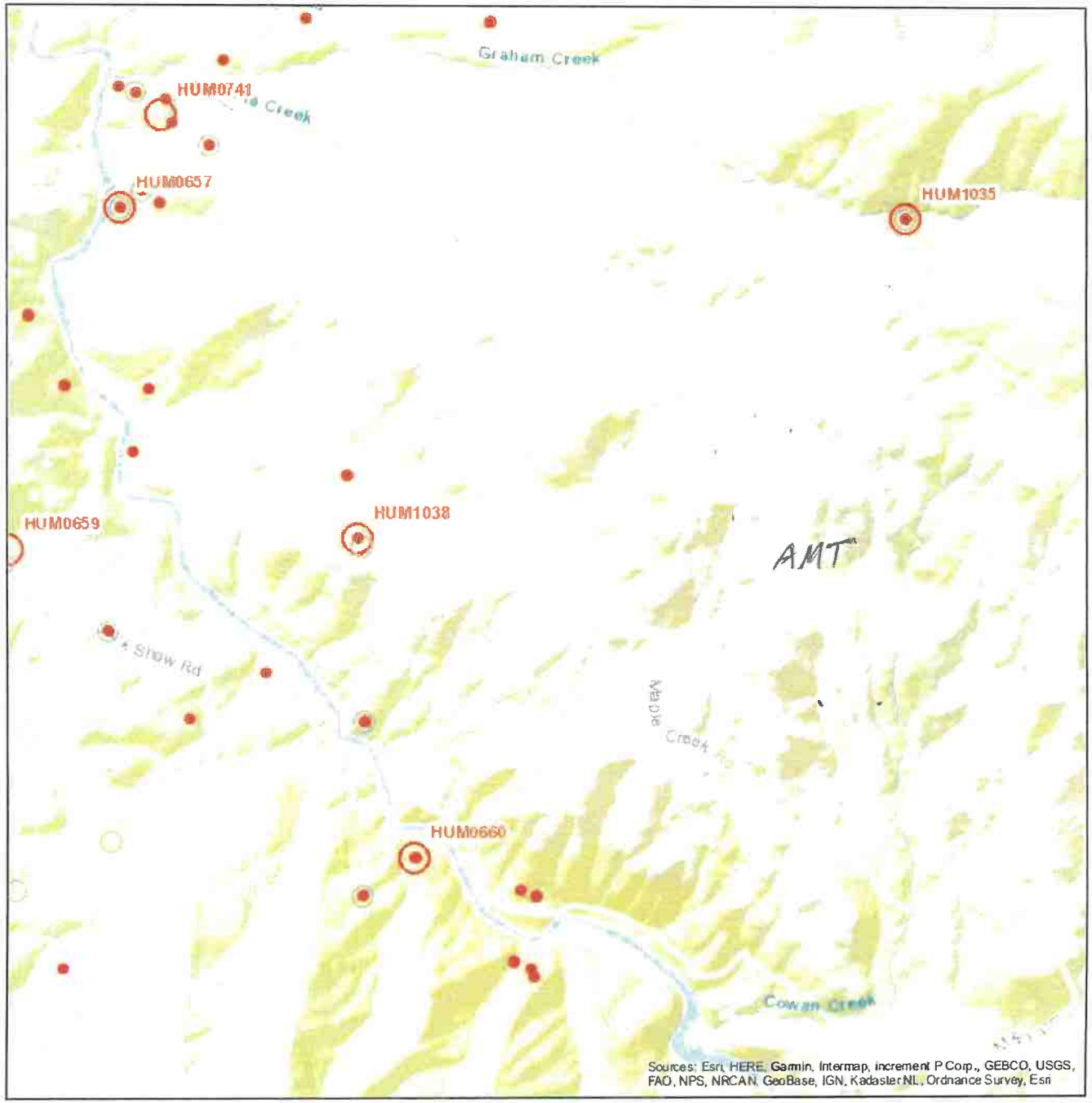



Golden Eagle ground survey station location Maple Creek, CA
Legend
BOEA 1 Golden Eagle Ground Survey Station Location
Maple Creek Rd
Google Earth
© 2018 Google
1 mi
N

Northern Spotted Owl Locations Maple Creek, CA

Spotted Owl Observations [ds704]

- Positive Observation
- Negative Observation
- Activity Center
- Not Valid Activity Center
- Abandoned



N

1:36,112

0 0.3 0.6 1.2 mi

0 0.5 1 2 km

August 31, 2018

Author: cnddb_com

PACIFIC NORTHWESTERN BIOLOGICAL
RESOURCES CONSULTANTS, Inc.
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e-mail: sandra@pacnwbio.com

February 8, 2019

Laura Borusas
23550 Maple Creek Rd.
Korbel, CA 95550

RE: Golden Eagle additional assessment.

Dear Ms. Borusas

My assessment dated December 8, 2018 determined that your project would not have a significant negative impact on Golden Eagles. Since that time, it has come to our attention that the known Golden Eagle nest territory mentioned in that assessment used an alternate nest on the north side of Mad River on the Wilderness Ranch. This new alternate nest was discovered last season by biologists working for the Wilderness Ranch, but was not shared with you nor I, and thus was not part of my initial assessment. We can only take into consideration what is known and sharing of information is critical to making the best assessment as wildlife do not recognize anthropomorphic boundaries. Just as important, as new information is made available, it is important to reassess using that new information.

I have contacted Keith Slauson, a biologist working for Wilderness Ranch and at the suggestion Andrew Orahoske of the California Department of Fish and Wildlife (CDFW), there will be more sharing and as much as feasible, more coordination. Mr. Slauson will also be monitoring the nest in 2019 and letting me know if the eagles return to that nest this year. I have also been communicating with biologists at Green Diamond Resource Company; they will be conducting Golden Eagle Surveys to the north and west of your project although it will be over a mile away. Mr. Orahoske shared the coordinates of the 2018 nest with me and I visited the surrounding area with you on January 29th. The visit should be considered a roaming survey as we spent 4.5 hours surveying the area for good observation points (where we had access) that would cover the area around your project as well as the airspace above the 2018 nest (which is not visible outside of the Wilderness Ranch for which we do not have permission to enter.) I used both binoculars and a scope to view the area during our survey and we covered areas on the neighboring ranch to the south (west of Wilderness Ranch), the county road and your property. While I still do not think Golden Eagle Surveys are necessary for your project, Mr. Orahoske did mention he was interested in wanting to find out how these eagles use the area. Conducting some surveys would be helpful in that endeavor, whether the surveys would be necessary for your project or not.

The 2018 nest is closer to your project that the historic location, but further than a half mile, let alone a quarter of a mile away (common assessment distances used in Timber Harvest Biological Assessments). In large areas where comprehensive surveys have been conducted in Humboldt County, densities of Golden Eagles is high and the fact that these eagles moved closer to your project further supports that your project area is within this Golden Eagle territory. Additionally, they chose to move closer to

human activities; the initial nest site is in a rather remote area and has no housing or continual human activity, unlike the new nest site. Further, your project area is situated in a prairie between narrow forested areas that make that section of prairie less desirable to the hunting style of Golden Eagles in general. With additional viewing of the area, I still did not observe the types of trees that Golden Eagles use in Humboldt County (very large, old growth Douglas-fir) near your project area and thus there is no concern that a Golden Eagle nest would move-in near the project site.

Due to the above considerations, my initial assessment that Golden Eagle surveys are not necessary remains unchanged, however, doing some surveys would be useful to the overall knowledge of how these eagles use the area in general.

If you need additional information, please give me a call at 707-845-5940 or email at sandra@pacnwbio.com.

Sincerely,

/S/ via email

Sandra Hunt-von Arb
Senior Biologist

PACIFIC NORTHWESTERN BIOLOGICAL
RESOURCES CONSULTANTS, Inc.
P.O. Box 2416, McKinleyville, CA 95519-2416 – Phone (707) 845-5940
e-mail: sandra@pacnwbio.com

RECEIVED
MAY 02 2019
Humboldt County
Cannabis Svcs.

May 2, 2019

Laura Borusas
23550 Maple Creek Rd.
Korbel, CA 95550

RE: Golden Eagle 2019 survey update for Permit Application No. APPS#s
11923 APN: 315-211-004 & 315-145-002 CUP-16-452
11924 APN: 315-146-018 & 315-222-003 CUP-16-453

Dear Ms. Borusas,

Golden Eagle 2019 surveys for the ATM project are complete. As requested by Andrew Orahoske, biologist for the California Department of Fish and Wildlife (CDFW), I used the following protocol:

> Pagel, J.E., D.M. Whittington, and G.T. Allen. 2010. Interim Golden Eagle inventory and
> monitoring protocols; and other recommendations. Division of Migratory Bird Management, U.S. Fish and Wildlife Service.

Two fixed observation points were surveyed twice for at least 4 hours and at least 30 days apart; once in March and once in April. Additionally, there was a roaming survey in February, and roaming surveys either before and/or after observation point surveys. The nest is not visible from any observations points we had access to (all the property in the area is private), and they are further away from the nest as is suggested, however, one observation point had good visibility of the "air space" above the nest and the second observation point had good visibility of the project area.

Golden Eagles were detected, associated with the Big Bend Territory on the Wilderness Ranch (historically south of the Mad River on U.S. Bureau of Land Mangement property). Sightings were all below Maple Creek Road. The closest observation was of an adult perching on the large snag near and below the main entrance of the Wilderness Ranch off of Maple Creek Road.

As requested by CDFW, we are coordinating with the biologist working for the Wilderness Ranch, who is monitoring the nest. Keith Slauson has informed me that the

nest on the Wilderness Ranch is active this year. This is consistent with the Golden Eagle activity that was observed during our surveys. We are meeting Thursday, May 3 to discuss our current results and the coordination of ***potential*** future surveys and/or monitoring.

