COUNTY OF LAKE
COMMUNITY DEVELOPMENT DEPARTMENT
Planning Division
Courthouse - 255 N. Forbes Street
Lakeport, California 95453
Telephone 707/263-2221 FAX 707/263-2225

Dated: **June 15, 2020**

CALIFORNIA ENVIRONMENTAL QUALITY ACT ENVIRONMENTAL CHECKLIST FORM INITIAL STUDY IS 19-03

1. Project Title:	Mary Draper / Lucerne
2. Permit Number:	Major Use Permit, UP 19-01 Initial Study, IS 19-03
3. Lead Agency Name and Address:	County of Lake Community Development Department Courthouse – 255 North Forbes Street Lakeport CA 95453
4. Contact Person:	Eric Porter, Associate Planner (707) 263-2221
5. Project Location(s):	7004 and 7232 E. Highway 20, Lucerne APNs: 006-024-12 and 13; 006-005-62 and 63
6. Project Sponsor's Name/Address:	Mary Draper 3008 Cooley Court El Dorado Hills, CA 95762
7. General Plan Designation:	Rural Lands
8. Zoning:	**"**RL-SC"; Rural Lands – Scenic Combining
9. Supervisor District:	District Five (5)
10. Flood Zone:	X
11. Slope:	Mostly steep (>30%); however cultivation sites are mostly less than 10%
12. Fire Hazard Severity Zone:	SRA – High Fire Risk
13. Earthquake Fault Zone:	None
14. Dam Failure Inundation Area:	Not located within Dam Failure Inundation Area
15. Parcel Sizes:	±275 acres

16. Description of Project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary).

The applicant, Mary Draper, is requesting approval of four (4) A-Type 3: "medium outdoor" licenses. Each of the four licenses will allow up to 65,000 s.f. of cultivation area per license on the subject site.

The applicant is proposing (3) 60,000 s.f. cultivation areas, and (1) 47,825 s.f. cultivation area; these areas are identified by the applicant as 'Fields 1 through 4'. Field 3 would require the removal of 18 mature oak trees; this is discussed at greater length later in this document. These four 'fields' will be outdoor cultivation projects. Total proposed cultivation area is 227,825 square feet. The four cultivation sites are located on terrain that is generally flat excluding the interior access road. The cultivation sites are surrounded by trees and are not visible from the highway.

There are two existing 1,300 s.f. barns on the site that will be used for drying plants, and several small sheds for use as chemical and data storage for the security system. The four cultivation areas will be enclosed within a 6' tall metal fence.

The applicant was approved for early activation on April 2, 2020; this is a temporary permit that allows cultivation activity while the use permit is under review at the County. This permit would be revoked if this use permit were to be denied.

- Trips per day estimated at 4 to 12 Average Daily Trips (ADT)
- No greenhouses are proposed
- Chemicals, fuel and fertilizer to be stored in an on-site shed
- On-grid power is proposed
- Manufactured home on site to house caretaker.
- Site is on well and septic system
- Vegetative waste to be chipped and spread on site

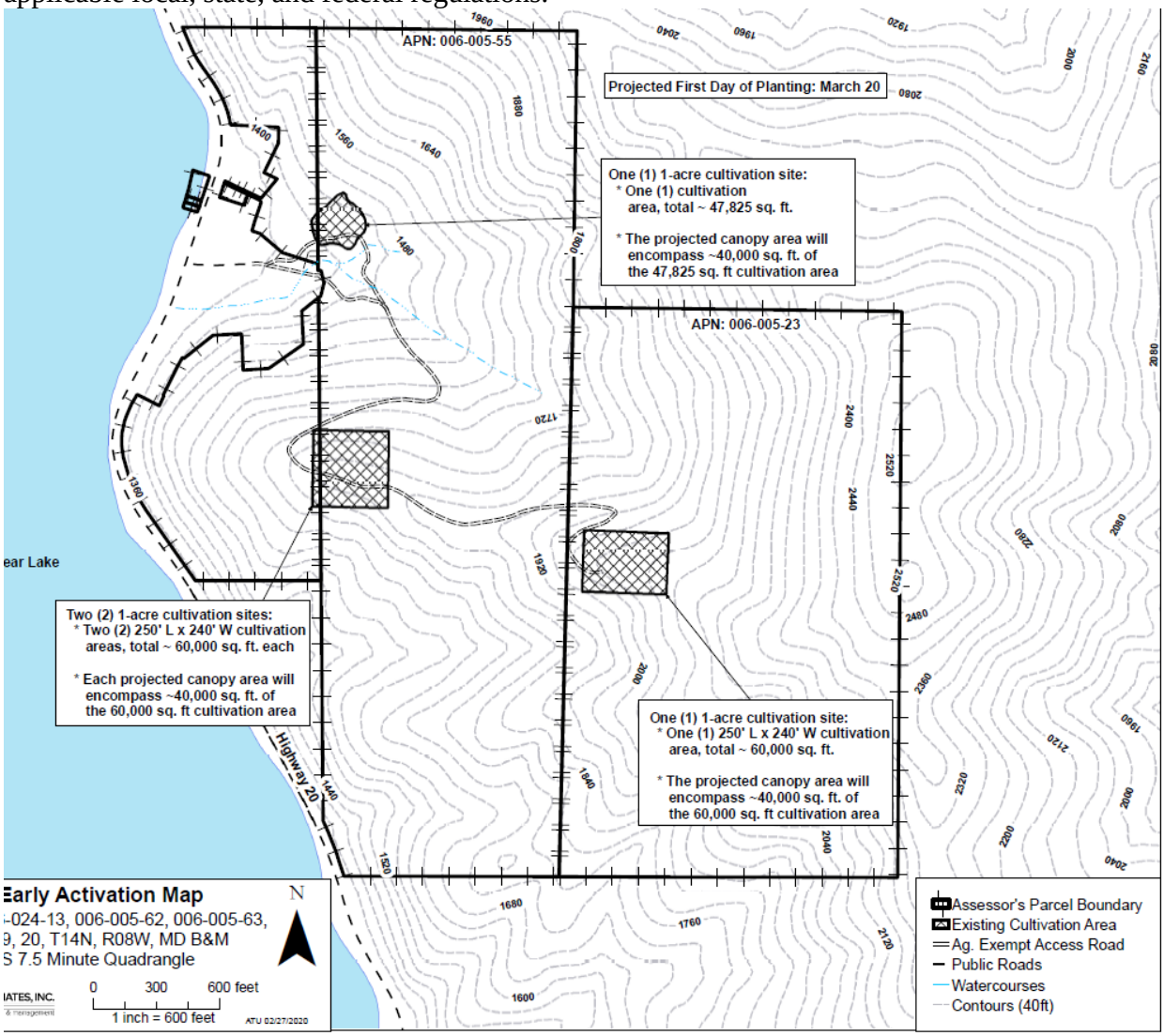
CONSTRUCTION

According to the applicant, the following is in regards to the site preparation and construction:

- Ground disturbance and structure construction activities will take place over a one month period.
- Materials and equipment will only be staged on previously disturbed areas (the site had been previously used for crop production).
- Construction will occur Monday through Friday from the hours of 8:00 AM to 6:00 PM
- Water from the existing onsite well will be used to mitigate the generation of dust during construction.

All equipment will be maintained and operated to minimize spillage or leakage of hazardous materials. All equipment will be refueled in locations more than 100 feet from surface water bodies. Servicing of equipment will occur on an impermeable surface. In an event of a spill or

leak, the contaminated soil will be stored, transported, and disposed of consistent with applicable local, state, and federal regulations.



Post – Construction

- Fertilizer will be packed in five-gallon, resealable containers. The containers are then stored in a secondary storage container located in a locked storage shed adjacent to the canopy site.
- When containers are emptied, they are returned to the seller and refilled. Product is entirely organic, and only enough product will be kept on site for ongoing cultivation purposes.
- The remaining containers are returned to the supplier. There are no other "chemicals" stored on site. There will be no use of chemical pesticides, rodenticides, or herbicides.
- Vegetative waste will be chipped and spread within the cultivation areas. Other waste material will be bagged and sold to Biomass Engineers.
- Solid waste will be transported to the solid waste landfill in Clearlake, CA.
- The facility is open for delivery and pick-ups Monday through Saturday, 7:00 AM to 7:00 PM, and Sunday 12:00 PM to 5:00 PM.
- Visitors to the site will be met by an employee of the site and have the date, time, identification, and purpose of the visit will be logged.
- Between 4 and 6 employees per day would occupy the site

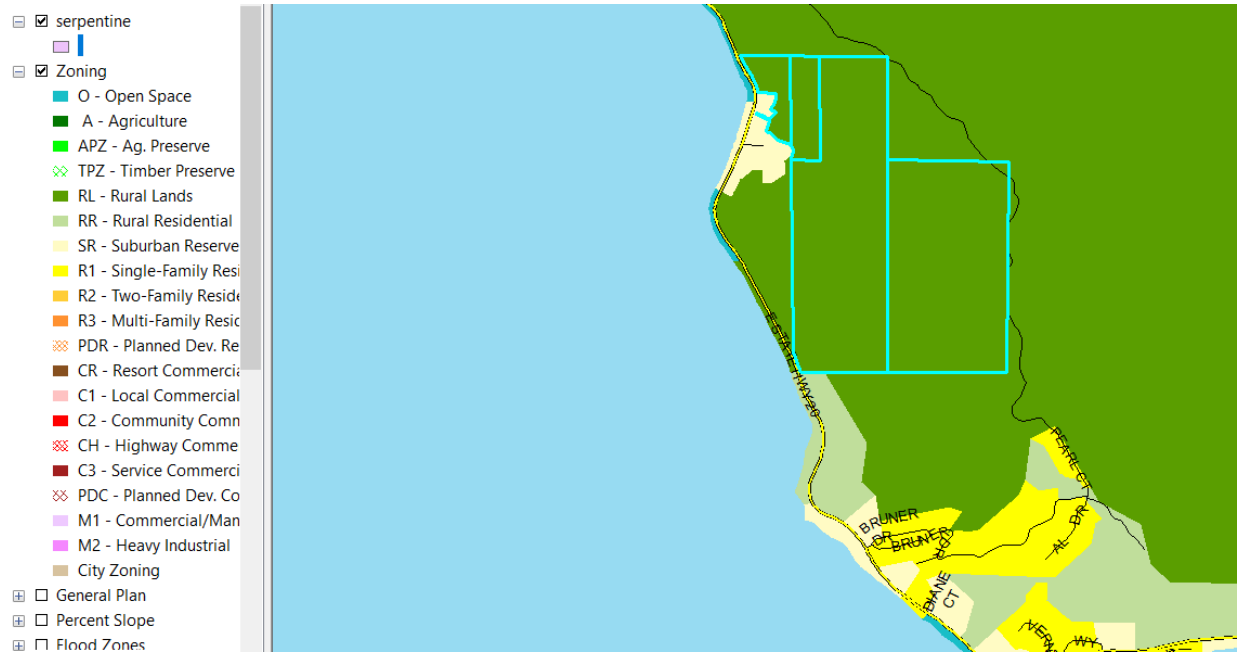
17. Surrounding Land Uses and Setting: Briefly describe the project's surroundings:

North: Rural Lands zoning; marginally developed and ranging from 18 to over 100 acres.

South: Mixture of Rural Lands and Rural Residential zoning; marginally developed and ranging from 14 to over 100 acres.

East: Rural Lands zoning, undeveloped and over 100 acres each.

West: Rural Lands and Suburban Residential zoning; lot sizes vary from under 1 acre to 40 acres.



Zoning of Site and Surrounding Properties

Other public agencies whose approval may be required (e.g., Permits, financing approval, or participation agreement.)

Lake County Community Development Department
Lake County Department of Environmental Health
Lake County Air Quality Management District
Lake County Department of Public Works
Lake County Agricultural Commissioner
Lake County Sheriff Department
South Lake County Fire Protection District (CalFire)
Central Valley Water Resource Control
California Department of Forestry & Fire Protection (CalFire)
California Department of Food and Agriculture (CalCannabis)
California Department of Pesticides Regulations
California Department of Public Health
California Department of Consumers Affairs

Aerial Photo of Site and Surrounding Properties

18. **Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?** Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21080.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3 (c) contains provisions specific to confidentiality.

    All 11 Tribes located in Lake County were notified of this proposal on February 28, 2020, in compliance with AB 52. One tribal comment was received from Middletown Rancheria as the result of the AB 52 notice that was sent out to the tribes; and Middletown Rancheria indicated that this site was out of their tribal boundary and had no comment.

19. **Attachments:**

    A. Site Plans

    B. Property Management Plan

    C. Supplemental Data

    D. D- Mitigation Monitoring and Reporting Program

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**	☐ Greenhouse Gas Emissions	☐ Population / Housing
☐ Agriculture & Forestry	☐ Hazards & Hazardous Materials	☐ Public Services
☒ **Air Quality**	☒ **Hydrology / Water Quality**	☐ Recreation
☒ **Biological Resources**	☐ Land Use / Planning	☐ Transportation
☒ **Cultural Resources**	☐ Mineral Resources	☒ **Tribal Cultural Resources**
☐ Geology / Soils	☒ **Noise**	☐ Utilities / Service Systems
☐ Wildfire	☐ Energy	☒ **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.

Initial Study Prepared By:
Eric Porter, Associate Planner

_____ Date:_____
SIGNATURE

Scott DeLeon – Interim Community Development Director
Community Development Department

SECTION 1 - 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 account of the whole action involved, including off-site as 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, and 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 XVII, "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 Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed 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 plans, 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 should identify:
   a) the significance 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 significance

KEY: 1 = Potentially Significant Impact
2 = Less Than Significant with Mitigation Incorporation
3 = Less Than Significant Impact
4 = No Impact

IMPACT CATEGORIES*	1	2	3	4	All determinations need explanation. Reference to documentation, sources, notes and correspondence.	Source Number**
I. AESTHETICS *Would the project:*						
a) Have a substantial adverse effect on a scenic vista?			X		The 275-acre project site contains a scenic combining overlay district and is located in the Lucerne area where views of Mt. Konocti and other scenic resources may exist. In addition, the project is adjacent to Highway 20, a designated scenic state highway. The four cultivation sites are located on terrain that is generally flat excluding the interior access road. The site is surrounded by trees and not visible from the highway. The site was previously used for crop production and the proposed cultivation sites will not impede any potential views of scenic vistas. The eastern-most cultivation site, the site closest to the highway (350 feet), contains a house and shed that will partially or largely obscure the view of the cannabis cultivation area from neighbors to the east and from the highway. In addition, the cultivation areas will be enclosed by a six foot tall solid wood fence. The positioning of the cultivation sites and proposed project will not cause adverse visual impacts to a scenic vista. **Less Than Significant Impact**	1, 2, 3, 4, 5, 6, 9
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?		X			The applicant is proposing to remove 18 oak trees of undetermined size in 'Field 3'. **AES-1: The applicant shall provide a tree removal and replacement plan showing a 3:1 tree replacement ratio for each oak tree removed that has a diameter of 5" or greater measured at 4.5' DBH. The Replacement Plan shall show the locations of replacement trees including method of irrigation. All replacement trees shall be kept in a healthy state for the duration of the use permit.** **Less than Significant Impact with Mitigation Measure AES-1 added.**	1, 2, 3, 4, 5, 6, 9
c) Substantially degrade the existing visual character or quality of public views the site and its surroundings? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			X		The 275 acre site is not easily visible from the neighboring lots or from the state highway due to the terrain and existing development near the lake. **Less Than Significant Impact**	1, 2, 3, 4, 5 6, 9
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			X		The project has very little potential to have substantial light or glare impacts on persons enjoying a day or nighttime view in this area. Any security lighting proposed would be downcast and shielded; this is a standard condition of approval for all cannabis cultivation licenses issued by the County. **Less than Significant Impact**	1, 2, 3, 4, 5, 6, 9

IMPACT CATEGORIES*	1	2	3	4	All determinations need explanation. Reference to documentation, sources, notes and correspondence.	Source Number**
II. AGRICULTURE AND FORESTRY RESOURCES ***In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest protocols adopted by the California Air Resources Board.*** *Would the project:*						
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?			X		The soil on the site is mapped as 'grazing land', which is defined as land on which the existing vegetation is suited to the grazing of livestock, and is not categorically considered as high value farmland. In addition, the County has issued 'early activation' for an outdoor cultivation use on the project site in April 2020. The County regards commercial cannabis cultivation to be a crop, and as such the project proposes an agricultural use; the project would not convert farmland that is high quality farmland to a non-agricultural use. **Less than Significant Impact**	1, 2, 3, 4, 5, 7, 8, 11, 13
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?			X		The site will not conflict with existing zoning and is not under Williamson Act contract. **Less than Significant Impact**	1, 2, 3, 4, 5, 7, 8, 11, 13
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))?				X	The proposed project will not conflict with existing zoning and/or cause the rezoning of forest land as defined by Public Resource Code section 4526, or of timberland as defined by Government Code section 51104(g). **No Impact**	1, 2, 3, 4, 5, 7, 8, 11, 13
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X	The applicant is not converting forest land to non-forest use. **No Impact**	1, 2, 3, 4, 5, 7, 8, 11, 13
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?				X	As proposed, this project would not induce changes to existing farmland that would result in its conversion to non-agricultural use. **No Impact**	1, 2, 3, 4, 5, 7, 8, 11, 13
III. AIR QUALITY *Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.* *Would the project:*						
a) Conflict with or obstruct implementation of the applicable air quality plan?		X			The project has some potential to result in short- and long-term air quality impacts. Dust and fumes may be released as a result of vehicular traffic, including small delivery vehicles. Odors generated by the plants, particularly during harvest season, will need to be mitigated either through passive means such as separation distance, or active means such as an Odor Control Plan. The cultivation sites are located east of the developed area near the lake; prevailing winds typically blow from northwest to southeast, away from the populated areas. The 275 acre property is significantly large, and the cultivation areas are over 250 feet from the nearest dwelling to the west. Additionally, implementation of mitigation measures below would further reduce air quality impacts to less than significant. **Less Than Significant with Mitigation Measures**	1, 3, 4, 5, 10, 21, 24, 31, 36

IMPACT CATEGORIES*	1	2	3	4	All determinations need explanation. Reference to documentation, sources, notes and correspondence.	Source Number**
					Incorporated. **Mitigation measures:** **<u>AQ-1:</u> Prior to obtaining the necessary permits and/or approvals for any phase, applicant shall contact the Lake County Air Quality Management District and obtain an Authority to Construct (A/C) Permit for all operations and for any diesel powered equipment and/or other equipment with potential for air emissions.** **<u>AQ-2:</u> All mobile diesel equipment used must be in compliance with State registration requirements. Portable and stationary diesel powered equipment must meet the requirements of the State Air Toxic Control Measures for CI engines.** **<u>AQ-3:</u> The applicant shall maintain records of all hazardous or toxic materials used, including a Material Safety Data Sheet (MSDS) for all volatile organic compounds utilized, including cleaning materials. Said information shall be made available upon request and/or the ability to provide the Lake County Air Quality Management District such information in order to complete an updated Air Toxic emission Inventory.** **<u>AQ-4:</u> All vegetation during site development shall be chipped and spread for ground cover and/or erosion control. The burning of vegetation, construction debris, including waste material is prohibited.** **<u>AQ-5:</u> The applicant shall have the primary access and parking areas surfaced with chip seal, asphalt or an equivalent all weather surfacing to reduce fugitive dust generation. The use of white rock as a road base or surface material for travel routes and/or parking areas is prohibited.** **<u>AQ-6</u>: All areas subject infrequent use of driveways, over flow parking, etc., shall be surfaced with gravel. Applicant shall regularly use and/or maintain graveled area to reduce fugitive dust generations.**	
b) Violate any air quality standard or result in a cumulatively considerable net increase in an existing or projected air quality violation?			X		The County of Lake is in attainment of state and federal ambient air quality standards. Burning cannabis waste is prohibited within the commercial cannabis ordinance for Lake County, and use of generators is only allowed during a power outage. On-site construction is likely to occur over a relatively short period of time (estimated one month), and minimal construction would be required. It is unlikely that this use would generate enough particulates during and after construction to violate any air quality standards. **Less than Significant Impact**	1, 3, 4, 5, 10, 21, 24, 31, 36

IMPACT CATEGORIES*	1	2	3	4	All determinations need explanation. Reference to documentation, sources, notes and correspondence.	Source Number**
c) Expose sensitive receptors to substantial pollutant concentrations?		X			The nearest residence appears to be located approximately 350 feet from the western-most cultivation site according to Google Earth map measurement. The nearest neighboring house is generally located upwind of the normal prevailing wind direction in this area; prevailing winds typically originate from the north / northwest and blow to the south / southeast. In addition, the applicant is required to prepare Erosion Control and Odor Management Plans to reduce any potential impacts. Therefore, it is not anticipated that the project would expose sensitive receptors to substantial odor and pollutant concentrations. **Less than Significant Impact with mitigation measures AQ-1 through AQ-6 added**	1, 3, 4, 5, 10, 21, 24, 31, 36
d) Result in substantial emissions (such as odors or dust) adversely affecting a substantial number of people?		X			The cultivation area on the site was previously disturbed by prior crop cultivation (non cannabis) and by subsequent disking that was determined to be inconsequential. Minimal site disturbance is needed to implement the project as proposed. The applicant will be required to submit an Odor Control Plan as a condition of approval, and will need to mitigate the outdoor cultivation areas through the use of fragrant plants around the perimeter of the outdoor growing areas. **Less than Significant Impact with mitigation measures AQ-1 through AQ-6 added**	1, 2, 3, 4, 5, 10, 21, 24, 31, 36
IV. BIOLOGICAL RESOURCES *Would the project:*						
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X			A Biological Assessment was prepared for the project by Jacobszoon and Associates dated October 14, 2019 (included as Attachment E). The Assessment concluded that there was the potential for 10 special-status wildlife species to have a moderate to high potential to occur within the study area, although none were observed during the site inspection. These include golden eagle, great blue heron, white-tailed kite, prairie falcon, black-crowned night heron, pallid bat, fringed myotis, Yuma myotis, American Badger and western pond turtle. The Assessment concluded that five special-status flora species have moderate or high potential to be present on the site; this includes bent flowered fiddleneck, Mendocino tarplant, bristly leptosiphon, Mt. Diablo cottonweed, and beaked tracyina. None of these flora species were observed on the site. Regardless, the following mitigation measures will be incorporated in the event that new or unobserved habitats are found within 100 feet of any of the four cultivation areas. **Mitigation measures:** **<u>BIO-1:</u> If project activities occur during the breeding season (February 1 through August 31), a qualified biologist shall conduct a breeding survey no more than 14 days prior to project activities to determine if any birds are nesting in trees on or adjacent to the study area. This shall include areas where water wells and security fencing will be installed.** **If active nests are found close enough to affect breeding success, the qualified biologist shall establish an appropriate exclusion zone around the nest. This exclusion zone may be modified depending upon the species, nest location, and existing visual buffers.**	1, 2, 3, 4, 5, 11, 12, 13, 16, 17, 21, 24, 29, 30, 31, 32, 33, 34

IMPACT CATEGORIES*	1	2	3	4	All determinations need explanation. Reference to documentation, sources, notes and correspondence.	Source Number**
					BIO-2: If initial ground disturbance occurs during the bat maternity roosting season (April 1 through September 1), a qualified biologist shall conduct a bat roost assessment of trees within 100 feet of the proposed construction. If bat maternity roosts are present, the biologist shall establish an appropriate exclusion zone around the maternity roost. **Less than Significant Impact with mitigation measures BIO-1 and BIO-2 added.**	
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?			X		The site contains no mapped riparian habitats or other mapped sensitive natural communities identified on local or state plans or mapping programs available to Lake County. **Less than Significant Impact**	1, 2, 3, 4, 5, 11, 12, 13, 16, 17, 29, 30, 31, 32, 33, 34
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?			X		The County's GIS data base shows no wetlands on or adjacent to the four cultivation areas. A small portion of the westernmost part of the site is within a mapped riparian area, however the cultivation areas are more than 100 feet from the boundary of these riparian areas. **Less than Significant Impact**	1, 2, 3, 4, 5, 11, 12, 13, 16, 17, 21, 24, 29, 30, 31, 32, 33, 34
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?			X		The Biological Study submitted listed several potential habitats on site for special flora and / or fauna, but did not observe native resident or migratory fish or wildlife species within the study area. **Less than Significant Impact**	1, 2, 3, 4, 5, 11, 12, 13, 16, 17, 21, 24, 29, 30, 31, 32, 33, 34
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X		This project does not conflict with any local policies or ordinances protecting biological resources. The trees on site are primarily introduced / non-native. There are no mapped sensitive species on the site. **Less than Significant Impact**	1, 2, 3, 4, 5, 11, 12, 13, 16, 17, 21, 24, 29, 30, 31, 32, 33, 34
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?				X	No special conservation plans have been adopted for this site and no impacts are anticipated. **No Impact**	1, 2, 3, 4, 5, 11, 12, 13, 16, 17, 21, 24, 29, 30, 31, 32, 33, 34
V. CULTURAL RESOURCES *Would the project:*						
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?		**X**			A Cultural Resources Evaluation was conducted for the subject parcel involved with this proposal by Dr. John Parker, Archeologist, dated September 30, 2019. The Cultural Resources Evaluation assessed the four cultivation areas proposed, and stated that no significant historic or prehistoric cultural materials were encountered during the field inspection, and the study determined that no significant cultural sites exist on the parcel. The applicant will remove 18 trees on the site in 'Field 3'. The County is adding two conditions that require certain actions on the part of the applicant if any potentially significant artifacts are found. These mitigation measures are as follows:	1, 3, 4, 5, 11, 14, 15

IMPACT CATEGORIES*	1	2	3	4	All determinations need explanation. Reference to documentation, sources, notes and correspondence.	Source Number**
					<u>CUL-1:</u> Should any archaeological, paleontological, or cultural materials be discovered during site development, all activity shall be halted in the vicinity of the find(s), the local overseeing Tribe shall be notified, and a qualified archaeologist retained to evaluate the find(s) and recommend mitigation procedures, if necessary, subject to the approval of the Community Development Director. **<u>CUL-2:</u> All employees shall be trained in recognizing potentially significant artifacts that may be discovered during ground disturbance. If any artifacts or remains are found, the local overseeing Tribe shall immediately be notified; a licensed Archaeologist shall be notified, and the Lake County Community Development Director shall be notified of such finds. If human remains are found, the Lake County Sheriff's Department shall also be notified, and shall coordinate with the local overseeing Tribe to inter or relocate the remains.** **Less than Significant Impact with mitigation measures incorporated**	
b) Cause a substantial adverse change in the significance of an archeological resource pursuant to §15064.5?		X			Please see response to Section V(a). The applicant is proposing minimal site disturbance. **Less than Significant Impact with mitigation measures incorporated**	1, 3, 4, 5, 11, 14, 15
c) Disturb any human remains, including those interred outside of formal cemeteries?		X			Please see response to Section V(a). The Cultural Study stated that it was unlikely that any significant findings, including human remains, appear likely on this site. The amount of new site disturbance that would occur is minimal. **Less than Significant Impact with mitigation measures incorporated**	1, 3, 4, 5, 11, 14, 15
VI. ENERGY *Would the project:*						
a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during project construction or operation?			X		The applicant states that she will use an on-grid power system as the primary energy source. The outdoor cultivation areas will have minimal need for power. The likely power sources include the security system, the well pump, and any outdoor security lighting that might be needed in the future. **Less than Significant Impact**	1, 3, 4, 5, 11, 14, 15
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			X		There are no mandatory energy reductions for cultivation activities within Article 27 of the Lake County Zoning Ordinance unless the applicant proposes 'indoor cultivation' (not proposed with this application). **Less than Significant Impact**	1, 3, 4, 5, 11, 14, 15
VII. GEOLOGY AND SOILS *Would the project:*						
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			X		<u>Earthquake Faults</u> i) There are no mapped earthquake faults on or adjacent to the subject site. <u>ii-iii) Seismic Ground Shaking and Seismic–Related Ground Failure, including liquefaction.</u> The mapping of the site's soil indicates that the soil is stable and not prone to liquefaction.	1, 3, 4, 5, 6, 7, 10, 17, 18, 19, 21, 24, 25