A report with results based on our survey data, data forms/maps, and results of the shared information with the Wilderness Ranch biologist is forthcoming and expected to be complete on Friday , May 4.

If you need additional information, please give me a call at 707-845-5940 or email at sandra@pacnwbio.com.

Sincerely,

/S/ via email

Sandra Hunt-von Arb
Senior Biologist

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RECEIVED
OCT 17 2019
Humboldt County
Cannabis Svcs.

October 17, 2019

Laura Borusas
23550 Maple Creek Rd.
Korbel, CA 95550

RE: Golden Eagle 2019 survey update for Permit Application No. APPS#s
11923 APN: 315-211-004 & 315-145-002 CUP-16-452
11924 APN: 315-146-018 & 315-222-003 CUP-16-453

Dear Ms. Borusas,

Apologies for the very late report. Golden Eagle 2019 surveys for the ATM project are complete. As requested by Andrew Orahoske, biologist for the California Department of Fish and Wildlife (CDFW), I used the following protocol:

> Pagel, J.E., D.M. Whittington, and G.T. Allen. 2010. Interim Golden Eagle inventory and
> monitoring protocols; and other recommendations. Division of Migratory Bird Management, U.S. Fish and Wildlife Service.

Two fixed observation points were surveyed twice for at least 4 hours and at least 30 days apart; once in March and once in April. Additionally, there was a roaming survey in February (previously discussed), and roaming surveys either before and/or after observation point surveys. The nest is not visible from any observations points we had access to (all the property in the area is private), and they are further away from the nest as is suggested, however, one observation point had good visibility of the "air space" above the nest and the second observation point had good visibility of the project area.

Golden Eagles were detected, associated with the "Big Bend" Golden Eagle Territory on the Wilderness Ranch (historically south of the Mad River on U.S. Bureau of Land Mangement property). Sightings were all below Maple Creek Road. The closest observation was of an adult perching on the large snag near and below the main entrance of the Wilderness Ranch off of Maple Creek Road. Overall, it is my observation that the majority of all raptor activity is at lower elevations than this project.

As requested by CDFW, we are coordinating, as feasible, with the biologist working for the Wilderness Ranch, who is monitoring the nest. I met with Keith Slauson, their biologist, on May 3rd. Although he had informed me previously that the nest was again active for 2019, he did not mention it had returned to nesting south of Mad River until the May 3rd meeting. He was continuing to monitor the nest from an observation point on the Wilderness Ranch. We discussed where the eagles were observed, and he did state that the majority of the sightings were short in duration and eagles flew low up and down the Mad River corridor. Additionally, I confirmed with him that all the sightings they had to date, both in 2018 and 2019, were below Maple Creek Road.

Your project area is situated in a prairie between narrow forested areas that make that section of prairie less desirable to the hunting style of Golden Eagles in general. With additional viewing of the area, I still did not observe the types of trees that Golden Eagles use in Humboldt County (very large, old growth Douglas-fir) near your project area and thus there is no concern that a Golden Eagle nest would move-in near the project site. Additionally, all of the sightings of Golden Eagles in the area have been below Maple Creek Road and that includes the surveys I conducted in the mid 2000's for the Big Bend Ranch at that time. As such, it continues to be my professional opinion that your project would have no significant impacts to Golden Eagles.

If you need additional information, please give me a call at 707-845-5940 or email at sandra@pacnwbio.com.

Sincerely,

/S/ via email

Sandra Hunt-von Arb
Senior Biologist

Attachements:
2019 Survey forms

PACIFIC NORTHWESTERN BIOLOGICAL
RESOURCES CONSULTANTS, Inc.
P.O. Box 2416, McKinleyville, California 95519-2416 – Phone: (707) 845-5940

Golden Eagle Survey Form

Location, Time and Weather Data

Project Name: AMT			**Site Name:** Big Bend						**County:** HUM	
Type of Visit:			Project Survey- Station 2						**Date:** 03/04/19	
THP		Nest	Other (explain)						MM/DD/YY	
Surveyor(s): S. Hunt-von Arb					**Pages:** 1					
Time (24 hr)	**Start:** 10:58(10:37)		**Finish:** 15:07 (16:09)		**Elapsed Time** (minutes): 249					
Precipitation	x	x				**Wind**	x	x		
	None	mist/fog	drizzle	light rain	rained out		calm	breeze	moderate	blown out

Notes and Comments (describe survey conditions and note any raptors observed, all GOEA detections must be accompanied by a map.)
This station is on neighboring landowner and client was given the lock combo to access this area. Station was placed in this area as it is the best view of the space above the known Golden Eagle Core area that we have access to. It has far better visibility than can be attained from Maple Creek Road due to topographical features.

10:37- -There are still low clouds & fog affecting visibility: I started to survey as there is visibility of the prairie below me and the fog appears to be slowly clearing.

10:46-Turkey Vulture -came in from the northwest flying low over the patch of oak trees. It stayed low and continued south easterly and then turned westerly flying below me and continued westerly out of sight.

10:58-Red-tailed Hawk -Pair flying together east to west and circling over the field below me to the east. Circled several times rising in elevation up and then flew northward.

10:58- -Note that Fog has lifted with just a few straggling low clouds over ridges to the SW. Visibility now adequate for **official survey start time**.

11:17-Red-tailed Hawk -Single dark morph flying south to north overhead- direct flight

11:37-Red-tailed Hawk -Came from the south, first spotted on south side of Mad River. It circled several times over prairie on north side of river and then perched on a power pole for less than one minute before taking off and flying to the north.

12:00 -note that all the clouds/fog are now gone and have miles of visibility.

13:39-Red-tailed Hawk -Flying west to east; perches in oak tree approx. 300m below me.

12:33-Red-tailed Hawk - Circled several times over prairie and was then joined by a second individual, they circled several times together, gaining in altitude before heading north.

12:34-Bald Eagle - Bald eagle came from the east flying along the Mad River corridor, it then turned to the NW and flew through the circling Red-tailed hawks and circled a few times in the same space before continuing to the NW (in the general direction of Big Bend Ranch).

12:35-Turkey Vulture -Circling over the prairie where the hawks and eagles had circled just previous- I was following the Bald Eagle and when I turned around the vulture was already there. It eventually flew westerly along the north side of the Mad River corridor.

12:38-American Kestrel -Female hunting along oak tree/prairie edge up by Maple Creek road. Typical kiting behavior with intermittent perching in between. It was in that general area for at least 15minutes, but I did not see it actually leave the area.

12:45-Red-tailed Hawk -Flying westerly above powerline and then circled a few times before heading north.

14:06-Red-tailed Hawk -Red-tailed Hawk perched on a power pole below me (to the east); I was scanning the area with my binoculars and scope; I did not see it fly in. I continued to scan the area and periodically checked the pole, it was still there at 14:23. At 14:33 it was circling over the power poles and it eventually left to the east flying past Cowan Creek and out of my sight.

15:03-American Kestrel -Male perched above me to the northwest.

15:07-End official Survey - not enough daylight to conduct St 1 survey- will come back within a few days as weather allows.

I drove slowly up the ranch road to the gate and stopped along the way, continuing to scan. Then I headed east on Maple Creek Road past Wilderness Ranch and then back west and left through Big Bend Ranch at 1609. Raptors sighted during the unofficial traveling survey: American Kestrel, Northern Harrier, Red-tailed Hawk, Red-shouldered Hawk, Turkey Vulture (not a raptor, but tracked as such for raptor surveys in general).

There appeared to be a general northerly movement of Red-tailed Hawks typical of spring migration.

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Golden Eagle Survey Form

Location, Time and Weather Data

Project Name: AMT				**Site Name:** Big Bend					**County:** HUM	
Type of Visit:				Project Survey- Station 1					**Date:** 03/08/19	
	THP		Nest		Other (explain)				MM/DD/YY	
Surveyor(s): S. Hunt-von Arb					**Pages:** 1/1a					
Time (24 hr)	**Start:** 10:28			**Finish:** 15:36 (16:31)		**Elapsed Time** (minutes): 308				
Precipitation	x					**Wind**	x	x		
	None	mist/fog	drizzle	light rain	rained out		calm	breeze	moderate	blown out

Notes and Comments (describe survey conditions and note any raptors observed, all GOEA detections must be accompanied by a map.)
Two Red-tailed hawks observed while driving through Big Bend Ranch on my way to this station.

10:28-	-Begin survey; Overcast with high clouds. Visibility goes for miles. Snow still visible on higher elevation prairies throughout valley.
11:39-American Kestrel	-Male fly through east to west above me not the north
12:09-Northern Harrier	-Female conducting low foraging flights along the ridge to the northwest. It came into view sporadically, as it was actually foraging on the other side of the ridge, so I only could see it when it flew high enough or right on the ridge.
12:14-Turkey Vulture	-came in from downslope and soared just above tree tops and then veered to the west and continued out of sight.
13:32-Turkey Vulture	-flew in from the west and continued easterly in direct flight.
14:11-American Kestrel	-Male observed to the west flying north to south. It continued southerly out of view.
14:30-	-Four hour survey complete, but will continue for one hour at station 1b.
14:34-American Kestrel	- Male perched on small Douglas fir tree below (south); possibly the same individual sighted at 14:11. At 14:36 it flew off its perch and flew southerly and then began kiting intermittently along its flight (foraging) just above and along Maple Creek Road.
14:58-Peregrine Falcon	- observed flying northwesterly over Wilderness Ranch (over building in middle of prairie). It then flew above and along the eastern edge of Cowan Creek, then turned easterly, flying above the large prominent snag near the Wilderness Ranch gate and then continued to the southeast out of sight.
15:36-End official Survey	- continued to do traveling survey stopping along the road at points that had good visibility in subdrainages.

I drove slowly down to Maple Creek road and headed east past Wilderness Ranch and then turned around and continued westerly on road and quite surveying once I got past Big Bend Ranch at 16:31. Raptors sighted during this additional traveling survey: Red-tailed Hawk, American Kestrel, Turkey Vulture, Red-shouldered Hawk.