IMPACT CATEGORIES*	1	2	3	4	All determinations need explanation. Reference to documentation, sources, notes and correspondence.	Source Number**
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?					iv) Landslides According to the Landslide Hazard Identification Map prepared by the California Department of Conservation, Division of Mines and Geology, the area is considered generally stable, although the site is relatively steep (mostly greater than 30% slope). **Less Than Significant Impact**	
b) Result in substantial soil erosion or the loss of topsoil?			X		Minimal grading and/or earth movement will result with the project. The applicant proposes to import soil for the pots. However, this will not have any effect on the potential for erosion or the loss of topsoil. The applicant has submitted an engineered Stormwater Management Plan (included in the Property Management Plan in Attachment B) that shows wattles placed around the cultivation areas to control stormwater runoff direction and flow. **Less than Significant Impact**	1, 3, 4, 5, 6, 7, 10, 16, 17, 18, 19, 21, 24, 25, 30
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-site or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X		The majority of the site, including the cultivation areas, contains type 182 Neice-Sobrante-Hambright complex soil. The erosion potential for the Type 182 soil type is severe, however the project will rely on above-ground fabric pots, and minimal site disturbance is needed. Additionally, minimal construction will occur for the proposed infrastructure. **Less Than Significant Impact**	1, 3, 4, 5, 6, 7, 10, 16, 17, 18, 19, 21, 24, 25, 30
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?			X		The mapped soil on the cultivation portion of the site has moderate shrink-swell potential. Surface runoff is significant due to the slope of the site (30% to 75% according to the soil type). The applicant has provided a Stormwater Management Plan that incorporates wattles to help channel runoff. The fabric pots to be used are permeable, and will absorb some of the rainfall that will occur during storms. Based on the stormwater management plan submitted, no further mitigation measures are needed, however a condition of approval is needed that requires the applicant to adhere to the engineered stormwater management plan BMPs. **Less Than Significant Impact**	1, 3, 4, 5, 6, 7, 10, 16, 17, 18, 19, 21, 24, 25, 30
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?				X	The project site will be served through an existing on-site septic system. The +275 acre site is large enough to support the existing in-ground septic system. **No Impact**	1, 3, 4, 5, 6, 7, 10, 16, 17, 18, 19, 21, 24, 25, 29, 30

IMPACT CATEGORIES*	1	2	3	4	All determinations need explanation. Reference to documentation, sources, notes and correspondence.	Source Number**
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				X	There will be minimal ground disturbances occurring with this project to prepare the site for the complete cultivation area, which indicated that there are no unique paleontological or geologic features on the site. **No Impact**	1, 3, 4, 5, 11, 14, 15
VIII. GREENHOUSE GAS EMISSIONS *Would the project:*						
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X		In general, greenhouse gas emissions come from construction activities (vehicles) and from post-construction activities (vehicles primarily). Construction activities on this site will be minimal. Burning plant material is prohibited in Lake County, and projected trips generated will be between 4 and 12 per day during and after construction. An average single family dwelling generates 9.55 average daily trips according to the International Transportation of Engineer's manual; this cultivation proposal will similar daily trips to a typical dwelling both during and after construction takes place. **Less than Significant Impact**	1, 3, 4, 5, 21, 24, 29, 30, 31, 32, 34, 36
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X		This project will not conflict with any adopted plans or policies for the reduction of greenhouse gas emissions**.** **Less than Significant Impact**	1, 3, 4, 5, 21, 24, 29, 30, 31, 32, 34, 36
IX. HAZARDS AND HAZARDOUS MATERIALS *Would the project:*						
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X		This proposal will use organic pest control and fertilizers. This will significantly limit potential environmental hazards that would otherwise result. Cannabis waste is required to be chipped and spread on site; burning cannabis waste is prohibited in Lake County. All pesticides and fertilizers are required to be stored in a locked and secure facility as are being proposed by the applicant. **Less than Significant Impact**	1, 3, 4, 5, 10, 13, 17, 21, 24, 25, 29, 30, 31, 32, 33, 34, 36
b) Create a significant hazard to the public or the environment through reasonable foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X		The pesticides and fertilizers proposed are mostly organic, and will be stored in a secure building. The site preparation will require some light construction equipment; all equipment staging shall occur on previously disturbed areas on the site. **Less than Significant Impact**	1, 3, 4, 5, 10, 13, 17, 20, 21, 24, 25, 29, 30, 31, 32, 33, 34, 36
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X	The proposed project is not located within one-quarter mile of an existing or proposed school. **No Impact**	1, 3, 4, 5, 10, 13, 17, 21, 24, 25, 29, 30, 31, 32, 33, 34, 36
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?				X	The project site is not listed as a site containing hazardous materials in the databases maintained by the Environmental Protection Agency (EPA). **No Impact**	1, 3, 4, 5, 10, 13, 17, 21, 24, 25, 29, 30, 31, 32, 33, 34, 36

IMPACT CATEGORIES*	1	2	3	4	All determinations need explanation. Reference to documentation, sources, notes and correspondence.	Source Number**
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?				X	The project is not located within two (2) miles of an airport and/or within an Airport Land Use Plan. **No Impact**	1, 3, 4, 5, 20, 22
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X		The project would not impair or interfere with an adopted emergency response or evacuation plan. The project has been reviewed by the County Roads Department, as well as CalFire for consistency with access and safety standards. **Less Than Significant Impact**	1, 3, 4, 5, 20, 22, 35, 37
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?			X		The site is mapped as being a fire risk, however the project will not further heighten fire risks on the site, and will actually provide a five acre fire break where the cultivation activity will occur. The applicant will adhere to all Federal, State and local fire requirements/regulations for setbacks and defensible space; these setbacks are applied at the time of building permit review. See Section XX, Wildfire, for more information. **Less than Significant Impact**	1, 3, 4, 5, 20, 35, 37
X. HYDROLOGY AND WATER QUALITY *Would the project:*						
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			X		The project parcel is current served by an existing onsite septic and well, and has 1898 water rights to draw water from Clear Lake. The applicant shall adhere to all Federal, State and Local regulations regarding wastewater treatment and water usage requirements. **Less Than Significant Impact**	1, 3, 4, 5, 13, 21, 23, 24, 25, 29, 31, 32, 33, 34
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			X		The applicant has provided 1898 (Samuel Levy) water rights that allow the applicant to draw directly from Clear Lake into (12) proposed on-site 5.000 gallon water tanks to be used for crop irrigation. There is also an existing on-site well. The project would not alter a stream or river, nor would it substantially increase the amount of runoff that would result in flooding. There is an above-ground seasonal stream located near the westernmost cultivation area; the applicant has measured the 100 foot setback to the 'top of bank' for this stream, and will cultivate outside this setback. **Less than Significant Impact**	1, 3, 4, 5, 13, 21, 23, 24, 25, 29, 31, 32, 33, 34
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		X			The applicant has stated that the total cultivation area is about five acres in size. The outdoor cultivation area will remain permeable, since above-ground pots can absorb water.. The total non-permeable surface area will not increase with this project, since the two 1,300 s.f. barns to be used as cannabis drying buildings already exist. The applicant has not provided an engineered Stormwater Management Plan, which is typically required before a use permit application can go to a public hearing. Consequently, a mitigation measure is added here to require this engineered Stormwater Management Plan as follows:	1, 3, 4, 5, 13, 21, 23, 24, 25, 29, 31, 32, 33, 34

IMPACT CATEGORIES*	1	2	3	4	All determinations need explanation. Reference to documentation, sources, notes and correspondence.	Source Number**
rate or amount of surface runoff in a manner which would result in flooding on- or off-site; iii) Create or contribute to runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; iv) Impede or redirect flood flows?					**HYD-1: The applicant shall submit an engineered Erosion Control and Drainage Plan to Lake County Planning Department prior to use permit issuance for review and acceptance, or review and medication.** **Less than Significant Impact with mitigation measure incorporated**	
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			X		The cultivation sites are not located in a flood plain, tsunami or seiche zone. **Less than Significant Impact**	1, 3, 4, 5, 13, 21, 23, 24, 25, 29, 31, 32, 33, 34
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X		The proposed use will not conflict with or obstruct the implementation of water quality control plan or ground water management plan as all hazardous materials including pesticides and fertilizers will be stored in a locked / secured shed, and will meet all Federal, State and Local agency requirements for hazardous material storage and handling. **Less than Significant Impact**	1, 3, 4, 5, 10, 13, 21, 23, 24, 25, 29, 31, 32, 33, 34
XI. LAND USE AND PLANNING *Would the project:*						
a) Physically divide an established community?			X		This project is consistent with the Lake County General Plan, Upper Lake – Nice Area Plan, the Lake County Zoning Ordinance, and the Hazard Mitigation Plan. The site holds a General Pan designation of Rural Lands and the project is consistent with this designation, which allows agricultural uses in the RL zoning district. The property is zoned "RL" Rural Lands, with a "FF" Floodway Fringe and "WW" Waterway combining district. Cannabis cultivation is permitted by the Lake County Zoning Ordinance with a Use Permit. The applicant shall adhere to all incorporated mitigation measures and conditions of approval. As previously described, the creek on-site will be avoided with a 100 foot setback minimum. California Department of Food & Agriculture (CDFA) is responsible for licensing and regulation of cannabis cultivation and enforcements defined in the Medicinal and Adult Use Cannabis Regulation and Safety Act (MAUCRSA) and CDFA regulations related to cannabis cultivation. The applicant is required to obtain a license from the CDFA prior to legal cultivation occurring. With approval of and adherence to the permits listed above, the project would not conflict with any land use plan or policy intended for avoiding or mitigation an environmental effect. **Less than Significant Impact**	1, 3, 4, 5, 6, 35

IMPACT CATEGORIES*	1	2	3	4	All determinations need explanation. Reference to documentation, sources, notes and correspondence.	Source Number**
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?			X		This project is consistent with the Lake County General Plan, the Upper Lake - Nice Area Plan and the Lake County Zoning Ordinance (Article 27). **Less than Significant Impact**	1, 3, 4, 5, 20, 21, 22, 27, 28
XII. MINERAL RESOURCES *Would the project:*						
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?				X	The County's Aggregate Resource Management Plan (ARMP) does not identify this project as having an important source of aggregate. **No Impact**	1, 3, 4, 5, 26
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?				X	The County of Lake's General Plan, the Upper Lake - Nice Area Plan nor the Lake County Aggregate Resource Management Plan designates the project site as being a locally important mineral resource recovery site. **No Impact**	1, 3, 4, 5, 26
XIII. NOISE *Would the project result in:*						
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?		X			Noise related to cannabis cultivation typically occurs either during construction, or as the result of machinery related to post construction equipment such as well pumps or emergency backup generators used during power outages. The project will have some minimal site preparation (hours of construction are limited through standard conditions of approval). As stated, there may be a need for an emergency backup generator, however generator usage would be limited to use only during power outages – this is a standard condition of approval for all cannabis cultivation projects. The following mitigation measures are typically added for all commercial cannabis activities to protect neighboring property owners from excessive impacts related to noise. **<u>NOI-1:</u> All construction activities including engine warm-up shall be limited Monday Through Friday, between the hours of 7:00am and 7:00pm to minimize noise impacts on nearby residents. Back-up beepers shall be adjusted to the lowest allowable levels. This mitigation does not apply to night work.** **<u>NOI -2:</u> Maximum non-construction related sounds levels shall not exceed levels of 55 dBA between the hours of 7:00AM to 7:00PM and 45 dBA between the hours of 10:00PM to 7:00AM within residential areas as specified within Zoning Ordinance Section 21-41.11 (Table 11.1) at the property lines.** **<u>NOI-3:</u> The operation of the Air Filtration System shall not exceed levels of 57 dBA between the hours of 7:00AM to 10:00PM and 50 dBA from 10:00PM to 7:00AM within residential areas as specified within Zoning Ordinance Section 21-41.11 (Table 11.2) measured at the property lines.** **Less than Significant Impact with mitigation measures**	1, 3, 4, 5, 13

IMPACT CATEGORIES*	1	2	3	4	All determinations need explanation. Reference to documentation, sources, notes and correspondence.	Source Number**
					incorporated	
b) Generation of excessive groundborne vibration or groundborne noise levels?			X		The project is not expected to create unusual groundborne vibration due to construction or to post-construction facility operation. The low level truck traffic during construction and for deliveries would create a minimal amount of groundborne vibration. **Less Than Significant Impact**	1, 3, 4, 5, 13
XIV. POPULATION AND HOUSING *Would the project:*						
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)?				X	The project does not propose any new homes, nor does it propose an extension of infrastructure; the project is not anticipated to induce population growth. **No Impact**	1, 3, 4, 5
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				X	No housing will be displaced as a result of the project. **No Impact**	1, 3, 4, 5
XV. PUBLIC SERVICES *Would the project:*						
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: - Fire Protection? - Police Protection? - Schools? - Parks? - Other Public Facilities?				X	The project does not propose housing or other uses that would necessitate the need for new or altered government facilities. There will not be a need to increase fire or police protection, schools, parks or other public facilities as a result of the project's implementation. **No Impact**	1, 3, 4, 5, 13, 17, 20, 21, 22, 23, 24, 27, 28, 29, 30, 31, 32, 33, 34, 36, 37
XVI. RECREATION *Would the project:*						
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X	The project will not have any impacts on existing parks or other recreational facilities**.** **No Impact**	1, 3, 4, 5
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?				X	This project will not necessitate the construction or expansion of any recreational facilities. **No Impact**	1, 3, 4, 5

IMPACT CATEGORIES*	1	2	3	4	All determinations need explanation. Reference to documentation, sources, notes and correspondence.	Source Number**
XVII. TRANSPORTATION *Would the project:*						
a) Conflict with a plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle lanes and pedestrian paths?			X		The proposed project site is accessed from E. Highway 20, a State Highway. A minimal increase in traffic is anticipated due to site construction, maintenance and weekly and/or monthly incoming and outgoing deliveries through the use of van-type delivery vehicles. Daily employee trips are anticipated to be between 4 and 12 average daily trips. There are no known capacity issues with Highway 20 in this location. The project does not propose any changes to the transportation system and has been reviewed by the County Roads Department and CalFire for consistency with all applicable safety regulations and policies. **Less than Significant Impact**	1, 3, 4, 5, 9, 20, 22, 27, 28, 35
b) For a land use project, would the project conflict with or be inconsistent with CEQA guidelines section 15064.3, subdivision (b)(1)?			X		CEQA chapter 15064.3, subdivision (b)(1) requires analysis for thresholds of significance for a land use project. Projects in Lake County that produce more than 50 average daily trips (ADT) are looked at more carefully than smaller land use projects such as this one, and projects that generate 200 or more ADT require a traffic impact study. The site will use Highway 20, a paved State Highway. **Less than Significant Impact**	1, 3, 4, 5, 9, 20, 22, 27, 28, 35
d) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X		No changes to Highway 20 are proposed, nor do any appear to be needed. The applicant has improved the interior driveway with gravel, and the driveway is relatively flat and open leading to the cultivation site. The project has been reviewed by the County Roads Department and CalFire for consistency with all applicable safety regulations and policies. **Less than Significant Impact**	1, 3, 4, 5, 9, 20, 22, 27, 28, 35
e) Result in inadequate emergency access?				X	As proposed, this project will not impact existing emergency access. **No Impact**	1, 3, 4, 5, 9, 20, 22, 27, 28, 35
XVIII. TRIBAL CULTURAL RESOURCES *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:*						
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or		X			A Cultural Study was done for this site. The Study concluded that it was unlikely that this site would be a potential candidate for California Historic Registry inclusion. However, in the event that artifacts or other potentially significant items / relics or remains are discovered that could change the nature of this site, mitigation measures have been added (CUL-1 and CUL-2) **Less than Significant Impact with mitigation measures incorporated**	1, 3, 4, 5, 11, 14, 15
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public		X			All 11 Lake County based tribes were notified of this action; none had concerns about this project. The Cultural Study provided indicated that it was unlikely that this site contains items of significance per PRC 5024.1. However, in the event that artifacts or other potentially significant items / relics or remains are discovered that could change the nature of this site, mitigation measures have been added (CUL-1 and CUL-2)	1, 3, 4, 5, 11, 14, 15