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Golden Eagle Survey Form

Location, Time and Weather Data

Project Name: AMT			**Site Name:** Big Bend					**County:** HUM	
Type of Visit:			Project Survey- Station 2/2a					**Date:** 04/17/19	
THP		Nest	Other (explain)					MM/DD/YY	
Surveyor(s): S. Hunt-von Arb				**Pages:** 4					
Time (24 hr)	**Start:** 0552		**Finish:** 09:53 (10:54)		**Elapsed Time** (minutes): 241				
Precipitation	x					**Wind**	x			
	None	mist/fog	drizzle	light rain	rained out		calm	breeze	moderate	blown out

Notes and Comments (describe survey conditions and note any raptors observed, all GOEA detections must be accompanied by a map.)
I set up my blind just below the ranch road and just above the powerline. I began surveying at 0552 at twilight. There was some fog covering parts of the highest ridges, but it did not affect the immediate survey area. Fog bank could be seen far out to the west. I was surrounded by cows. Dawn songbird chorus was dominated by American Robins amongst many other species. There was a lot of Northern Flicker activity in the patch of Oak trees just below me.

06:48- American Crows	-Several calling with agitated calls.
06:50- Golden Eagle	-Heard calling from the SSE down near the river. No visual.
06:52- American Crows	-Several flying downstream (westerly) over Mad River
07:04- American Kestrel	-Male flies in and perches on small Douglas-fir. Moves perches between trees and power poles several times. Female joins him and they circles several times, once over my blind.
0833-	-Note that all nearby ridges are fog/low cloud free. Fog bank far to the west still visible. -very little bird activity, other than Western Meadowlarks calling and foraging amongst the cows
08:55	- decide to walk through the prairie following the powerline, using power poles as "cover"
09:00	- arrive at the power pole I was aiming for, it does have a better view of the lower prairie between Station 2 and Cowan Creek near the the Mad River, but can't see as much air space to the east of Cowan Ck. I decide to sit at the power pole, using it as a blind of sorts for an hour to see if there is any raptor activity in that lower prairie.
09:16-Golden Eagle	-First detection of large flying raptor flying through the trees along Cowan Creek. As it emerges from the trees, I can see American Crows are following and can positively identify the large raptor as a Golden Eagle. It is flying over Cowan Creek and then begins flying westerly along the Mad River Corridor (coming closer to me).
09:18-	-The eagle LANDS JUST BELOW ME in a Douglas-fir. Three American Crows are dive bombing and harassing it. It gets hit by American crows several times before leaving.
09:20-	-The eagle leaves and flies back easterly towards Cowan Creek with American Crows continuing the harassment along the way. It flies up and down that drainage, staying below Maple Creek Road, twice before turning easterly and flying out of my sight- American Crows were following and dive bombing the eagle the entire time. Lost view at ~09:22
09:30-	-I decide to head back to the blind, to see if I can see the eagle to the east of Cowan Creek.
09:38-American Kestrel	-Male is sitting on top of a broken top snag-it appears it may be standing on a small rodent, but it's hard to see.
09:38-Common Raven	-Raven flies from the west and circles once over the kestrel and then over my blind, calling, then returns to the west.
09:48-American Kestrel	-Male leaves snag top and flies northerly.
09:53	-END official survey- quickly break down the blind and continue to survey stopping along the ranch road at good view points along the way. Once on Maple Creek Road, I head east hoping to get a good view of the area the Golden Eagle went to, but I get no further eagle sightings.
10:19	-I turn around and head back westerly and continue to look for raptor activity as I head to St. 1.
10:54	-end additional traveling survey at gate to access St. 1

**see pages 2 and 3 for photographs of Golden Egle, map is page 4.

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Golden Eagle Survey Form

Big Bend Survey St. 2/2a
04/17/19 Page 2 of 4

Golden Eagle flying over Cowan Creek first sighted at ~09:16





Golden Eagle Flying westerly on north side of Mad River -along river corridor being chased by American Crows





Golden Eagle perches on Douglas-fir below power pole (2a on map) at ~09:18 continually harassed by American Crows





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Golden Eagle Survey Form
Big Bend Survey St. 2/2a

Golden Eagle leaves & heads towards Cowan Creek at ~ 09:20 followed by American Crows continually bombarding it.





It flies up and down Cowan Creek twice (staying below Maple Creek Road) with American Crows continually harassing it.

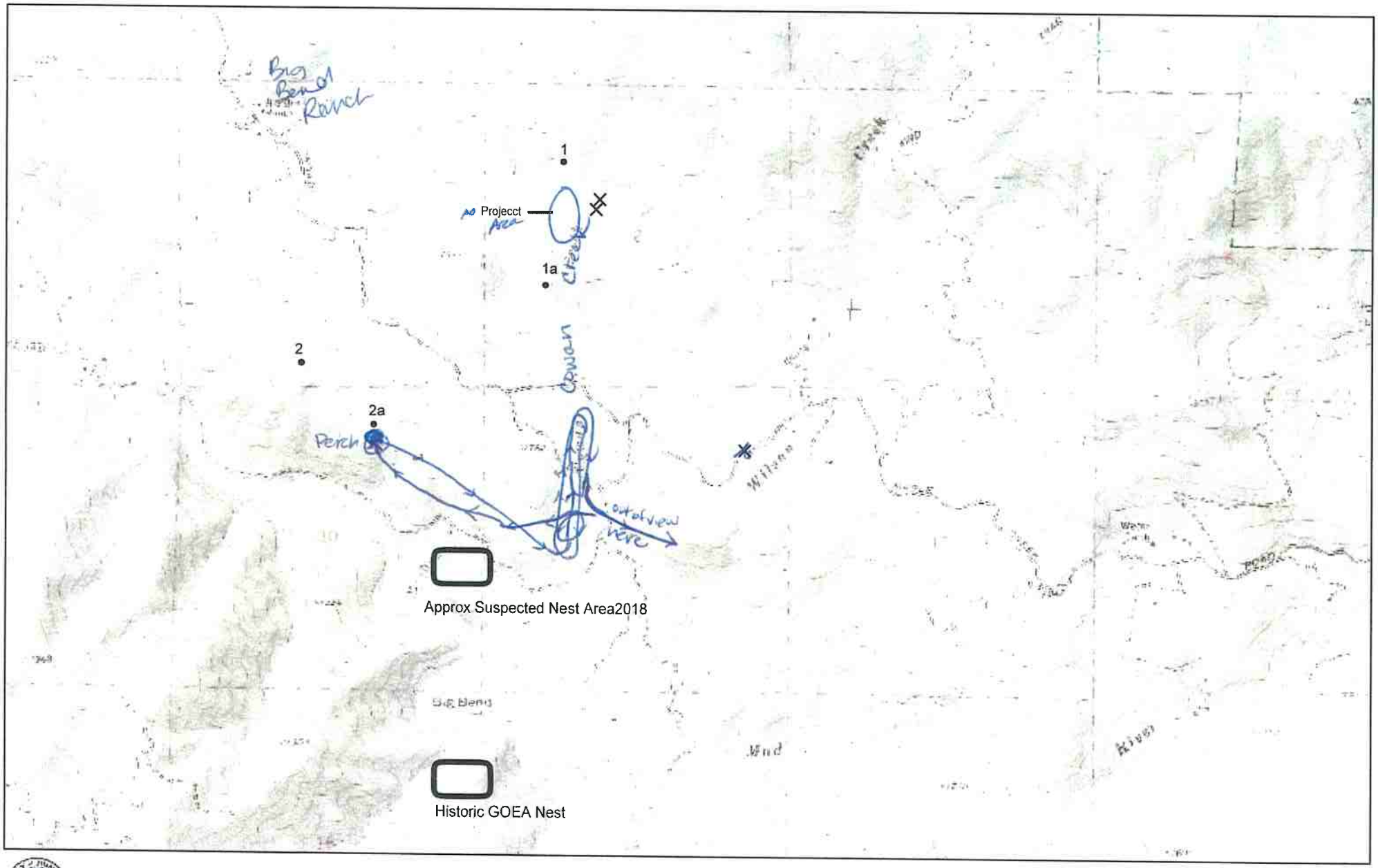




Golden Eagle heads easterly out of sight with American Crows not far behind (although no seen in this last picture) ~09:22



(Map is Page 4 of 4)



2019 Golden Eagle Survey

St. 2/2a 04/17/19 S. Hunt von Arb

Pg 4 of 4

Humboldt County Planning and Building Department

Printed: October 14, 2019 Web AppBuilder 2.0 for ArcGIS

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.

Golden Eagle Station

Existing Building

Golden Eagle flight Path.