IMPACT CATEGORIES*	1	2	3	4	All determinations need explanation. Reference to documentation, sources, notes and correspondence.	Source Number**
Resources Code 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.					**Less than Significant Impact with mitigation measures incorporated**	
XIX. UTILITIES AND SERVICE SYSTEMS *Would the project:*						
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			X		The subject parcel is served by an existing well and septic system. The applicant shall adhere to all Federal, State and Local regulations regarding wastewater treatment and water usage requirements. **Less than Significant Impact**	1, 3, 4, 5, 29, 32, 33, 34, 37
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?			X		The site contains an on-site well and has 1898 (Samuel Levy) water rights to draw water from Clear Lake. The applicant is proposing (12) 5,000 gallon water tanks on site for irrigation water storage. **Less Than Significant Impact**	1, 3, 4, 5, 29, 32, 33, 34, 36, 37
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?			X		The site is served by an existing septic system with no known issues regarding adequacy. **Less Than Significant Impact**	1, 3, 4, 5, 29, 32, 33, 34
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?			X		The existing landfill has sufficient capacity to accommodate the project's solid waste disposal needs for the next five years according to Lars Ewing, Manager of Public Services in Lake County. **Less than Significant Impact**	1, 3, 4, 5, 28, 29, 32, 33, 34, 36
f) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			X		The County uses a standard condition of approval regarding compliance with all federal, state and local management for solid waste. The cultivator must chip and spread any vegetative waste on-site, and the estimated total amount of solid waste from this project is 400 pounds annually. **Less than Significant Impact**	1, 3, 4, 5, 29, 32, 33, 34, 36

IMPACT CATEGORIES*	1	2	3	4	All determinations need explanation. Reference to documentation, sources, notes and correspondence.	Source Number**
XX. WILDFIRE *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:*						
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?			X		The project site is located in a high fire hazard severity zone and is in State (CalFire) Responsibility Area as well as within the Northshore Fire Protection District's service area. A site visit on November 19, 2019 confirmed that the site is well-tended; the interior driveway is 20' wide, and there are large areas that contain grass but little or no other undergrowth where turn-arounds are possible located at approximate 400 foot intervals in between the gate at Highway 20 and the cultivation site, which is the primary focus of the cultivation activity. The property is subject to the Lake County Hazard Mitigation Plan, and shall maintain fire breaks around all structures. The applicant will adhere to all Federal, State and local fire requirements/regulations and conditions of approval for such regulations have been added to the project relating to but not limited to the following: property line setbacks for structures being a minimum of 30 feet; addressing on-site water storage for fire protection, driveway/roadway types and specifications based on designated usage; all weather driveway/roadway surfaces being engineered for 75,000 lb vehicles; maximum slope of 16%; turnout requirements; gates requirements (14 foot wide minimum) and gate setbacks (minimum of 30 feet from road); parking, fuels reduction regulations including a minimum of 100 feet of defensible space, etc. The project would not impair an adopted emergency response or evacuation plan. Should this site need to evacuate, Highway 20 is a primary route with several outlets located near the subject site. **Less than Significant Impact**	1, 2, 4, 5, 6, 20, 23, 31, 35, 37, 38
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?			X		The site and surrounding lots are flat and generally devoid of vegetation other than some introduced trees. Approval of the project will not increase the fire risk in this area. This particular area has a history of wildfires. However, the five acre cultivation site will help to act as a fire break, particularly given the lack of existing vegetation on this site. The proposed cultivation activity will not exacerbate wildfire risks and expose persons to pollutant concentrations in the event of a wildfire in the area. As stated above, the applicant will adhere to all Federal, State and local fire requirements/regulations. **Less than Significant Impact**	1, 2, 4, 5, 6, 20, 23, 31, 35, 37, 38
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?			X		The site is served by Highway 20, a well maintained State Highway. No other infrastructural improvements is necessary for this project. **Less than Significant Impact**	1, 2, 4, 5, 6, 20, 23, 31, 35, 37, 38
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?			X		The site is flat; there is little chance of risks associated with post-fire slope runoff, instability or drainage changes based on the lack of site changes that would occur by this project. **Less than Significant Impact**	1, 2, 4, 5, 6, 20, 23, 31, 35, 37, 38

IMPACT CATEGORIES*	1	2	3	4	All determinations need explanation. Reference to documentation, sources, notes and correspondence.	Source Number**
XXI. MANDATORY FINDINGS OF SIGNIFICANCE						
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?		X			The project proposes a cultivation of commercial cannabis in previously disturbed area. As proposed, this project is not anticipated to significantly impact habitat of fish and/or wildlife species or cultural resources with the incorporated mitigation measures described above.	All
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?		X			Potentially significant impacts have been identified related to Aesthetics, Air Quality, Cultural / Tribal, Noise and Biological Resources. These impacts in combination with the impacts of other past, present and reasonably foreseeable future projects could cumulatively contribute to significant effects on the environment. Implementation of and compliance with mitigation measures identified in each section as project conditions of approval would avoid or reduce potential impacts to less than significant levels and would not result in cumulatively considerable environmental impacts.	All
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?		X			The proposed project has potential to result in adverse indirect or direct effects on human beings. In particular, to Aesthetics, Air Quality, Cultural / Tribal, Noise and Biological Resources have the potential to impact human beings. Implementation of and compliance with mitigation measures identified in each section as conditions of approval would not result in substantial adverse indirect or direct effects on human beings and impacts would be considered less than significant.	All

* Impact Categories defined by CEQA

****Source List**

1. Lake County General Plan
2. Lake County GIS Database
3. Lake County Zoning Ordinance
4. Upper Lake - Nice Area Plan
5. Draper Cannabis Cultivation Application – Major Use Permit.
6. U.S.G.S. Topographic Maps
7. U.S.D.A. Lake County Soil Survey
8. Lake County Important Farmland Map, California Department of Conservation Farmland Mapping and Monitoring Program
9. Department of Transportation's Scenic Highway Mapping Program, *(http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm)*
10. Lake County Serpentine Soil Mapping
11. California Natural Diversity Database (https://www.wildlife.ca.gov/Data/CNDDB)
12. U.S. Fish and Wildlife Service National Wetlands Inventory
13. Biological Assessment for Mary Draper, prepared by Alicia Ringstadt, Biologist for Jacobzoon Associates and dated October 14, 2019.
14. Cultural Site Assessment Survey, prepared for Mary Draper by Dr. John Parker and dated September 30, 2019.

15. California Historical Resource Information Systems (CHRIS); Northwest Information Center, Sonoma State University; Rohnert Park, CA.
16. Water Resources Division, Lake County Department of Public Works Wetlands Mapping.
17. U.S.G.S. Geologic Map and Structure Sections of the Clear Lake Volcanic, Northern California, Miscellaneous Investigation Series, 1995
18. Official Alquist-Priolo Earthquake Fault Zone maps for Lake County
19. Landslide Hazards in the Eastern Clear Lake Area, Lake County, California, Landslide Hazard Identification Map No. 16, California Department of Conservation, Division of Mines and Geology, DMG Open –File Report 89-27, 1990
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25. FEMA Flood Hazard Maps
26. Lake County Aggregate Resource Management Plan
27. Lake County Bicycle Plan
28. Lake County Transit for Bus Routes
29. Lake County Environmental Health Division
30. Lake County Grading Ordinance
31. Lake County Natural Hazard database
32. Lake County Countywide Integrated Waste Management Plan and Siting Element, 1996
33. Lake County Water Resources
34. Lake County Waste Management Department
35. California Department of Transportation (CALTRANS)
36. Lake County Air Quality Management District website
37. Northshore Fire Protection District
38. Site Visit – November 19, 2019

JACOBSZOON & ASSOCIATES, INC.

natural resource planning & management

BIOLOGICAL RESOURCES ASSESSMENT

Prepared For:

Mary Draper
7004 E. Hwy. 20 Lucerne, CA 95458
APNs: 006-005-23-000, 006-005-55-000, 006-021-03-000, 006-021-16-000, 006-021-17-000, 006-021-18-000, 006-024-09-000, 006-025-13-000

Prepared by Jacobszoon & Associates, Inc.

Alicia Ives Ringstad
Senior Biologist
alicia@jaforestry.com

Aaron Unroe
Environmental Analyst
aaron@jaforestry.com

Date: October 14, 2019

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Section 1.0: Introduction

This report is intended to summarize the background, methods of survey, and results of a biological site assessment conducted on 7004 E. Hwy. 20, Lucerne, CA 95458 (above referenced APNs, Appendix D: Figures 1 and 2) for the purpose of obtaining a Lake County commercial cannabis permit and CalCannabis State cultivation licensing. This report includes the following:

- Regulations and Project Description (Section 2)
- Study Area Setting (Section 3)
- Field Survey Methodology (Section 4)
- Field Survey Results (Section 5)
- Assessment Summary and Recommendations (Section 6)
- Tables of Special-Status Plants and Wildlife within CNDDB Five-Mile Survey Radius (Appendix A)
- List of Species Observed (Appendix B)
- Representative Photographs of Project Area and Project Buffer (Appendix C)
- Supporting Figures (Maps) (Appendix D)

Section 2.0: Regulations and Project Description

2.1 Regulatory Setting

In addition to the requirements of Lake County's Ordinance, the proposed project shall comply with Federal, State, and local regulations designed to protect sensitive natural resources. Two (2) biological assessments were conducted, one for the pre-existing cultivation area on October 24, 2017 and one for the proposed development of new cultivation areas on September 30, 2019 to assess biotic resources within the Study Areas. The biological assessment conducted in October of 2017 was completed for a pre-existing cannabis cultivation area located within the parcel (Appendix D: Figures 1 & 2, APN 006-005-55-000). The biological assessment conducted in September of 2019 was completed for the development of three (3) additional cannabis cultivation areas (Appendix D: Figures 1 & 2, Study Area 1, APNs 006-005-23-000 & 006-005-55-000). In addition to the proposed cannabis cultivation areas (Study Area 1), two (2) watercourse crossings were surveyed for sensitive natural resources or potential for species of special concern to be utilizing the crossing or adjacent habitat (Appendix D: Figures 1 & 2, Study Area 2 (A & B)). The following natural resources are protected under one or more of several Federal and/or State regulations and should be considered when designing and/or implementing the Proposed Project within the Study Areas:

Essential Fish Habitat: protected through changes to the Magnuson-Stevens Fishery Conservation and Management Act to maintain sustainable fisheries in the United States, administered by National Marine Fisheries Service (NMFS):

- Includes habitats (rivers, creeks, estuaries) that may support anadromous fish (fish migrating from ocean habitat into freshwater river habitat), as well as commercially and/or ecologically valuable fishes

Local Regulations: The Lake County Regulations for the Cultivation of Medical Marijuana (Article 72 Sec. 21-72) stipulates and outlines rules set forth by the Lake County Board of Supervisors for the purpose of cultivation of medical cannabis. The intent is to limit harmful environmental impacts that are often associated with (illegal) cannabis cultivation and has established standards for such activities.

- Lake County Code Ordinance No. 3073, Amending Chapter 21, Article 27 of the Lake County Code Pertaining to Cannabis Cultivation provides parameters for medical and commercial cannabis cultivation within the County and definitions for adult personal use, qualified patient, and primary caregiver cannabis cultivation. Additionally, the Ordinance describes subcategories including, but not limited to, Enforcement, Development Standards and Restrictions, Permits Required, and Development Standards for the cultivation of medical and commercial cannabis within the County.

Sensitive Natural Communities: protected under the California Fish and Game Code (CFGC), administered by California Department of Fish and Wildlife (CDFW):

- Includes terrestrial vegetation or plant communities that are ranked by NatureServe and considered "threatened" or "endangered" by CDFW, lists of such are included in *List of Vegetation Alliances and Associations* (CDFW 2010)

Special-status Plant and Wildlife Species including Critical Habitat: protected under one or more of the Federal Endangered Species Act (ESA), California Endangered Species Act (CESA), California Environmental Quality Act (CEQA), administered by the U.S. Fish and Wildlife Service (USFWS), and/or CDFW:

- Includes plants listed under the ESA and/or CESA, or those plants ranked by the California Native Plant Society (CNPS) as Rank 1, 2, 3 and 4.
- Includes wildlife listed under the ESA and/or CESA, and wildlife listed by CDFW as Species of Special Concern, Fully Protected Species, and/or Special-status including Invertebrates, Birds of Conservation Concern listed by USFWS, Species of Concern listed by National Marine Fisheries Service (NMFS), Western Bat Working Group (WBWG).

Streams, Lakes, and Riparian Habitat: protected under the California Fish and Game Code (CFGC), administered by the California Department of Fish and Wildlife (CDFW):

- Includes creeks and rivers (bodies where water flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life), and vegetation adjacent to and associated with (riparian habitat)

Waters of the State: protected under the Porter-Cologne Act, administered by the State Water Resources Control Board (SWRCB)

Waters of the U.S.: protected under the Clean Water Act (CWA), administered by the Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers (Corps):

- Includes wetlands, streams, rivers, and other aquatic habitats meeting the guidance issued by the Corps.

2.2 Project Description

It is Jacobszoon and Associates, Inc. understanding that the project includes the use of one (1) pre-existing cannabis cultivation area, three (3) proposed cannabis cultivation areas and the use of two (2) existing watercourse crossings within two (2) contiguous parcels, ~210 aggregate acres (APNs 006-005-23-000 & 006-005-55-000) (Appendix D: Figures 1 & 2). During the biological assessment on September 30, 2019 there was no development, including grading or vegetation removal within Study Area 1 for the proposed cannabis cultivation areas. Such projects must conform to the requirements of the California Department of Fish and Wildlife (CDFW) Lake or Streambed Alteration Agreement per the California Department of Food and Agriculture (CDFA) CalCannabis Program (BPC26060.1(b)(3)).

Section 3.0: Study Area Setting

The following subsections summarize the physical and biological settings of the Study Areas.

3.1 Topography and Soils

The parcel and Study Areas are approximately 2.5 miles south of Lucerne, CA, located within Sections 17, 18, 19, 20, Township 14N, Range 08W, Mount Diablo Base and Meridian, in the Lucerne USGS 7.5minute quadrangle. The parcels are located within the Rodman Slough-Frontal Clear Lake (HUC-12 180201160310) watershed, located at a range of 1360 feet (415 meters) to 2520 feet (768 meters) elevation.

According to the United States Department of Agriculture, Natural Resources Conservation Service's *Web Soil Survey*, the Study Area is underlain by two soil mapping units: Neice-Sobrante-Hambright complex, 30 to 75 percent slopes, and Speaker-Maymen-Marpa association, 50 to 75 percent slopes. Descriptions of the soil series are as follows (reference Appendix D: Figure 4):

Neice-Sobrante-Hambright complex (Map Unit Symbol: 182): This series is comprised of a combination of Neice, Sobrante, and Hambright soils series. The unit is 40 percent Neice gravelly, 15 percent Sobrante loam, and 15 percent Hambright very gravelly loam. Included are small areas of Millsholm soils and clayey soils that are moderately deep to serpentine. Included areas make up about 30 percent of the total acreage. The native vegetation is mainly oaks, brush, and annual grasses. Elevation is 1,500 to 2,500 feet.

- Neice series consists of very deep, well drained soils on hills. These soils formed in material weathered from metavolcanics rock.
- Sobrante series consists of moderately deep, well drained soils on hills. These soils formed in material derived from basalt.
- Hambright series consists of shallow, well drained soils on hills. These soils formed in material weathered from basalt.

Speaker-Maymen-Marpa association (Map Unit Symbol: 226): This series is comprised of a combination of Speaker, Maymen, and Marpa soils series. The unit is 30 percent Speaker gravelly loam, 25 percent Maymen gravelly loam, and 20 percent Marpa gravelly loam. Included are small areas of Bamtush, Etsel, Mayacama, Neuns, and Sanhedrin soils and Rock outcrop. Included areas make up about 25 percent of the total acreage. The native vegetation is mainly conifers and hardwoods on the Speaker and Marpa soils and brush and hardwoods on the Maymen soil. Elevation is 1,500 to 4,000 feet.

- Speaker series consists of moderately deep, well drained soils on mountains. These soils formed in material weathered from sandstone or shale. Slope is 15 to 75 percent.
- Maymen series consists of shallow, somewhat excessively drained soils on mountains. These soils formed in material weathered from sandstone or shale. Slopes range from 15 to 75 percent.
- Marpa series consists of moderately deep, well drained soils on mountains. These soils formed in material weathered from sandstone. Slope is 30 to 75 percent.

The project areas fall inside Map Unit 182. Typical pedons for these soils are as follows:

Neice:

A1--0 to 2 inches; yellowish brown (5YR 4/6) gravelly loam, dark reddish brown (5YR 3/4) moist

A2--2 to 11 inches; yellowish red (5YR 5/6) gravelly loam, dark reddish brown (5YR 3/4) moist

Bt1--11 to 20 inches; yellowish red (5YR 4/6) gravelly clay loam dark reddish brown (2.5YR 3/4) moist

Bt2--20 to 34 inches; dark red (2.5YR 3/6) very gravelly, clay dark red (2.5YR 3/6) moist

Bt3--34 to 70 inches; dark red (2.5YR 3/6) very gravelly clay, dark red (2.5YR 3/6) moist

Sobrante:

A--0 to 5 inches; reddish brown (5YR 5/4) silt loam, dark reddish brown (5YR 3/4) moist

Bt1--5 to 11 inches; yellowish red (5YR 4/6) silt loam, yellowish red (5YR 3/6) moist

Bt2--11 to 24 inches; yellowish red (5YR 5/6) light clay loam, dark red (2.5YR 3/6) moist

Cr--24 to 30 inches; soft well-weathered basic schist, slightly acid (pH 6.5). (0 to 6 inches thick)

R--30 to 34 inches; hard basic schist with pockets of slightly weathered schist.

Hambright:

A--0 to 1 inch, dark grayish brown (10YR 4/2) very stony loam, dark brown (7.5YR 3/2) moist

AB--1 inch to 6 inches; brown (10YR 4/3) very stony loam, dark reddish brown (5YR 3/2) moist

Bw--6 to 12 inches, dark brown (7.5YR 4/4) very stony loam, dark reddish brown (5YR 3/2) moist

R--12 inches, fractured basic igneous bedrock.

3.2 Biota and Land Use

The dominant vegetation on the parcel was typical of blue oak woodland (*Quercus douglasii* – MCV2 Alliance) and mixed native/non-native grasslands, including wild oat grassland (*Avena barbata, fatua* – MCV2 Alliance) and annual dogtail grassland (*Cynosurus echinatus* – MCV2 Alliance) habitats intermixed. One (1) pre-existing cannabis cultivation site (Appendix D: Figures 1 & 2, Existing Cultivation Area) and three (3) proposed cannabis cultivation sites (Appendix D: Figures 1 & 2, Study Area 1) exist within the wild oat grassland and annual dogtail grassland habitats. Two (2) watercourse crossings (Appendix D: Figures 1 & 2, Study Area 2) are located within the blue oak woodland and mixed native/non-native grassland habitats. These watercourse crossings are Class III tributary watercourses that provide seasonally-mesic areas. During the biological assessments, no water was flowing within these watercourses and no aquatic habitat was available for wildlife use.

For a complete list of all plant and wildlife species observed during the biological assessments see Appendix B: List of Species Observed. Section 5 provides a detailed account of the biological communities found on-site, including sensitive and non-sensitive biological communities and additionally the special-status flora and fauna with potential to occur within the Study Areas.

Section 4.0: Field Survey Methodology

4.1 Assessment Methods

The biological resource assessment is designed to assess the potential for the presence of sensitive wildlife species and to determine whether habitat for sensitive plant species and plant communities may or may not be present. The purpose of this analysis is to assess the potential for cumulative impacts to biological resources that may occur as a result of the proposed project(s). The basis of the biological assessment analysis is a comparison of existing habitat conditions within the Study Areas to the geographic range and habitat requirements of sensitive plant and wildlife species.

4.2 Database Resource Descriptions

The potential for occurrences of rare, threatened, endangered or plant and animal species of concern within or near the Study Areas was evaluated by reviewing topographic maps, aerial photography, the California Native Plant Society's Rare Plant Rank (CRPR) electronic inventory (online edition, v8-03 0.45), the California Department of Fish and Wildlife California Natural Diversity Database (CNDDB) Spotted Owl Data Viewer, RareFind and Quick Viewer (online edition, v5.80.28I). Lake County also maintains a mapped database of biological resources including special features such as wetland, vernal pool, aquatic, and riparian communities.

The CRPR database produces a list of sensitive plants potentially occurring at a site based on various site characteristics: location of the Study Areas with regard to the geographic range of sensitive plant species, location(s) of known populations of sensitive plant species as mapped in the CNDDB, soils of the Study Areas, elevation, presence/absence of special habitat features (vernal pools, serpentine/volcanic soils, etc.) and plant communities existing within the Study Areas.

While use of the CRPR inventory does not eliminate the need for an in-season botanical survey, it can, when used in conjunction with other information, provide a very good indication of the suitability of a site as habitat for sensitive plant species. The CNDDB database consists of mapped overlays of all known populations of sensitive plants and wildlife. The database is continually updated with new sensitive species population data.

Rare, threatened, and endangered plants are not necessarily limited to those species which have been "listed" by state and federal agencies but should include any species that, based on all available data, is rare, threatened, and/or endangered under the following definitions:

A species, subspecies, or variety of plant is **"endangered"** when the prospects of its survival and reproduction are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, over-exploitation, predation, competition, or disease. A plant is **"threatened"** when it is likely to become endangered in the foreseeable future in the absence of protection measures. A plant is **"rare"** when, although not presently threatened with extinction, the species, subspecies, or variety is found in such small numbers throughout its range that it may be endangered if its habitat continues to deteriorate.

Rare natural communities are those communities that are of highly limited distribution. These communities may or may not contain rare, threatened, or endangered species. The most current version of the California Natural Diversity Database's List of California Terrestrial Natural Communities was used as a guide to the names and status of communities.

The rare plants (native, vascular and non-vascular) and animals assessed are of limited abundance in California, with known occurrence or distribution in Lake County, and were derived from the following lists:

- Federal listed or threatened or endangered plants or species of concern (FT, FE, FSC)
- California State listed or rare, threatened or endangered plants or species of concern (SR, ST, SE, SP, SSC)
- Board of Forestry Sensitive (BFS)
- California Department of Fish and Wildlife (CDFW) Status animals: Fully Protected, Species of Special Concern and Watch List (FP, SSC, WL)
- California Native Plant Society Rare Plant Rank (CRPR) list 1A species (plants presumed extirpated in California, and either rare or extinct elsewhere)
- California Native Plant Society Rare Plant Rank (CRPR) list 1B species (plants rare, threatened or endangered in California and elsewhere)
- California Native Plant Society Rare Plant Rank (CRPR) list 2A species (plants presumed extirpated in California but more common elsewhere)
- California Native Plant Society Rare Plant Rank (CRPR) list 2B species (plants rare, threatened, or endangered in California but more common elsewhere)
- California Native Plant Society Rare Plant Rank (CRPR) list 3 (plants which more information is needed- a review list)
- California Native Plant Society Rare Plant Rank (CRPR) list 4 (plants of limited distribution – a watch list)

4.3 Database Assessment Results

For the identification of species and habitats, a scoping was performed that extended to the nine quads surrounding and including the Lucerne 7.5-minute USGS Quadrangle. The distance is chosen to account for the possible distribution of animal and plant species and habitats. In addition, a 1.3-mile radius scoping area was completed for the identification of northern spotted owl (*Strix occidentalis caurina*, NSO) Activity Centers. No spotted owl territories (Activity Centers) are located within the 1.3-mile buffer.

Biological communities present within the Study Areas were classified based on existing plant community descriptions described by Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986) or the Manual of California Vegetation, Online Edition (MCV2 Alliances, CNPS 2019b). In some cases it may be necessary to identify variants of community types or to describe non-vegetated areas that are not described in the literature. Biological communities were classified as sensitive or non-sensitive as defined by CEQA and other applicable laws and regulations.

The currently accepted vegetation classification system for the state that is standardly used by CDFW, CNPS, and other state and federal agencies, organizations, and consultants for survey and planning purposes is the *Manual of California Vegetation* (MCV; Sawyer, Keeler-Wolf, and Evens 2009). Unlike Holland, this vegetation classification system is based on the standard National Vegetation Classification System (NVCS) and includes alliances (a floristically defined vegetation unit identified by its dominant and/or characteristic species) and associations (the finer level of classification beneath alliance).

Although the CNDDB still maintains records of some of the old Holland vegetation types, these types are no longer the accepted standard, and the CDFW Vegetation Classification and Mapping Program (VegCAMP) has published more recent vegetation lists for the state (October 2018) based on a standardized vegetation classification system that is currently being developed for California (and which is consistent with the MCV classification system). Global and state rarity rankings have been assigned for various types on the recent VegCAMP lists.

To characterize existing biological conditions and identify potential impacts to sensitive habitats resulting from implementation of the proposed cannabis expansion project, Jacobszoon & Associates Inc. biologist Aaron Unroe conducted a biological assessment of the Study Areas on September 30, 2019, consisting of approximately four (4) hours. The Study Areas were assessed to document: (1) the on-site plant communities, (2) existing conditions and their ability to provide suitable habitat for any special-status plant or wildlife species, and (3) if sensitive biological communities (e.g. wetlands, vernal pools) are present. Plant species observed during the site assessment were recorded and are listed in Appendix B.

Plants listed in Appendix B were identified using *The Jepson Manual: Vascular Plants of California 2nd Edition* (Baldwin et al. 2012) to the taxonomic level necessary to determine rarity. The names provided in this biological assessment report follow *The Jepson Flora Project* (JFP 2019).

4.4 Biological Communities

4.4.1 Non-sensitive Biological Communities

Non-sensitive biological communities are those communities that are not afforded special protection under CEQA, and other Federal, State, and local laws, regulations, and ordinances. These communities may, however, provide suitable habitat for some special-status plant or wildlife species, and are described in Section 5.1 below.

4.4.2 Sensitive Biological Communities

Sensitive biological communities are defined as those communities that may be afforded special consideration under CEQA and other applicable Federal, State, and local laws, regulations and ordinances. Applicable laws and ordinances are discussed above in Section 2.0. Special methods used to identify sensitive biological communities are discussed below.

Sensitive Natural Communities

In addition to surveying for the presence of sensitive aquatic resources (e.g. watercourses, vernal pools, etc.), Jacobszoon & Associates, Inc. biologists evaluated the Study Areas for presence of sensitive terrestrial natural communities (e.g. coastal and valley freshwater marsh). Sources for assessing sensitive terrestrial or aquatic natural communities include *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986), *List of Vegetation Alliances* (CDFW 2010), and *A Manual of California Vegetation* (CNPS 2019b).

4.5 Special-status Species

Prior to the site visit, databases (listed above) were accessed to determine whether special-status species (CNDDB) were documented within five miles of the Study Areas. During the site visit, existing habitat conditions were evaluated and used to assess the potential for presence of special-status species. The potential for each special-status species to occur in the Study Areas was then evaluated according to the following criteria:

- No Potential. Habitat on and adjacent to the Study Areas is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the Study Areas is unsuitable or very poor quality. The species is not likely to be found on-site.

- Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the Study Areas is unsuitable. The species has a moderate probability of being found on-site.
- High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the Study Areas is highly suitable. The species has a high probability of being found on-site.
- Present. Species is observed on the site or has been recorded (i.e. CNDDB) on-site recently.

The site assessment is intended to identify the presence or absence of suitable habitat for special-status species known to occur within the Study Areas. The site visit does not constitute a full season protocol-level survey and is not intended to determine the actual presence or absence of a species. If a special-status species is observed during the site visit, its presence will be recorded and discussed. All plant and wildlife species observed were recorded and are included in Appendix B.