0 1,400 2,800 5,600 Feet
0 0.25 0.5 1 Miles

RF = 1:36,112 1 in = 3,009 ft

Sources: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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Golden Eagle Survey Form

Location, Time and Weather Data

Project Name: AMT			**Site Name:** Big Bend					**County:** HUM	
Type of Visit:			Project Survey- Station 1/1a					**Date:** 04/17/19	
THP		Nest	Other (explain)					MM/DD/YY	
Surveyor(s): S. Hunt-von Arb					**Pages:** 3				
Time (24 hr)	**Start:** 12:07 (10:55)		**Finish:** 16:39		**Elapsed Time** (minutes): 272				
Precipitation	x					**Wind**	x			
	None	mist/fog	drizzle	light rain	rained out		calm	breeze	moderate	blown out

Notes and Comments (describe survey conditions and note any raptors observed, all GOEA detections must be accompanied by a map.)
I started with an unofficial traveling survey (continuing from the earlier morning) once I entered through the access gate at 10:55. I flushed a Red-tailed Hawk just past the gate and it flew downslope. I continued along the ranch road and stopped at Point 1a which has a wide view and can see a significant portion of the valley; including the air space above the Big Bend Golden Eagle historic and 2018 nest activity areas. I then went to the area with the existing buildings where Mr. Orahoske, California Department of Fish and Wildlife Biologist, notified me there was a potential Red-tailed Hawk nest they had observed during a site visit in 2018. I searched the area and only found one stick nest in the vicinity of Mr. Orahoske's description. A stick nest in an oak tree was located just east and above the buildings (~150m). The nest was dilapidated and falling apart and appeared to be more consistent with a Common Crow or American Raven nest and seemed too large for a typical squirrel nest. I searched below the nest, but saw no evidence of use and you could see sticks had fallen down. See pictures on Pg. 2. The nest is viewable from the main ranch road that leads to the buildings at this time of year but is likely hidden by foliage in the summer. It is evident that this nest is not being maintained by bird nor mammal at this time. There is no way to know for sure if this is the nest Mr. Orahoske spoke of, but it is the only nest I found in the vicinity. I then headed to Station 1 to begin the official Golden Eagle survey. Begin Survey at 12:07

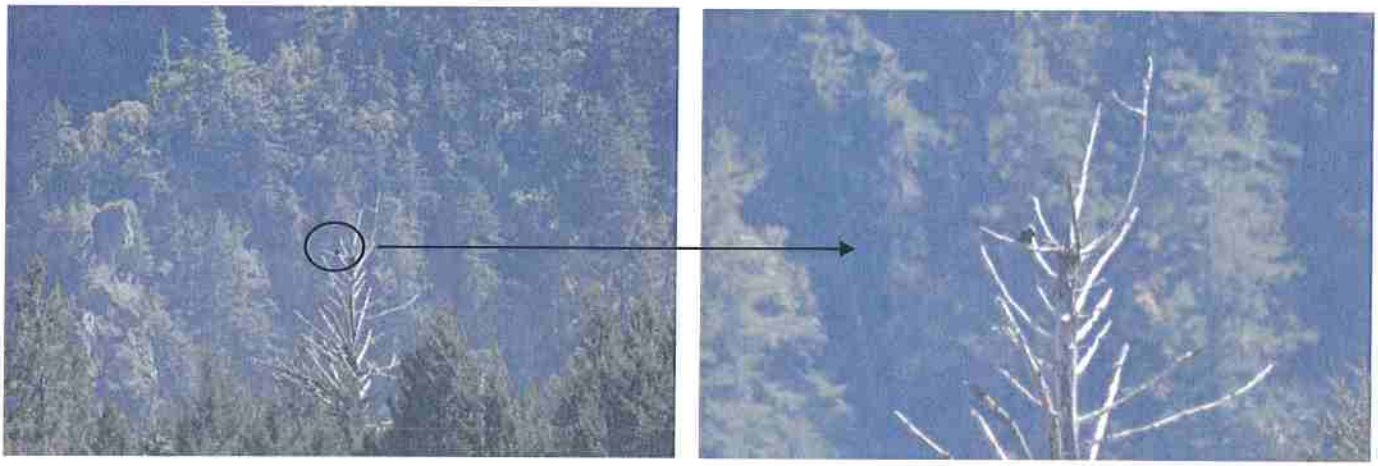
12:07-	-Common Ravens began calling from Oak trees just east of the station as soon as I arrived (I did hear them earlier when I was searching the trees north and northeast of the buildings for the raptor nest, but they were not this agitated then.)
12:17	-Common Ravens continue to be agitated, calling and continually doing fly-by's over me, this is not conducive to surveying for raptors- consider moving to Point 1a for remainder of survey if behavior continues.
12:25	- Moved to point 1a. The Common Ravens calmed down quickly after I left.
13:39-Red-tailed Hawk	-Flying west to east; perches in oak tree approx. 300m below me.
13:41-	-Common Raven fly high above Red-tailed hawk calling and then head westerly.
13:43-Red-tailed Hawk	-Takes off from perch and flies southerly and then to the west out of sight.
14:24-Red-tailed Hawk	-Red-tailed Hawk circling below near Wilderness Ranch Gate (entrance gate on Maple Creek Road). Eventually flies southerly and to the south side of Mad River out of sight
15:49- Golden Eagle	-See a large raptor flying on the south side of Mad River (>1mile) near the Cowan Creek-Mad River Confluence with my binoculars- too far to identify at first, but immediately suspicious it was an eagle. I got my scope "on it" and verified it was a Golden Eagle. I followed its flight- after making a few large circles, it flew up the Cowan Creek drainage and the veered to the large snag below and SE of the Wilderness Ranch Gate. It perched there at 15:52 facing northerly, looked around, turned around and looked back and forth SW-S-SE-S-SW for about a minute and then flew off back to the south parallel but east of Cowan Creek and then headed easterly once it was above the Mad River and lost it among the trees. Last observed at 15:54.
1639-	-End Survey, no raptor detection after 15:54.

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Golden Eagle Survey Form

Big Bend Survey St. 1/1a
04/17/19 Page 2 of 3

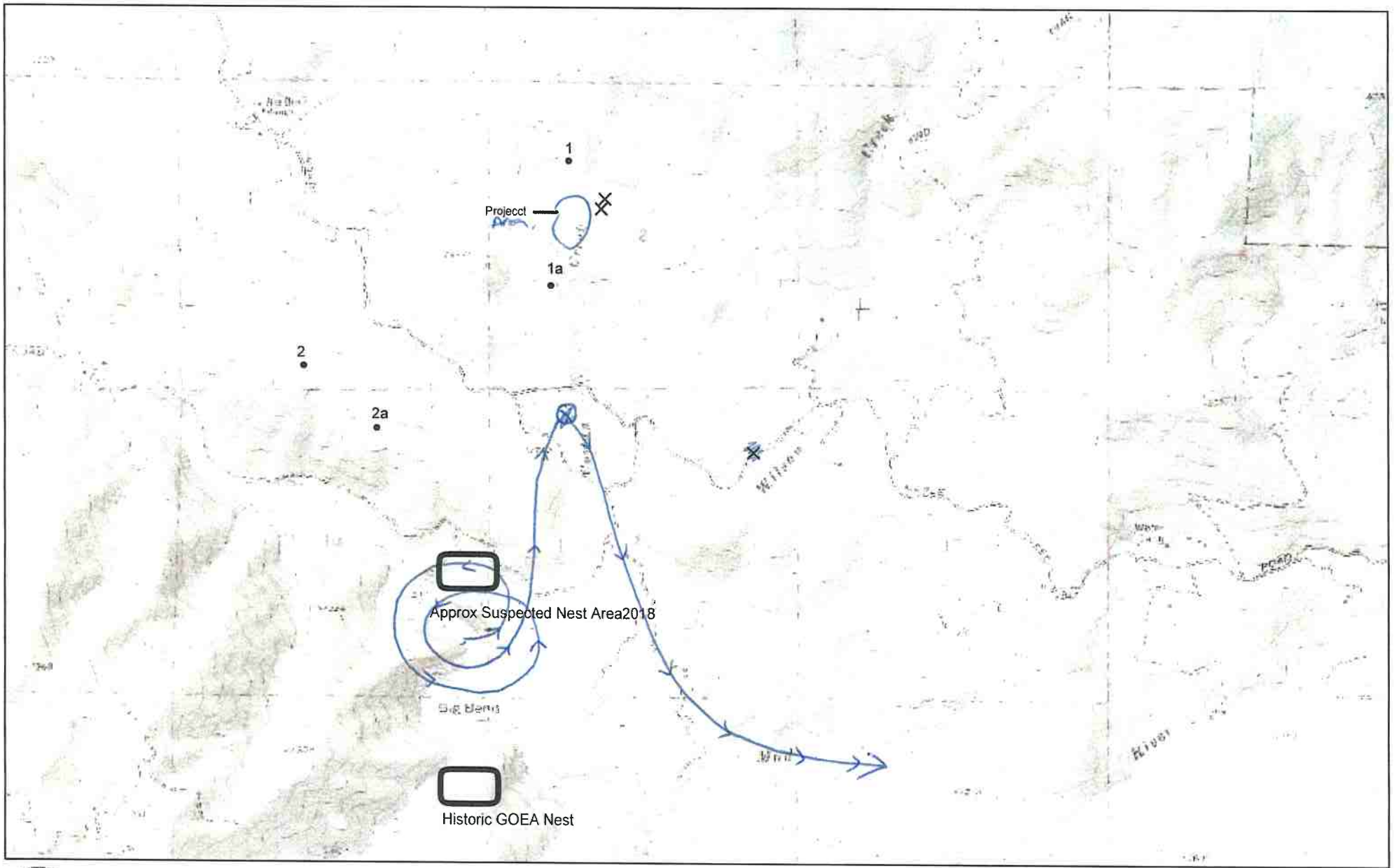
Golden Eagle on Prominent Snag Perch near Wilderness Ranch Gate below Maple Creek Road. This perch stands out and is visible from Maple Creek Road as well as from Stations 1a, 2, and 2a. It is typical in location, prominence, size, and type to well used Golden Eagle perches. These typically have a 360degree view and the eagle is likely to not only see it's core area and nearby foraging areas, but also the nest itself (I cannot verify it can see its nest from there, but based on previous experience it is likely).



Inactive stick nest discussed on Page 1



(Map is Page 3 of 3)



2019 Golden Eagle Survey

St 1/1A 04/17/19 S-that von Ark

Humboldt County Planning and Building Department

Printed: October 14, 2019 Web AppBuilder 2.0 for ArcGIS

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.