Critical habitat is a term defined by the ESA as a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The ESA requires federal agencies to consult with the USFWS to conserve listed species on their lands and to ensure that any activities or projects they fund, authorize, or carry out will not jeopardize the survival of a threatened or endangered species. Federal agencies must also ensure that their activities or projects do not adversely modify critical habitat to the point that it will no longer aid in the species' recovery. In many cases, this level of protection is similar to that already provided to species by the ESA jeopardy standard. However, areas that are currently unoccupied by the species, but which are needed for the species' recovery, are protected by the prohibition against adverse modification of critical habitat.

Section 5.0: Field Survey Results

5.1 Biological Communities

Biological communities within the Study Areas include primarily wild oat grassland (*Avena barbata, fatua* – MCV2 Alliance) with some blue oak woodland (*Quercus douglasii* – MCV2 Alliance) and annual dogtail grassland (*Cynosurus echinatus* – MCV2 Alliance) habitats intermixed. For classification purposes, *Quercus douglasii* – MCV2 Alliance is considered part of the cismontane woodland (Holland 1986) classification. Additionally, *Avena barbata, fatua* – MCV2 Alliance and *Cynosurus echinatus* – MCV2 Alliance habitats are considered part of the valley and foothill grassland (Holland 1986) classification. The dominant overstory canopy within the Study Areas is primarily comprised of blue oak (*Quercus douglasii*) and California black oak (*Quercus kelloggii*), with several juvenile interior live oaks (*Quercus wislizeni*), California buckeye (Aesculus californica) and California bay (*Umbellularia californica*) present in the midstory canopy.

5.1.1 Non-sensitive Biological Communities

Avena (*barbata*, *fatua*) herbaceous semi-natural – MCV2 Alliance, Non-native grassland (Holland), *Avena fatua* herbaceous alliance (NVCS (2009)), Non-native/ornamental grass (CalVeg), Valley grassland (Munz)

Avena barbata and/or *Avena fatua* is dominant or co-dominant in the herbaceous layer. Emergent trees and shrubs may be present at low cover. Herbs < 1.2m; cover is open to continuous. Membership rules: *Avena fatua* > 50% relative cover, and native herbs relatively low in cover in the herbaceous layer (Keeler-Wolf and Evens 2006). *Avena ssp.* > 50% relative cover, and native herbs < 10% relative cover in the herbaceous layer (Evens and Kentner 2006, Klein et al. 2007). *Avena ssp.* >75% relative cover; other non-native or native plants < 5% absolute cover, if present, in the herbaceous layer (Evens and San 2004).

Cynosurus echinatus herbaceous semi-natural – MCV2 Alliance, Non-native grassland (Holland), *Bromus* (*diandrus*, *hordeaceus*, *madritensis*) herbaceous alliance, Non-native/ornamental grass (CalVeg), Valley grassland (Munz)

Cynosurus echinatus is dominant or co-dominant with other non-natives in the herbaceous layer. Emergent trees and shrubs may be present at low cover. Herbs < 50cm; cover is intermittent to continuous. Found on all slopes and aspects. Membership rules: *Cynosurus echinatus* or *Arrhenatherum elatius* > 50% relative cover in the herbaceous layer (Jimerson et al. 2000).

Quercus douglasii – MCV2 Alliance, *Quercus douglasii* woodland alliance (NVCS (2009)), Blue oak (CalVeg), Foothill woodland (Munz).

Quercus douglasii or *Quercus x eplingii* is dominant or co-dominant in the tree canopy with *Aesculus californica, Juniperus californica, Pinus sabiniana, Quercus agrifolia, Quercus lobata* and *Quercus wislizeni.* Vegetation layers: Trees < 20m; with conifers 35m; canopy is intermittent to continuous, or savanna-like; it may be one or two tiered. Shrub layer is sparse to intermittent. Herbaceous layer is sparse or grassy, and forbs are present seasonally. Habitats: Valley bottoms, foothills, rocky outcrops. Soils are shallow, low in fertility, moderately to excessively drained with extensive rock fragments. Membership rules: *Quercus douglasii* > 50% relative cover in the tree canopy; other hardwoods or conifers may be < 30% relative cover in the tree canopy (Allen et al. 1989, Evens et al. 2004).

5.1.2 Sensitive Biological Communities

Water is a limited resource in Lake County due to the Mediterranean climate and prolific usage, particularly in the summer months. As a result, creeks and streams which flow for more than a few months due to seasonal rains support riparian vegetation, and thereby contribute a unique habitat on the landscape. Two (2) Class III watercourses follow the drainages and topography through the parcel; however, during the biological assessment the watercourses did not provide suitable aquatic habitat.

The aforementioned watercourses are considered sensitive biological communities which provide rare (if seasonal) aquatic habitat within the landscape and shall be protected from development as per CalCannabis and State Water Resource Control Board regulations. It is the understanding of Jacobszoon and Associates, Inc. that work is not proposed within or adjacent to any of the watercourses and that there is no potential to impact the watercourses due to the existing or proposed cannabis cultivation sites.

5.2 Special-status Species

5.2.1 Special-status Plant Species

Upon review of the resource databases listed in Section 4.2, sixty-four (64) special-status plant species have been documented within the vicinity of the Study Areas. Additionally, seven (7) terrestrial and aquatic communities have been recorded within the vicinity of the Study Areas. Please refer to Appendix A for a table of all special-status plant species and communities which occur within a nine-quad search surrounding the Study Areas, as well as additional discussion of the potential for each species or community to occur within the Study Areas. Special-status species (CNDDB) documented within five miles of the Study Areas are depicted (Appendix D: Figure 3 CNDDB Map). Of the sixty-four (64) special-status plant species within the vicinity, five (5) special-status plant species have a moderate to high potential to occur within the Study Areas. Of the seven (7) terrestrial and aquatic communities, none were present within the Study Areas. The remaining sixty (60) special-status plant species documented within the vicinity of the Study Areas do not have the potential to occur due to one or more of the following reasons:

- Hydrologic conditions (e.g., vernal pools, riverine) necessary to support the special-status plant species are not present within the Study Areas;
- Edaphic conditions (soils, e.g., rocky outcrops, serpentinite) necessary to support the special-status plant species are not present within the Study Areas;
- Topographic conditions (e.g., montane) necessary to support the special-status plant species are not present within the Study Areas;
- Unique pH conditions (e.g., alkali scalds, acidic bogs) necessary to support the special-status plant species are not present within the Study Areas;
- Associated vegetation communities (e.g., interior chaparral, tidal marsh) necessary to support the special-status plant species are not present within the Study Areas;
- The Study Areas are geographically isolated (e.g., outside of required elevations, coastal environment) from the documented range of the special-status plant species;
- Ecological conditions (last recorded observations, human-made or natural disturbance) have encroached on species to a point to cause presumed extinction.

The five (5) special-status plant species with potential to occur within the Study Areas are described below.

bent-flowered fiddleneck (*Amsinckia lunaris*). Rare Plant Species Rank 1B.2. Cismontane woodland, valley and foothill grassland, coastal bluff scrub. Elevation ranges from 10 to 2609 feet (3 to 795 meters). An annual herb, the blooming period is from Mar-Jun.

Mendocino tarplant (*Hemizonia congesta* ssp. *calyculata*). Rare Plant Species Rank 4.3. Cismontane woodland, valley and foothill grassland, open woods and forests, sometimes on serpentine. *H. congesta ssp. calyculata* has a serpentine affinity (1.5, weak indicator). Elevation ranges from 738 to 4593 feet (225 to 1400 meters). An annual herb, the blooming period is from Jul-Nov.

bristly leptosiphon (*Leptosiphon acicularis*). Rare Plant Species Rank 4.2. Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland. Elevation ranges from 181 to 4922 feet (55 to 1500 meters). An annual herb, the blooming period is from Apr-Jul.

Mt. Diablo cottonweed (*Micropus amphibolus*). Rare Plant Species Rank 3.2. Valley and foothill grassland, cismontane woodland, chaparral, broadleaved upland forest, often on bare, grassy, or rocky slopes. Elevation ranges from 148 to 2707 feet (45 to 825 meters). An annual herb, the blooming period is from Mar-May.

beaked tracyina (*Tracyina rostrata*). Rare Plant Species Rank 1B.2. Cismontane woodland, valley and foothill grassland, chaparral, often observed in open grassy meadows commonly within oak woodland and grassland habitats. Elevation ranges from 492 to 2609 feet (150 to 795 meters). An annual herb, the blooming period is from May-Jun.

5.2.2 Special-status Animal Species

A total of forty-eight (48) special-status wildlife species have been documented within the vicinity of the Study Areas. Please refer to Appendix A for a table of all special-status wildlife species which occur within the vicinity of the Study Areas and discussion of the potential for each species to occur within the Study Areas. Special-status species documented within the vicinity are depicted (Appendix D: Figure 3 CNDDB Map). Of the forty-eight (48) special-status wildlife species within the vicinity of the Study Areas, ten (10) special-status wildlife species recorded have a moderate to high potential to occur within the Study Areas. The remaining thirty-seven (38) special-status wildlife species documented within the vicinity of the Study Areas do not have the potential to occur due to one or more of the following reasons:

- Aquatic Habitats (e.g., streams, rivers, vernal pools) necessary to support special-status wildlife species are not present within the Study Areas;
- Vegetation Habitats (e.g., forested area, riparian, grassland) that provide nesting and/or foraging resources necessary to support special-status wildlife species are not present within the Study Areas;

- Physical Structures and Vegetation (e.g., caves, old-growth trees) that provide nesting, cover, and/or foraging habitat necessary to support special-status wildlife species are not present within the Study Areas;
- Host Plants (e.g., *Cirsium sp.*) that provide larval and nectar resources necessary to support special-status wildlife species are not present within the Study Areas;
- Historic and Contemporary Disturbance (e.g., cattle grazing, agriculture) deter the presence of the special-status wildlife species from occupying the Study Areas;
- The Study Areas are outside the documented nesting range of special-status wildlife species.

The ten (10) special-status wildlife species with potential to occur within the Study Areas are described below.

golden eagle (*Aquila chrysaetos*). BLM Sensitive, CDF Sensitive, CDFW Fully Protected, Watch List, IUCN Least Concern, USFWS Bird of Conservation Concern. *A. chrysaetos* inhabit rolling foothills, mountain areas, sage-juniper flats and desert. This species frequently nests in cliff-walled canyons and large trees in open areas. A carnivore that feeds primarily on small mammals (rabbits, ground squirrels etc.) sometimes includes snakes, juvenile ungulates and carrion.

great blue heron (*Ardea herodias*). CDF Sensitive, IUCN Least Concern. *A. herodias* are commonly found in shallow estuaries and fresh and saline emergent wetlands. Foraging areas include river and creek banks, ponds, lakes, and watercourses in mountainous areas. Diet consists primarily of aquatic invertebrates, frogs, snakes and fish (Cogswell 1977). This species often nests in colonies within a rookery tree.

white-tailed kite (*Elanus leucurus*). CDFW Species of Special Concern, CDFW Fully Protected, IUCN Least Concern. Often found in coastal, valley lowlands and agricultural areas, *E. leucurus* inhabit herbaceous and open stages of most habitats especially in cismontane California. This species' primary diet consists of small mammals (voles and other rodents), found in undisturbed, open grasslands, meadows, farmlands, and emergent wetlands (Waian et. al. 1970). Nests are often found in isolated, dense-topped trees.

prairie falcon (*Falco mexicanus*). CDFW Species of Special Concern, IUCN Least Concern, USFWS Bird of Conservation Concern. *F. mexicanus* breed in open country wherever they find bluffs and cliffs to nest on, including alpine habitat to about 11,000 feet. Breeding habitats include grasslands, shrubsteppe desert, areas of mixed shrubs and grasslands, or alpine tundra that supports abundant ground squirrel or pika (*Ochotona princeps*) populations. Winter habitat includes grasslands, sage scrub, dry-farmed wheat fields, irrigated cropland, and cattle feedlots. Their diet primarily consists of small mammals (ground squirrel, pika), mourning doves, horned larks, western meadowlarks, and European starlings.

black-crowned night heron (*Nycticorax nycticorax*). CDFW Species of Special Concern, IUCN Least Concern. *N. nycticorax* are common in wetlands across North America, including saltmarshes, freshwater marshes, swamps, streams, rivers, lakes, ponds, lagoons, tidal mudflats, canals, reservoirs, and wet agricultural fields. They require aquatic habitat for foraging and terrestrial vegetation for cover. They nest and roost in dense-foliaged trees and dense emergent wetlands. They are very common in large nesting colonies and feed along the margins of lacustrine, large riverine, and fresh and saline emergent habitats. They spend the winter in southern and coastal portions of their breeding range as well as across Mexico and Central America, where they use mangroves, marshes, swamps, lagoons, and flooded rice fields.

pallid bat (*Antrozous pallidus*). BLM Sensitive, CDFW Species of Special Concern, IUCN Least Concern, USFS Sensitive, WBWG High Priority. *A. pallidus* are found in deserts, grasslands, shrublands, woodlands, and forests. Most common in open, forages along river channels. Roosting sites include crevices in rocky outcrops and cliffs, caves, mines, trees and various human structures such as bridges, barns, and buildings (including occupied buildings). Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.

fringed myotis (*Myotis thysanodes*). BLM Sensitive, CDFW Species of Special Concern, IUCN Least Concern, USFS Sensitive, WBWG High Priority. *M. thysanodes* are widespread in California, occurring in a wide variety of habitats including pinyon-juniper, valley foothill hardwood and hardwood-conifer, generally found at 1300-2200m elevations (4000-7000ft) (Harris). They forage around streams, lakes, and ponds and their prey consists mainly of beetles and other insects. Typical roosting habitat includes caves, mine tunnels, rock crevices and old buildings.

Yuma myotis (*Myotis yumanensis*). BLM Sensitive, CDFW Species of Special Concern, IUCN Least Concern, USFS Sensitive, WBWG Low-Medium Priority. *M. yumanensis* commonly inhabits open forests and woodlands from British Columbia across the western U.S. and south into Baja and southern Mexico. This species will use a variety of lowland habitats from scrub to coniferous forest, always near slow-moving or standing water habitats. Foraging occurs almost exclusively over water, with distribution being closely tied to bodies of water. Typical roosting habitat are caves, mines, buildings, under bridges and in cliff and tree crevices. Maternity colonies are often in caves, mines, buildings and crevices.

American badger (*Taxidea taxus*). CDFW Species of Special Concern, IUCN Least Concern. *T. taxus* are most abundant in drier open stages of most shrub, forest and herbaceous habitats, with friable soils (Zeiner et al. 1990b). *T. taxus* dig burrows in the friable soils and frequently reuse old burrows. They prey on burrowing rodents, especially ground squirrels and pocket gophers, also on birds, insects, reptiles and carrion. Their diet shifts seasonally depending on the availability of prey. *T. taxus* are non-migratory and are found throughout most of California, except the northern North Coast area.

western pond turtle (*Emys marmorata*). BLM Sensitive, CDFW Species of Special Concern, IUCN Vulnerable, USFS Sensitive. *E. marmorata* are associated with permanent ponds, lakes, streams, stock ponds, marshes, seasonal wetlands, artificial areas including reservoirs or irrigation ditches, or permanent pools along intermittent streams in a wide variety of habitats. This species requires basking sites in the aquatic environment or upland, grassy openings with loose soil for nesting and overwintering. Nest sites can be found from 100-500 meters from aquatic habitat.

Section 6.0: Assessment Summary and Recommendations

Five (5) special-status plant species and eleven (11) special-status wildlife species have the potential to occur within the Study Areas based on present habitat. One (1) existing cannabis cultivation site and three (3) proposed cannabis cultivation sites exist within the wild oat grassland and blue oak woodland habitats (Appendix D: Figures 1 & 2, "Existing Cannabis Cultivation" and Study Area 1(A-C)). It is Jacobszoon and Associates, Inc.'s understanding that no tree removal is proposed; however, development of three (3) new cannabis cultivation areas (Study Area 1(A-C)) are proposed within the wild oat grassland (*Avena* (*barbata, fatua*) – MCV2 Alliance) habitat. Of the five (5) special-status plant species with potential to occur within the Study Areas, the biological assessment was conducted within one (1) of the blooming periods (*H. congesta* ssp. *calyculata*). The biological assessment was conducted outside of the remaining four (4) special-status plant species' blooming periods and it is recommended that if vegetation is proposed for removal (herbaceous, grass or trees) within the Study Areas, then pre-development botanical surveys shall be conducted during the blooming periods for the remining four (4) special-status plant species (between May and June).

Habitat within the Study Areas and parcels includes wild oat grassland (*Avena* (*barbata, fatua*) – MCV2 Alliance), annual dogtail grassland (*Cynosurus echinatus* – MCV2 Alliance) and blue oak woodland (*Quercus douglasii* – MCV2 Alliance). These habitat types provide suitable nesting and foraging avian habitat as well as foraging, roosting (bat) and denning mammalian (*T. taxus*) habitat. If vegetation removal, including grass/herbaceous vegetation or trees, grading or excavation of any kind is proposed within the grassland or oak woodland habitat, then it is recommended that nesting, roosting and denning surveys are conducted to CDFW protocol standards prior to disturbance for avian and mammalian species (reference Section *6.2.2 Special-status Wildlife Species* for CDFW American badger survey protocols).

Additionally, potential western pond turtle (*Emys marmorata*) habitat exists within the grassland areas; however, it is considered sub-optimal for this species due to the steep topography and distance from the nearest waterbody (Clear Lake). While it is considered sub-optimal, it is recommended that if any groundbreaking[1] disturbance is proposed within the grassland habitats (i.e. vegetation removal, grading etc.), pre-development western pond turtle surveys are performed as per CDFW's survey protocol (reference Section *6.2.2 Special-status Wildlife Species* for CDFW western pond turtle survey protocols).

The two (2) watercourse crossings (Study Area 2 "A & B") likely provide suitable (seasonal) amphibian habitat while water is present. No water was present within the watercourses and no amphibians were observed during the biological assessment. If removal, replacement, or development of the watercourse crossings are proposed, it is recommended that construction be conducted while the channels are dry. If this is not an option, then it is recommended that a coffer dam is installed to allow water to be pumped out of the active channel where construction is to take place and returned downstream outside of the work area. Additionally, if construction is proposed within the channels while water is present, it is recommended that a qualified biologist knowledgeable with all life stages of amphibian species conduct a visual encounter survey prior to construction. There are no further recommendations.

6.1 Biological Communities

Biological communities within the Study Areas include wild oat grassland (*Avena* (*barbata, fatua*) – MCV2 Alliance), annual dogtail grassland (*Cynosurus echinatus* – MCV2 Alliance), and blue oak woodland (*Quercus douglasii* – MCV2 Alliance) habitat. The tributary watercourses (Study Area 2) provide marginal aquatic habitat for amphibian species while water is present. Additionally, one (1) watercourse crossing (Study Area 2 "B") provides suitable ruderal habitat[2] (*Rubus armeniacus*) that could be utilized for nesting habitat by avian species of special concern.

6.2 Special-status Species

Five (5) special-status plant species and ten (10) special-status wildlife species have a moderate or high potential to occur within the Study Areas.

[1] The term "groundbreaking" encompasses vegetation removal, grading, or excavation.

[2] Ruderal biological communities include vegetation generally composed of weedy, non-native species which are able to grow in a variety of environmental conditions and have high reproductive vigor. Species typically found in ruderal habitats include, but are not limited to Harding grass (*Phalaris aquatica*), Himalayan blackberry (*Rubus armeniacus*), coyote brush (*Baccharis pilularis*) etc.

6.2.1 Special-status Plant Species

Five (5) special-status plant species have a moderate or high potential to occur within the Study Areas and include: bent-flowered fiddleneck (*Amsinckia lunaris*), Mendocino tarplant (*Hemizonia congesta* ssp. *calyculata*), bristly leptosiphon (*Leptosiphon acicularis*), Mt. Diablo cottonweed (*Micropus amphibolus*), and beaked tracyina (*Tracyina rostrata*). While these special-status species have the moderate potential to occur within the Study Areas based on available habitat, none were observed during the biological site assessment.

6.2.2 Special-status Wildlife Species

Ten (10) special-status wildlife species have a moderate or high potential to occur within the Study Areas and include: golden eagle (*Aquila chrysaetos*), great blue heron (*Ardea herodias*), white-tailed kite (*Elanus leucurus*), prairie falcon (*Falco mexicanus*), black-crowned night heron (*Nycticorax nycticorax*), pallid bat (*Antrozous pallidus*), fringed myotis (*Myotis thysanodes*), Yuma myotis (*Myotis yumanensis*), American badger (*Taxidea taxus*) and western pond turtle (*Emys marmorata*). While these special-status species have the potential to occur within the Study Areas, none were observed during the biological site assessment.

<u>Amphibians</u>

Development (replacement of existing culverts, including excavation, vegetation removal (*R. armeniacus*) etc.) within or adjacent to the tributary watercourses (Appendix D: Figures 1 & 2, Study Area 2 “A & B”) has the potential to significantly impact amphibian species that may rely on the aquatic habitat while water is present. All development within or adjacent to these watercourses shall adhere to mandatory watercourse setbacks set forth by the State Water Resources Control Board. Any work within or with the ability to impact any water body should be conducted in compliance with CDFW’s Lake and Streambed Alteration Agreement. If development is proposed, it is recommended that pre-construction surveys shall be conducted according to CDFW protocol. Additionally, any work that is to take place within any watercourses should be conducted when the channel is dry. If this is not an option, and a coffer dam is used, surveys for amphibian species of concern shall be conducted to CDFW survey protocols. If no work is proposed within or adjacent to the watercourses, then no further recommendations.

Avifauna

Development within the Study Areas has the potential to significantly impact wildlife species, including nesting avian species if present. The existing vegetation within the Study Areas provides potential nesting and foraging habitat for birds; however, there are no known occurrences of special-status avian species that overlap with the Study Areas (Appendix D: Figure 3 CNDDB Map). Groundbreaking activities (vegetation/tree removal) within the Study Areas during avian breeding periods could significantly impact nesting bird species. Additionally, activities within the Study Areas may result in the indirect visual and acoustic disturbance to avian species and have the potential to result in nest abandonment and incidental take[3]. Any development activities which occur between March 1st and August 31st of any year, require pre-development nesting bird surveys prior to the commencement of any groundbreaking activities.

Mammals

Development within the Study Areas have the potential to significantly impact mammalian wildlife species, if present. If trees are not proposed to be removed, then immediate impact to any of the above listed mammal species would be reduced. As mentioned for avifauna, an impact could also be indirect via the form of visual or acoustic disturbance. Prior to any groundbreaking activities within the Study Areas or if trees are to be removed, it is recommended that surveys for special-status mammalian species be conducted prior to construction following CDFW survey protocols.

CDFW American badger (*Taxidea Taxus*) Survey Protocol: No less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities, CDFW will conduct a survey to determine if American badger den sites are present at the site. If dens are found, they will be monitored for badger activity. If CDFW determines that dens may be active, the entrances of the dens will be blocked with soil, sticks, and debris for three to five days to discourage the use of these dens prior to project disturbance activities. The den entrances will be blocked to an incrementally greater degree over the 3 to 5-day period. After a CDFW-qualified biologist determines the den sites are no longer active, the dens will be hand-excavated with a shovel to prevent re-use during construction. No disturbance of active dens will take place when cubs may be present and dependent on parental care, as determined by a CDFW-qualified biologist. (CDFW's Conservation Measures for Biological Resources That May Be Affected by Program-level Actions – Appendix I).

[3] "Take" includes all activities listed in Section 86 of the Fish and Game Code, as well as collecting, handling, marking, manipulating or conducting other procedures on wildlife, whether wildlife are released, or retained in possession (https://www.wildlife.ca.gov/Licensing/Scientific-Collecting).

Reptiles

Development within the grassland habitats (Study Area 1) have the potential to significantly impact reptilian wildlife species, if present. As mentioned for avifauna, an impact could also be indirect via the form of visual or acoustic disturbance. Prior to any groundbreaking activities within the Study Areas, it is recommended that surveys for special-status reptilian species (*Emys marmorata*) be conducted prior to construction following CDFW survey protocols.

CDFW western pond turtle (*Emys marmorata*) survey protocol: Pre-construction surveys for western pond turtles (WPTs) shall be conducted by a qualified biologist 14 days before and 24 hours before the start of ground-disturbing activities where suitable habitat exists (e.g., along riparian areas and freshwater emergent wetlands). If WPT or their nests are observed during pre-construction surveys, a qualified biologist shall be on-site to monitor construction in suitable WPT habitat. WPT found within the construction area shall be allowed to leave of its own volition or it will be captured by a qualified biologist and relocated out of harm's way to the nearest suitable habitat immediately upstream or downstream from the Project site. If WPT nests are identified in the work area during pre-construction surveys, a 300-foot no disturbance buffer shall be established between the nest and any areas of potential disturbance. Buffers shall be clearly marked with temporary fencing. Construction will not be allowed to commence in the exclusion are until hatchlings have emerged from the nest or the nest is deemed inactive by a qualified biologist. (CDFW's Conservation Measures for Biological Resources That May Be Affected by Program-level Actions – Appendix I).

CWHR

CWHR Predicted Habitat Suitability is a dataset accessed through CNDDB BIOS Commercial/Spotted Owl Viewer that represents areas of suitable habitat within the species ranges based on California Wildlife Habitat Relationships (CWHR). Habitat suitability ranks of Low (less than 0.34), Medium (0.34-0.66) and High (greater than 0.66) suitability are based on the mean expert opinion suitability value for each habitat type for breeding, foraging, and cover (CDFW 2019).

Examination of the CWHR dataset was applied when: 1) the data is available for the species of concern, and 2) when there is a moderate to high potential for an animal to occur on or within 100 feet of the Study Area. As with all models, these maps are not perfect and do not predict the occurrence of an organism. CWHR examines whether the areas being examined in the biological assessment is habitat which *may* support a species of special concern. This information not only informs the landowner of what may occur on their property, but also assists the biologist when conducting a survey.

6.3 Wildlife Corridors

No change to foraging or wintering habitat for migratory birds is expected as a result of the existing or proposed cannabis cultivation sites. Additionally, no significant impacts to migratory corridors for amphibian, aquatic, avian, mammalian, or reptilian species is expected as a result of the existing or proposed cannabis cultivation sites.

6.4 Critical Habitat

The Study Areas do not contain any critical habitat for Federal or State-listed species.

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Appendix A: Table of Potential for Special-Status Plants and Wildlife within the Study Areas

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Amphibians				
foothill yellow-legged frog *Rana boylii*	SCT BLM: S CDFW: SSC IUCN: NT USFS: S	*R. boylii* occupy a diverse range of ephemeral and permanent streams, rivers, and adjacent moist terrestrial habitats. Occupied streams are often partly shaded, low gradient, and dominated by coarse, unconsolidated rocky substrates. Adults breed and tadpoles develop in slow water velocity habitats. Dispersing juvenile and adult frogs will seek refugia in Class II streams pre-and-post breeding, opposite of salmonids.	**Unlikely.** According to CWHR Predicted Habitat Suitability[4], the Study Areas fall within Low (0.33) habitat suitability for this species. While several watercourses traverse the property that this species could utilize, they flow into Clear Lake which is not considered suitable habitat for this species. It is considered very unlikely that *R. boylii* would be able to utilize habitat within the Study Areas.	**Not Present.** If construction is proposed within any tributary watercourse (replacement of culverts, excavation, etc.), it is recommended that pre-development amphibian surveys are conducted. There are no further recommendations for this species.
California red-legged frog *Rana draytonii*	FT CDFW: SSC IUCN: VU	California red-legged frogs (CRLF) primarily inhabit permanent or nearly permanent water sources (quiet streams, marshes, and ponds) containing shorelines with extensive vegetation. Breeding tends to occur primarily in ponds, less likely in streams, and happens from November to April. This ranid frog will also use upland habitats outside of the breeding season and may be discovered under logs, rocks, and other debris during wet conditions.	**Unlikely.** According to CWHR Predicted Habitat Suitability, the Study Areas are not mapped; however, habitat adjacent to the Study Areas (including Clear Lake) falls within Medium (0.66) habitat suitability for this species. Habitat within the Study Areas is considered sub-optimal for this species. There are no ponds or permanent water sources that flow through the property.	**Not Present.** There are no further recommendations for this species.