Golden Eagle Station

Existing Building

? golden Eagle flight path

0 1,400 2,800 5,600 Feet
0 0.25 0.5 1 Miles
RF= 1:36,112 1 in = 3,009 ft

N W E S

Sources: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Phone: (707) 822-5785 Email: arcata@shn-engr.com Web: shn-engr.com
1062 G Street, Ste. I, Arcata, CA 95521-5800

Technical Memorandum

Reference: 016178.500
Date: 11/19/19
To: Greg Williston
Copy to: Laura Borusas
From: Gretchen O'Brien
Subject: Golden Eagle Habitat in Maple Creek, CA

The purpose of this memorandum is to report on Golden Eagle (*Aquila chrysaetos*) habitat mapped by the California Department of Fish & Wildlife (CDFW) and documented habitat use by this species as described by the U.S. Forest Service:

In the mountainous West, golden eagles often move down from the mountains onto the plains and valleys during the winter (DeGraaf et al., 1991). Breeding golden eagles prefer to maintain their nesting-hunting territories or travel the shortest distance necessary to survive prolonged cold or heat, while older prebreeders may be less tied to specific locations. (Palmer, 1988). The golden eagle generally forages in open habitats where rabbits and small rodents are available. During the nesting season the golden eagle usually forages within 4.4 miles (7 km) of the nest (Cooperrider et al., 1986).

The attached maps, sources from the CDFW California Natural Diversity database, show the habitat availability for golden eagles with greater quality habitats to the south of Maple Creek Road and extensive available habitat within a 10-mile radius of the historical known territory of golden eagles.

Considering the conclusions made by Pacific Northwestern Biological Resources Consultants, Inc. in the golden eagles 2019 survey update dated October 17, 2019, along with the available habitat outside the AMT project area, the proposed project is not likely to significantly affect the golden eagle's continued existence.

References:

DeGraaf, Richard M.; Scott, Virgil E.; Hamre, R. H.; [and others]. (1991). Forest and rangeland birds of the United States: Natural history and habitat use. Agric. Handbook. 688. Washington, DC: U.S. Department of Agriculture, Forest Service. 625 p. [15856].

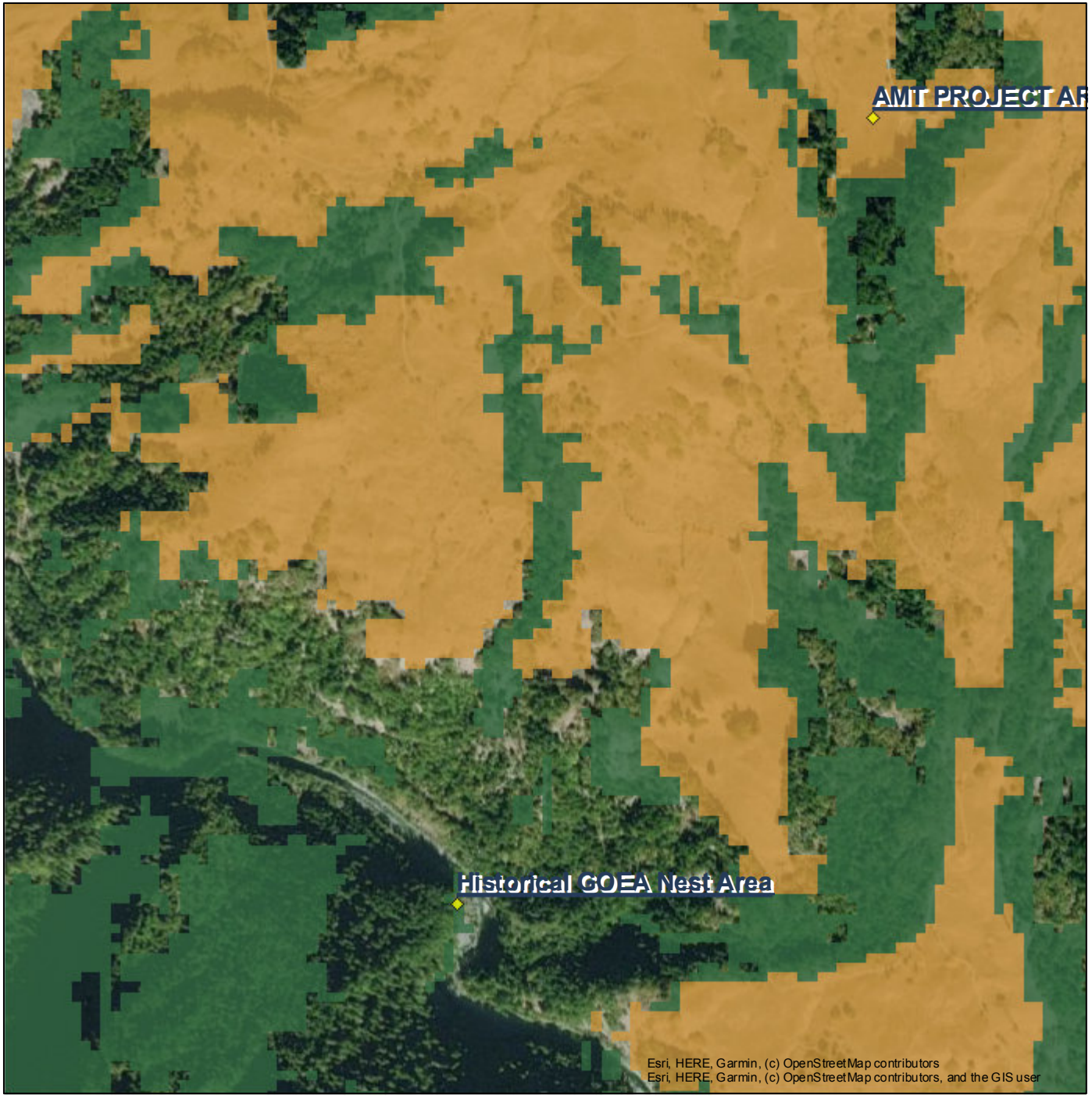
Palmer, Ralph S., editor. (1988). Handbook of North American birds. Volume 5. New Haven, CT: Yale University Press. 463 p. [22303].

Cooperrider, Allen Y.; Boyd, Raymond J.; Stuart, Hanson R., eds. (1986). Inventory and monitoring of wildlife habitat. Denver, CO: U.S. Department of the Interior, Bureau of Land Management, Service Center. 858 p. [3441].

Golden Eagle Habitat. Historical nest territory approx. 1.3 miles SW of AMT.

Golden Eagle Predicted Habitat - CWHR B126 [ds2096]

- Low
- Medium
- High



N

1:18,056

0 0.15 0.3 0.6 mi

0 0.25 0.5 1 km

November 19, 2019

Author: gobrien@shn-engr.com

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Golden Eagle Habitat within 10 miles radius of historical territory.

Golden Eagle Predicted Habitat - CWHR B126 [ds2096]

- Low
- Medium
- High



N

1:288,895

0 2.5 5 10 mi

0 4 8 16 km

November 19, 2019

Author: gobrien@shn-engr.com

Printed from http://bios.dfg.ca.gov

Golden Eagle Survey Report
Adesa Organic, LLC

Korbel, California








Prepared for:

Laura Borusas

May 2020
016178.600

Reference: 016178.600

Golden Eagle Survey Report

Adesa Organic, LLC

Korbel, California

Prepared for:
Laura Borusas

Prepared by:

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

May 2020

QA/QC:GAO

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1. Project Location and Survey Stations 1

Abbreviations and Acronyms

ACOE	Army Corps of Engineers
APN	Assessor's Parcel Number
BIOS	Biogeographical Information and Observation System
CCLUO	Commercial Cannabis Land Use Ordinance
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CMMLUO	Commercial Medical Marijuana Land Use Ordinance
CNDDB	California National Diversity Database
CWA	Clean Water Act
FESA	Federal Endangered Species Act
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
PNWB	Pacific Northwestern Biological Resources Consultants, Inc.
SSC	Species of Special Concern
U.S.	United States
USC	United States Code
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

1.0 Introduction

SHN has conducted Golden Eagle (*Aquila chrysaetos*) protocol surveys in relation to a proposed Adesa Organic, LLC project in the vicinity of Maple Creek (Application Number 10516, Case Number ZCC-16-009), herein referred to as "project site". A historical Golden Eagle territory is known to the south of the project site, at a distance of approximately 1.6 miles on the south side of the Mad River. This territory was surveyed for current nesting location and status information in 2020.

1.1 Project Location

The project site is located in the Mad River Buttes 7.5-minute United States Geological Survey (USGS), Quadrangle in an unincorporated area of Humboldt County, California (Figure 1). The project occurs in Sections 34 and 35 of Township 04 North, Range 03 East; and Sections 02 and 03 in Township 03 North, Range 03 East on Assessor's Parcel Numbers (APNs) 315-211-003 & -004. The site is approximately 6.5 air miles southeast of the community of Maple Creek and centered at latitude and longitude 40.671335, -123.808751 respectively.

1.2 Site Description

The proposed project site is located on land that has primarily been used for cattle grazing. The surrounding landscape is largely composed of grasslands with inclusions of wooded riparian areas, oak woodlands, and coniferous forest. The known historical Golden Eagle nest site is within mature coniferous forest on steep north-facing slopes on the south side of the Mad River (Appendix 1).

2.0 Methods

2.1 Literature and Data Review

This assessment includes a review of Golden Eagle survey data and foraging habitat within the vicinity of the project site.

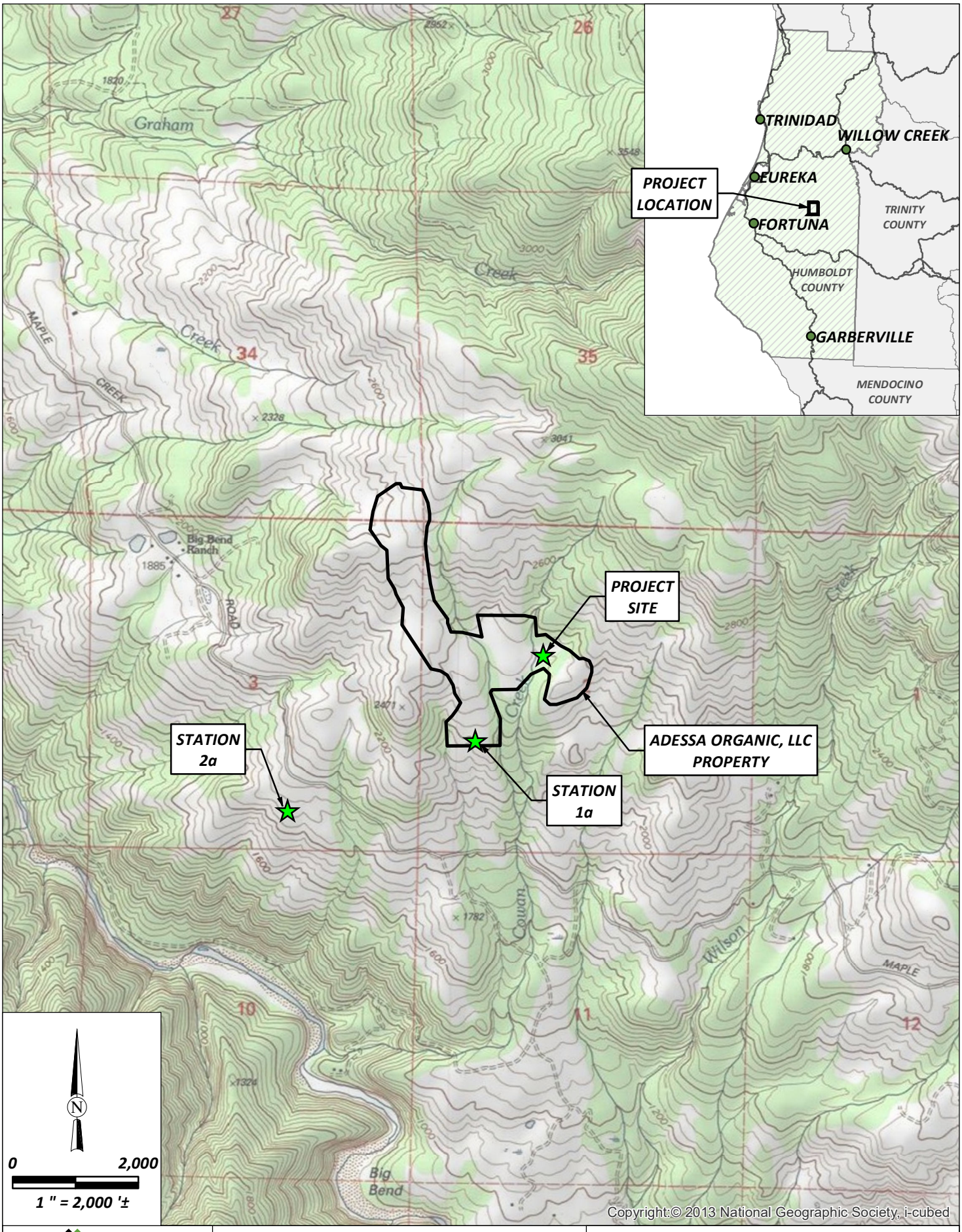
Resources for this assessment included:

- Documented historical Golden Eagle nest location by California Department of Fish & Wildlife (CDFW) California Natural Diversity Database (CNDDB; Appendix 1).
- Interim Golden Eagle Inventory and Monitoring Protocols; and Other Recommendations (United States Fish and Wildlife [USFWS], 2010).
- Pacific Northwestern Biological Resources Consultants, Inc. Golden Eagle 2019 survey update (PNWB, 2019).

2.2 Survey Methods

The 2020 breeding season surveys were conducted as per Interim Golden Eagle Inventory and Monitoring Protocols; and Other Recommendations (USFWS, 2010). Survey stations established in 2019 by PNWB were used for consistency (Figure 1). These stations were placed for the best available access to a view of the historical nest site and to monitor any Golden Eagle activity that may have occurred near the Adesa Organic, LLC project site.

Four-hour observation surveys were conducted at Station 2a on March 2 and April 13, 2020. This survey station had a wide view of the landscape surrounding the historically-documented Golden Eagle nest site (Appendix 1). A four-hour observation survey was conducted at Station 1a on May 15, 2020 as a supplemental survey closer to the project site.



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SHN	Adessa Organic, LLC Golden Eagle Survey Report Korbel, Humboldt County, California	Project Location and Survey Station Map SHN 016178.600
	May 2020 | GESR_Fig1_ProjectLocAndSurveyStations	Figure 1

3.0 Regulatory Setting

Regulatory authority over biological resources is shared by federal, State, and local authorities under a variety of legislative acts. This section provides a listing and overview of these federal and State laws that pertain to raptors and raptor habitat protection.

3.1 Federal Laws

3.1.1 Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (16 United States Code [USC] Sections 661-667e, March 10, 1994, as amended 1946, 1958, 1978, and 1995; USFWS, 1934) requires that whenever waters or 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 National Marine Fisheries Service (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), with a view to 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.

If direct permanent impacts occur to waters of the United States (U.S.) from a proposed project, then a permit from Army Corps of Engineers (ACOE) under Clean Water Act (CWA) Section 404 is required for the construction of the proposed project. ACOE is required to consult with USFWS and/or NMFS as appropriate regarding potential impacts to federally-listed species under Federal Endangered Species Act (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.

3.1.2 Federal Endangered Species Act

The United States Congress passed the FESA in 1973 to protect species that are endangered or threatened with extinction. 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 U.S.C. 1531, 50 Code of Federal Regulations [CFR] 17.3; USFWS, 1973). 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.

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.

3.1.3 Bald and Golden Eagle Protection Act

The bald eagle will continue to be protected by the Bald and Golden Eagle Protection Act even though it has been delisted under the Endangered Species Act. This law, originally passed in 1940, provides for the protection of the Bald Eagle and the Golden Eagle (as amended in 1962) by prohibiting the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of any Bald or Golden Eagle, alive or dead, including any part, nest, or egg, unless allowed by permit (16 U.S.C. 668(a); 50 CFR 22). "Take" includes pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, and molest or disturb (16 U.S.C. 668c; 50 CFR 22.3). The 1972 amendments increased civil penalties for violating provisions of the Act to a maximum fine of $5,000 or one year imprisonment with a $10,000 fine, or not more than two years in prison for a second conviction. Felony convictions carry a maximum fine of $250,000 or two years of imprisonment. The fine doubles for an organization. Rewards are provided for information leading to arrest and conviction for violation of the Act.

3.2 State Laws

3.2.1 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.

3.2.2 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.

3.3.3 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.

Species of Special Concern (SSCs) 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.

3.3 Other Statutes, Codes, and Policies Affording Limited Species Protection

3.3.1 County of Humboldt Commercial Medical Marijuana Land Use Ordinance (CMMLUO)

On September 13, 2016, the Humboldt County Board of Supervisors adopted Ordinance Number 2559, amending provisions of Title III of the Humboldt County code relating to the commercial cultivation, processing, manufacturing, distribution, testing, and sale of cannabis for medicinal or adult use for the areas outside the coastal zone (County of Humboldt, 2016). The ordinance established land use regulations concerning commercial cultivation, processing, manufacturing, and distribution of cannabis for medical use within the County of Humboldt in order to limit and control such cannabis activities in coordination with the State of California. Section 55.4.11 of the Ordinance outlines specific Performance Standards for all CMMLUO Cultivation and Processing Operations and includes standards for the protection of natural resources.

4.0 Results

March 2, 2020. 12:00 p.m. to 4:00 p.m. Station 2a (Figure 1). Clear, 52° F, Wind B.S. 3.
Observer: Gretchen O'Brien

During the March 2, 2020 survey, the historical nest site location and surrounding landscape was scanned continuously for Golden Eagles. No actual nest structure was visible.

12:31 p.m. two adult Golden Eagles were observed entering and exiting the same location on the hillside that has also been identified as the area of a historical nest location (Appendix 1).
1:02 p.m. two adult Golden Eagles observed soaring over the Mad River near the historical nest area, one enters the trees on the hillside (Appendix 2).
1:05 p.m. adult Golden Eagle drops out of the trees on the hillside and flies east up the river.
1:19 p.m. adult Golden Eagle flies low over the prairie along the north side of the river, circling to gain height, then diving back down.
1:33 p.m. adult Golden Eagle enters the trees on the hillside again in the same location as before and comes back out again at 1:54 p.m.

2:46 p.m. adult Golden Eagle soaring above the river near the historical nest location then down low over the prairie.
3:36 p.m. adult Golden Eagle soaring above the river near the historical nest location.
3:43 p.m. adult Golden Eagle visits the same area on the cliffside and emerges again about one minute later.

The pair of Golden Eagles were seen repeatedly throughout the survey centering their activity around the historical nest location. These birds were regularly using the open prairie habitat along the Mad River near the Big Bend and flying up the river corridor and over the hillside on the south side of the Mad River as well (Appendix 2). They remained south of Maple Creek Road along or east of Cowan Creek during this four-hour survey effort. There were no signs of juvenile Golden Eagles observed or heard.

Other avian species seen or heard during the survey included Turkey Vulture and American Kestrel.

April 13, 2020. 12:15 p.m. to 4:15 p.m. Station 2a (Figure 1). Clear, 60° F, Wind B.S. 2.
Observer: Gretchen O'Brien

During the April 13, 2020 survey, the historical nest site location and surrounding landscape was scanned continuously for Golden Eagles. No actual nest structure was visible.

12:43 p.m. an adult Golden Eagle was observed soaring in the airspace above the historical nest site location then flew low along the open prairie habitat along the Mad River near the Big Bend (Appendix 3).
2:25 p.m. a red-tailed hawk was soaring high, just north of Maple Creek Road and another bird was soaring higher, potentially a Golden Eagle. Eagle calls were heard faintly at the time of the visual observation, though auditory direction was difficult to determine due to wind.
No other Golden Eagle observations were made during this 4-hour survey effort.

Other avian species seen or heard during the survey included Red-tailed Hawk, Sharp-shinned Hawk, Turkey Vulture, American Crow, California Quail, American Goldfinch, American Pipit, and Common Raven.

May 15, 2020. 11:28 a.m. to 3:28 p.m. Station 1a (Figure 1). Clear, 52° F, Wind B.S. 1/2.
Observer: Gretchen O'Brien

During the May 15, 2020 survey, the historical nest site area and surrounding airspace was distantly visible and scanned continuously for Golden Eagles.

12:14 p.m. distant Red-tailed Hawk calls were heard to the east.
12:25 p.m. a pair of Red-tailed Hawks were observed circling over the Mad River below the survey station, then flew east, upriver.
1:07 p.m. a Turkey Vulture was observed soaring over to the north.
1:14 p.m. a Sharp-shinned Hawk flew nearby towards the east.
1:54 p.m. a pair of Red-tailed Hawks were observed soaring overhead.
2:09 p.m. two Golden Eagles (unknown age) were observed soaring above the ridge near the historical nest site location, then seemed to fly south over the other side of the ridge (Appendix 4).
2:42 p.m. an adult Bald Eagle was observed soaring over the Mad River to the west, circling and gaining altitude.
3:04 p.m. Two Turkey Vultures were observed soaring overhead.

Cloud cover increased toward the end of the survey, moving slowly in from the west. Several songbirds were heard or seen during the survey including Western Meadowlark, Lazuli Bunting, Western Tanager, California Quail, Pacific-slope Flycatcher, Western Bluebird, Barn Swallow, and others.

5.0 Conclusions

Breeding Golden Eagles prefer to maintain their nesting-hunting territories or travel the shortest distance necessary to survive prolonged cold or heat, while older prebreeders may be less tied to specific locations. (Palmer, 1988). The Golden Eagle generally forages in open habitats where rabbits and small rodents are available. During the nesting season, the Golden Eagle usually forages within 4.4 miles (7 km) of the nest (Cooperrider et al., 1986).

Most of the Golden Eagle activity observed during the 2020 protocol surveys at the Big Bend Golden Eagle territory were concentrated around the historical nest site location originally documented at latitude and longitude 40.64311, -123.81666 respectively in 2002 (Appendix 1). Flight patterns of the possible Golden Eagle observed soaring north of Maple Creek Road on April 13 were not indicative of foraging behavior due to its elevation at the time.

The survey closer to the project area on May 15 resulted in a single observation of Golden Eagles in the vicinity of the historical nest site location, and seemed to fly over the ridge to the south, where there is foraging habitat available.

No direct evidence of active nesting behavior was observed other than frequent visits to the same location in the vicinity of the historical nest site; therefore, according to this survey effort, 2020 nesting status is unknown for the Big Bend pair of Golden Eagles. However, if this pair were nesting, due to the distance of the suspected nest site to project site (1.6 miles), and the USFWS recommended one-mile disturbance buffer for project-related activities, it is unlikely that the Adesa Organic, LLC project will have an adverse impact on this pair of Golden Eagles.

6.0 Recommendations

To minimize disturbance to Golden Eagles and other raptors in the vicinity of the Adesa Organic, LLC project site, SHN suggests the following recommendations:

- Conduct noise-inducing construction activities outside the raptor nesting season (typically January 1 to August 31).
- Conduct at least one season of post-project protocol Golden Eagle surveys to monitor the known Big Bend territory.

7.0 References

California Department of Fish and Wlidlife. (1998). Fish and Game Code. Sacramento, CA:CDFW.

California Natural Resources Agency. (1970). *California Environmental Quality Act*. CCR: Title 14, Div. 6, Chap. 3, Appendix G; Sections 15125(c) and 15380(d).

Cooperrider, Allen Y.; Boyd, Raymond J.; Stuart, Hanson R., eds. (1986). Inventory and monitoring of wildlife habitat. Denver, CO: U.S Department of the Interior, Bureau of Land Management, Service Center. 858 p. [3441]

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U.S. Fish and Wildlife Service. (1934). The Fish and Wildlife Coordination Act (16 USC Sections 661-667e, March 10, 1994, as amended 1946, 1958, 1978, and 1995). Washington, D.C.

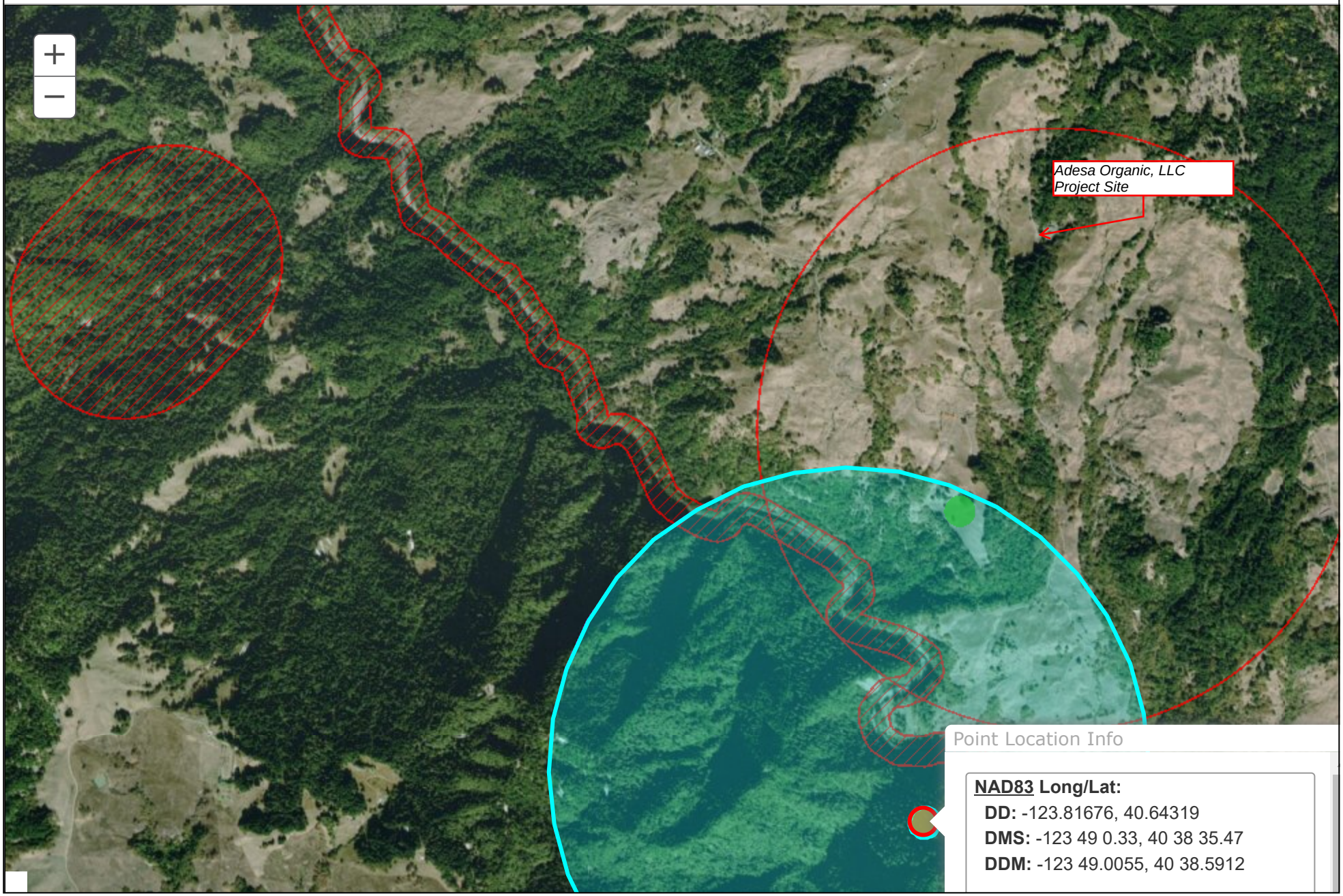
---. (1973). Endangered Species Act. 16 USC 1532, 16 U.S.C. 1536, 50 CFR 17.3. Washington, D.C.

---. (2010). Pagel, J.E., Whittington, D.M., and Allen, G.T. Interim Golden Eagle Inventory and Monitoring Protocols; and Other Recommendations. USFWS. February 2010.

Golden Eagle Historical Nest Location 1

CALIFORNIA DEPARTMENT OF FISH and WILDLIFE BIOS

Hello, cnddb_com@dfg.ca.gov Log off



Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Species IS (Aquila chrysaetos)
 AND County IS (Humboldt)

Map Index Number: 49818
EO Index: 49818
Key Quad: Mad River Buttes (4012367)
Element Code: ABNKC22010
Occurrence Number: 81
Occurrence Last Updated: 2003-01-08

Scientific Name: *Aquila chrysaetos*
Common Name: golden eagle

Listing Status: **Federal:** None
State: None

CNDDB Element Ranks: **Global:** G5
State: S3

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
CDF_S-Sensitive
CDFW_FP-Fully Protected
CDFW_WL-Watch List
IUCN_LC-Least Concern
USFWS_BCC-Birds of Conservation Concern

General Habitat:

ROLLING FOOTHILLS, MOUNTAIN AREAS, SAGE-JUNIPER FLATS, AND DESERT.

Micro Habitat:

CLIFF-WALLED CANYONS PROVIDE NESTING HABITAT IN MOST PARTS OF RANGE; ALSO, LARGE TREES IN OPEN AREAS.

Last Date Observed: 2002-06-12
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2002-06-12
Occurrence Rank: Excellent
Owner/Manager: BLM
Trend: Unknown
Presence: Presumed Extant

Location:

SOUTH OF BIG BEND, MAD RIVER.

Detailed Location:

NEST IS LOCATED 92' HIGH IN THE NEST TREE AND PLACED IN A CROTCH AGAINST THE BOLE; NEST IS LARGE (4' X 4'), BUT DIFFICULT TO SEE DUE TO PLACEMENT IN THE TREE.

Ecological:

NEST TREE IS A DOUGLAS-FIR (60" DBH, 160' TALL), WITHIN OLD GROWTH DOUGLAS-FIR / TANOAK FOREST.

Threats:

General:

1 EAGLET WAS HEARD CALLING FROM THE NEST ON 12 JUN 2002.

PLSS: T03N, R03E, Sec. 15, NE (H)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-10 N4499460 E430948
Latitude/Longitude: 40.64311 / -123.81666
Elevation (feet): 1,600

County Summary:	Quad Summary:
Humboldt	Mad River Buttes (4012367)

Sources:

BRA02F0002 BRADLEY, L.C. (SCOTIA PACIFIC COMPANY) - FIELD SURVEY FORM FOR AQUILA CHRYSAETOS (NEST SITE) 2002-06-12

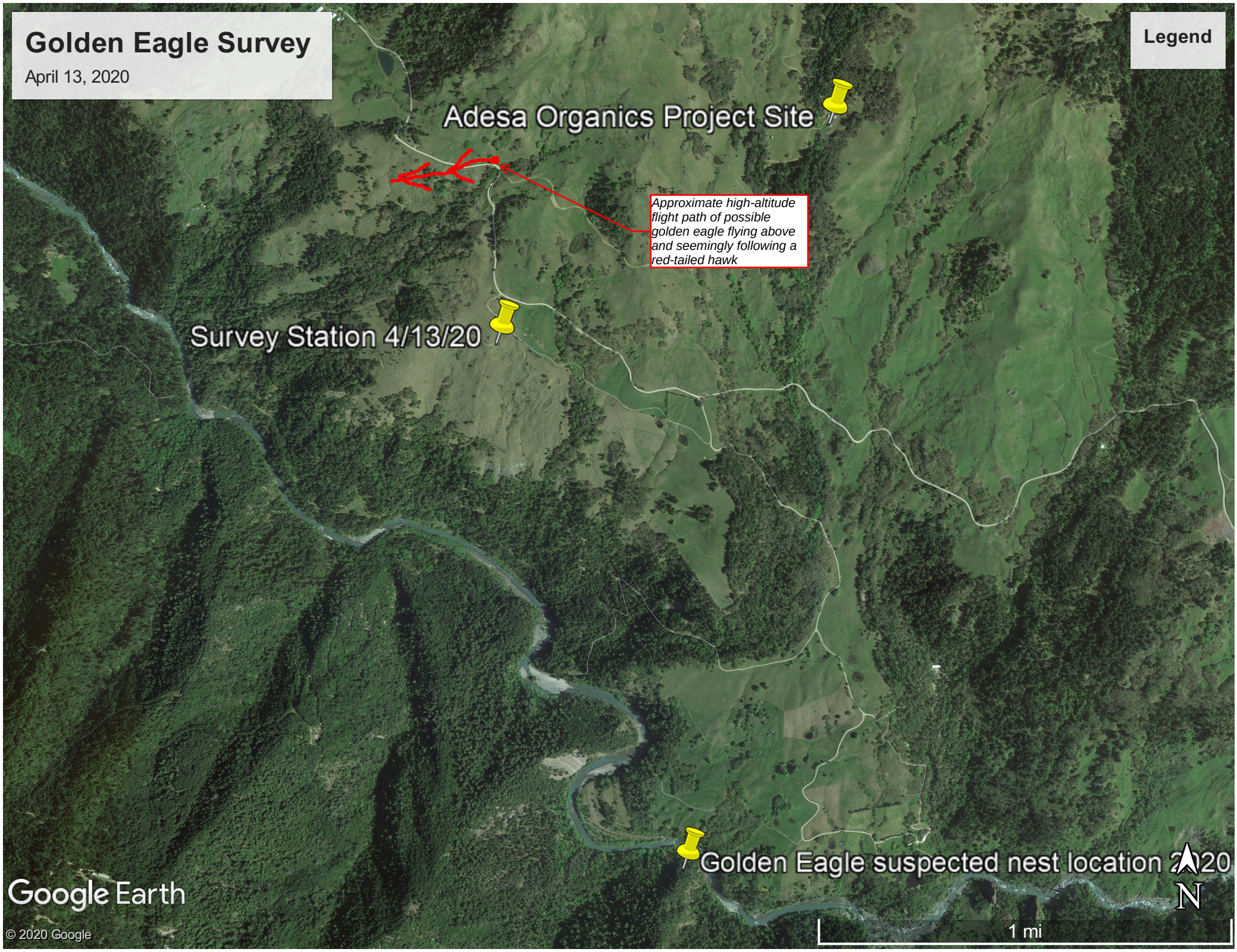
March 2, 2020 Survey Results Map

2


Golden Eagle Survey
March 2, 2020
Legend
Adesa Organics Project Site
Survey Station 3/2/20
Maple Creek Rd
2 adult GOEA typical flight pattern during 4-hr. Survey
Golden Eagle suspected nest location 2020
Google Earth
© 2020 Google
N
1 mi

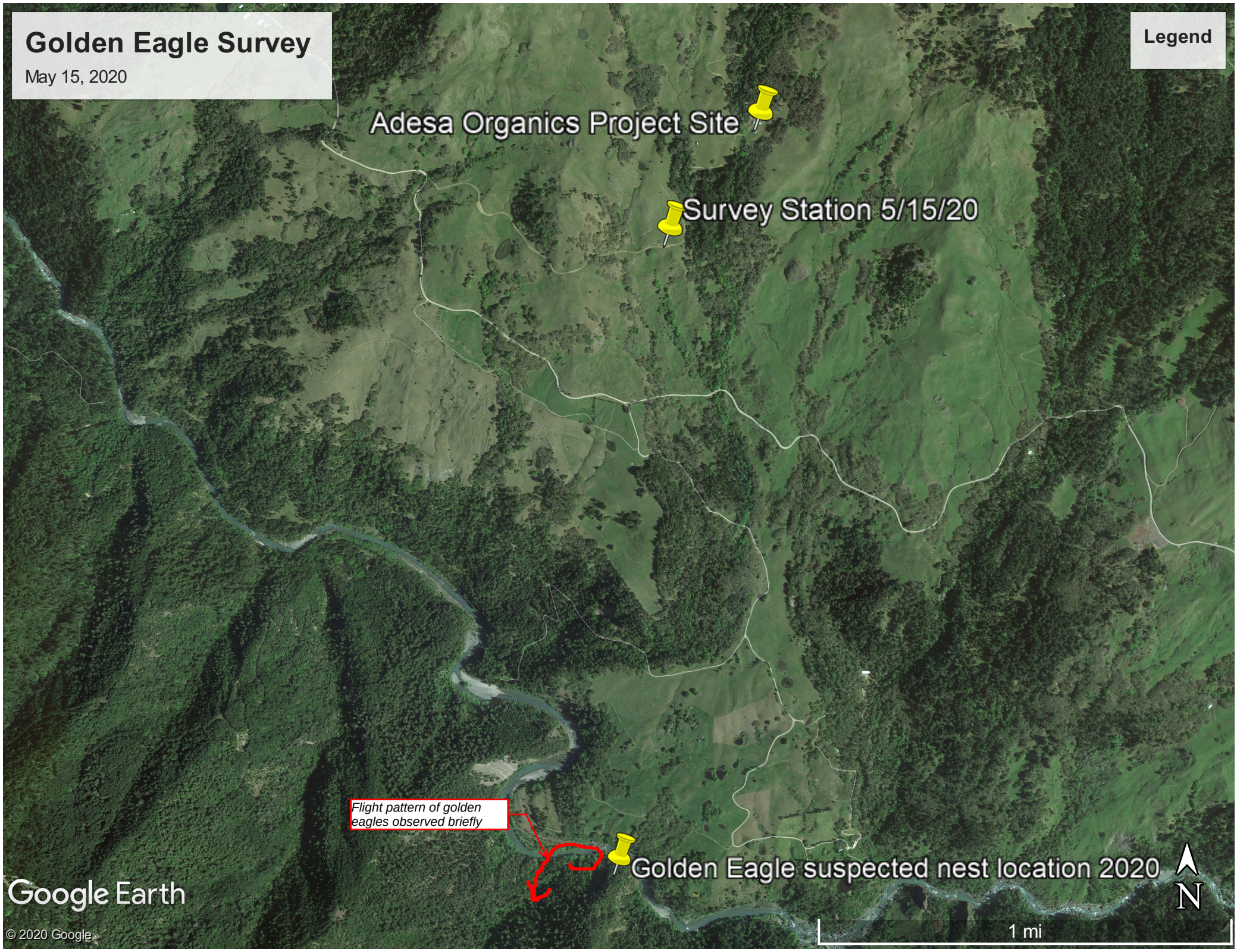
April 13, 2020 Survey Results Map

3


Golden Eagle Survey
April 13, 2020
Legend
Adesa Organics Project Site
Approximate high-altitude flight path of possible golden eagle flying above and seemingly following a red-tailed hawk
Survey Station 4/13/20
Golden Eagle suspected nest location 2020
Google Earth
© 2020 Google
N
1 mi

May 15, 2020 Survey Results Map

4


Golden Eagle Survey
May 15, 2020
Legend
Adesa Organics Project Site
Survey Station 5/15/20
Flight pattern of golden eagles observed briefly
Golden Eagle suspected nest location 2020
N
1 mi
Google Earth
© 2020 Google

Photographs

5



Photo 1. View of the historical Golden Eagle nest site location from Station 2a.



Photo 2. View of the historical Golden Eagle nest site location from Station 1a.



Eureka, CA | Arcata, CA | Redding, CA | Willits, CA | Coos Bay, OR | Klamath Falls, OR

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