[4] CWHR Predicted Habitat Suitability is a dataset that represents areas of suitable habitat within the species ranges based on California Wildlife Habitat Relationships (CWHR 2016). Habitat suitability ranks of Low (less than 0.34), Medium (0.34-0.66) and High (greater than 0.66) suitability are based on the mean expert opinion suitability value for each habitat type for breeding, foraging, and cover. (Data obtained through CNDDB in BIOS)

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
red-bellied newt *Taricha rivularis*	CDFW: SSC IUCN: LC	*T. rivularis* inhabits coastal forests, typically in redwood (*Sequoia sempervirens*) forest habitat although also found in other forest types (hardwood etc.). Adults are terrestrial and fossorial. Transformed juveniles leave aquatic environments and go into hiding in underground shelters, often until ready to reproduce. Breeding occurs in streams often with relatively strong flows.	**No Potential.** According to CWHR Predicted Habitat Suitability, the Study Areas are not mapped indicating suitable habitat for this species does not exist within the Study Areas. Suitable habitat for this species does not exist within the Study Areas.	**Not Present.** There are no further recommendations for this species.
Avifauna				
tricolored blackbird *Agelaius tricolor*	SCE BLM: S CDFW: SSC IUCN: EN NABCI: RWL USFWS: BCC	*A. tricolor* breed and forage in a variety of habitats including salt marshes, moist grasslands, freshwater marshes, bay-shore habitats, riparian forests and oak savannahs. *A. tricolor* use dense riparian vegetation such as Himalayan blackberry (*Rubus armeniacus*) for nesting and forage in cultivated fields, wetlands, and feedlots associated with dairy farms.	**Unlikely.** According to CWHR Predicted Habitat Suitability, portions of the Study Areas fall within Low (0.33) habitat suitability for this species. Some nesting habitat is marginal for this species within Study Area 2 adjacent to the Class III watercourses.	**Not Present.** If Himalayan blackberry (*Rubus armeniacus*) adjacent to the watercourse crossing (Study Area 2B) is proposed during nesting bird season (March 1 – August 31) it is recommended that pre-construction nesting surveys are conducted. No further recommendations for this species.
golden eagle *Aquila chrysaetos*	BLM: S CDF: S CDFW: FP, WL IUCN: LC USFWS: BCC	*A. chrysaetos* inhabit rolling foothills, mountain areas, sage-juniper flats and desert. This species frequently nests in cliff-walled canyons and large trees in open areas. A carnivore that feeds primarily on small mammals (rabbits, ground squirrels etc.) sometimes includes snakes, juvenile ungulates and carrion.	**Moderate Potential.** According to CWHR Predicted Habitat Suitability, the Study Areas fall within Medium (0.55) to High (0.77) habitat suitability for this species. Foraging habitat exists; however, nesting/roosting habitat does not exist within the Study Areas.	**Not Observed.** As no nesting/roosting habitat exists within the Study Areas there are no further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
great egret *Ardea alba*	CDF: S IUCN: LC	*A. alba* requires groves of trees suitable for nesting and roosting, relatively isolated from human activities, near aquatic foraging areas. Prey on small fish, aquatic insects, crabs, frogs, etc. Prefer to forage in shallow, relatively still waters of estuaries, lakes, slow moving watercourses, salt ponds, or mud flats. Colonial nesters that build groups of platform nests in large trees or snags, usually near a feeding area. Great egrets are highly dependent upon wetland habitats and riparian areas. The great egret requires forested areas for nesting and roosting and aquatic habitat for foraging. Night roosting and nesting occurs in trees; day roosting occurs in feeding habitat. Typical feeding habitats include fresh and saline emergent wetlands, the edges of estuaries, lakes and slow-moving rivers, mudflats and salt ponds and irrigated croplands and pastures. The method of hunting is similar to the great blue heron--standing motionless or stalking slowing then rapidly striking their prey is customary.	**Unlikely.** According to CWHR Predicted Habitat Suitability, the Study Areas are not mapped indicating suitable habitat for this species does not exist within the Study Areas. Potential foraging habitat exists adjacent to the parcels (Clear Lake); however, no foraging or nesting habitat exists within the Study Areas.	**Not Present.** No further recommendations for this species.
great blue heron *Ardea herodias*	CDF: S IUCN: LC	*A. herodias* are commonly found in shallow estuaries and fresh and saline emergent wetlands. Foraging areas include river and creek banks, ponds, lakes, and watercourses in mountainous areas. Diet consists primarily of aquatic invertebrates, frogs, snakes and fish (Cogswell 1977). This species often nests in colonies within a rookery tree.	**Moderate Potential.** According to CWHR Predicted Habitat Suitability, the Study Areas fall within a range of Low (0.22) to High (0.77) habitat suitability for this species. No nesting habitat (rookery trees) for this species were observed within the Study Areas; however, potential foraging habitat exists within Clear Lake adjacent to the parcels.	**Not Observed.** No nesting and roosting habitat (rookery trees) were observed during the biological assessment. Neither the pre-existing cultivation areas nor the proposed cannabis cultivation sites (Study Area 1) provide suitable habitat for this species. No further recommendations.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Bell's sage sparrow *Artemisiospiza belli belli*	CDFW: WL USFWS: BCC	*A. belli belli* inhabit coastal sagebrush, chaparral often dominated by chamise and/or California sagebrush (Johnson and Marten 1992), and other open, scrubby habitats. In chaparral *A. belli belli* tend toward younger, less dense stands, becoming less common in older, taller stands. Nest sites are often found within shrubs, bunchgrasses, and occasionally on the ground under shrubs including California sagebrush, brittlebush, white sage, black sage, California buckwheat, bush mallow, chamise, cholla, and willow. This species is an opportunistic feeder, eating grains and insects from a variety of habitats.	**Unlikely.** According to CWHR Predicted Habitat Suitability, the Study Areas are not mapped indicating that this species is not often found within the region. The closest recorded CWHR is approximately 0.6 miles northeast of the Study Areas. Shrubby/chaparral habitat for this species does not exist within the Study Areas.	**Not Present.** No further recommendations for this species.
cackling goose *Branta hutchinsii leucopareia*	CDFW: SSC	*B. hutchinsii leucopareia* winters on lakes and inland prairies. Foraging occurs on natural pasture or that cultivated to grain; loafs on lakes, reservoirs and ponds. This species is found within natural/artificial standing waters and valley and foothill grasslands.	**No Potential.** According to CWHR Predicted Habitat Suitability, the Study Areas are not mapped indicating suitable habitat for this species does not exist within the Study Areas. Habitat for this species does not exist within the Study Areas.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
western yellow-billed cuckoo *Coccyzus americanus occidentalis*	FT, SE BLM: S NABCI: RWL USFS: S USFWS: BCC	*C. americanus occidentalis* use wooded habitat with dense cover and water nearby, including woodlands with low, scrubby vegetation, overgrown orchards, abandoned farmland, and dense thickets along streams and marshes. This species make their nests along horizontal branches or the fork of a tree or large shrub, often between 3 to 90 feet (1 to 28 meters). Trees are often oak (*Quercus* sp.), beech, hawthorn (*Crataegus* sp.) and ash, often with lower story of blackberry, nettles or wild grapes. A generalist feeder, typical forage includes primarily of caterpillars, webworms and moth larvae but also include beetles, ants, spiders, sometimes small amphibians (frogs) and reptiles (lizards) and some fruits and seeds.	**No Potential.** According to CWHR Predicted Habitat Suitability, the Study Areas are not mapped indicating that this species is not often found within the region. Habitat for this species does not exist within the Study Areas.	**Not Present.** No further recommendations for this species.
snowy egret *Egretta thula*	CDFW: SSC IUCN: LC	The snowy egret is widespread in California along shores of coastal estuaries, fresh and saline emergent wetlands, ponds, slow-moving rivers, irrigation ditches, and wet fields. Snowy egrets nest in colonies on thick vegetation in isolate places – such as barrier islands, dredge-spoil islands, salt marsh islands, swamps, and marshes. They often change location from year to year. During the breeding season they feed in estuaries, salt marshes, tidal channels, shallow bays, and mangroves. They roost in dense, emergent vegetation and in trees near water. They winter in mangroves, saltwater lagoons, freshwater swamps, grassy ponds, and temporary pools. Snowy egrets forage on beaches, shallow reefs and wet fields.	**Unlikely.** According to CWHR Predicted Habitat Suitability, the Study Areas are not mapped indicating suitable habitat for this species does not exist within the Study Areas. No nesting habitat (rookery trees) for this species was observed within the Study Areas; however, potential foraging habitat exists within Clear Lake adjacent to the parcels.	**Not Present.** No nesting and roosting habitat (rookery trees) were observed during the biological assessment. Neither the pre-existing cultivation areas nor the proposed cannabis cultivation sites (Study Area 1) provide suitable habitat for this species. No further recommendations.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
white-tailed kite *Elanus leucurus*	BLM: S CDFW: FP IUCN: LC	Often found in coastal, valley lowlands and agricultural areas, *E. leucurus* inhabit herbaceous and open stages of most habitats especially in cismontane California. This species' primary diet consists of small mammals (voles and other rodents), found in undisturbed, open grasslands, meadows, farmlands, and emergent wetlands (Waian et. al. 1970). Nests are often found in isolated, dense-topped trees.	**Moderate Potential.** According to CWHR Predicted Habitat Suitability, the Study Areas fall within a range of Low (0.33) to High (0.88) habitat suitability for this species. Suitable foraging habitat exists for this species to utilize within the Study Areas.	**Not Observed.** While suitable foraging habitat exists within the Study Areas, trees within the parcel are *Q. kelloggii* or *Q. douglasii* and are not isolated or dense-topped that this species prefers. Nesting habitat is considered sub-optimal. No trees are proposed for removal; therefore, there are no further recommendations for this species.
prairie falcon *Falco mexicanus*	CDFW: SSC IUCN: LC USFWS: BCC	Prairie falcons breed in open country wherever they find bluffs and cliffs to nest on, including alpine habitat to about 11,000 feet. Breeding habitats include grasslands, shrubsteppe desert, areas of mixed shrubs and grasslands, or alpine tundra that supports abundant ground squirrel or pika (*Ochotona princeps*) populations. Winter habitat includes grasslands, sage scrub, dry-farmed wheat fields, irrigated cropland, and cattle feedlots. Their diet primarily consists of small mammals (ground squirrel, pika), mourning doves, horned larks, western meadowlarks, and European starlings.	**High Potential.** According to CWHR Predicted Habitat Suitability, the Study Areas fall within High (0.77) habitat suitability for this species. Suitable habitat exists for this species to utilize within the Study Areas.	**Not Observed.** While suitable foraging habitat exists within the Study Areas, there are no bluffs or cliffs that this species could utilize within the parcels. Development of the grassland habitat for cannabis cultivation is not expected to have a significant impact on this species. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
bald eagle *Haliaeetus leucocephalus*	BLM: S CDF: S CDFW: FP IUCN: LC USFS: S USFWS: BCC	*H. leucocephalus* require large bodies of water or free-flowing rivers with abundant fish and adjacent snags, cliffs, or perches (Zeiner et al. 1990a). Perches are often high in large-limbed trees on snags, broken-topped trees, or on rocks near water. Nests are found in large, old-growth, or dominant live trees with open branches (Call 1978). Nest stands frequently have less than 40% canopy, with some foliage shading the nest, and are within a mile of a permanent water source. In the winter, they roost communally in dense, sheltered, remote conifer stands often within 10 to 12 miles from feeding areas. Although bald eagle populations are recovering in the western U.S., nesting bald eagles are still very rare in this region. Bald eagles are tolerant of human activity when feeding, and may congregate around fish processing plants, dumps, and below dams where fish concentrate. In winter, bald eagles can also be seen in dry, open uplands if there is access to open water for fishing.	**Unlikely.** According to CWHR Predicted Habitat Suitability the Study Areas fall within Low (0.33) habitat suitability for this species. Nesting habitat for this species does not exist within the Study Areas.	**Not Present.** Development of the grassland habitat for cannabis cultivation is not expected to have a significant impact on this species. No further recommendations for this species.
yellow-breasted chat *Icteria virens*	CDFW: SSC IUCN: LC	*I. virens* inhabit riparian thickets of willow and other brushy tangles near watercourses. Required habitat for this species is riparian forest, woodland, or scrub. Nests in low, dense riparian habitat often consisting of willow, blackberry, and wild grape within 10ft. of the ground. *I. virens* is a frugivore and insectivore, eating mostly insects gleaned from foliage.	**No Potential.** According to CWHR Predicted Habitat Suitability, the Study Areas are not mapped indicating suitable habitat for this species does not exist within the Study Areas. The Study Areas do not provide the necessary riparian thickets that this species requires.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
black-crowned night heron *Nycticorax nycticorax*	CDFW: SSC IUCN: LC	*N. nycticorax* are common in wetlands across North America, including saltmarshes, freshwater marshes, swamps, streams, rivers, lakes, ponds, lagoons, tidal mudflats, canals, reservoirs, and wet agricultural fields. They require aquatic habitat for foraging and terrestrial vegetation for cover. They nest and roost in dense-foliaged trees and dense emergent wetlands. They are very common in large nesting colonies and feed along the margins of lacustrine, large riverine, and fresh and saline emergent habitats. They spend the winter in southern and coastal portions of their breeding range as well as across Mexico and Central America, where they use mangroves, marshes, swamps, lagoons, and flooded rice fields.	**Moderate Potential.** According to CWHR Predicted Habitat Suitability, the Study Areas fall within a range of Low (0.33) to High (0.77) habitat suitability for this species. Foraging habitat does not exist within the Study Areas; however, Clear Lake (adjacent to the parcel) provides suitable foraging habitat for this species.	**Not Observed.** No foraging habitat exists that this species could utilize within the Study Areas and nesting and roosting habitat is considered sub-optimal for this species. Neither the pre-existing cultivation areas nor the proposed cannabis cultivation sites (Study Area 1) provide suitable habitat for this species. No further recommendations.
osprey *Pandion haliaetus*	CDF: S CDFW: WL IUCN: LC	*P. haliaetus* are strictly associated with large, fish-bearing waters, primarily in ponderosa pine and mixed conifer stands. Foraging habitat consists of open, clear waters, rivers, lakes, reservoirs, estuaries, lagoons, swamps, marshes, and bays. Diet consists almost exclusively live fish. Large trees, snags, and blown-out treetops are used for cover and nesting. Nests are located on or near the tops of trees, snags, cliffs, or human-made structures.	**Unlikely.** According to CWHR Predicted Habitat Suitability, the Study Areas fall within Low (0.11) habitat suitability for this species. While large, fish-bearing waters (Clear Lake) exist adjacent to the parcel, there are no conifers within the Study Areas that would provide suitable nesting habitat for this species.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
double-crested cormorant *Phalacrocorax auritus*	CDFW: WL IUCN: LC	*P. auritus* are year-long resident along the entire coast of California and on inland lakes, in fresh, salt, and estuarine waters. They rest in the daytime and roost overnight beside water on offshore rocks, islands, steep cliffs, dead branches of trees, wharfs, jetties, or even transmission lines. Their perching sites must be barren of vegetation. They require a considerable length of water, or elevated perch, for a labored take-off. The cormorant's diet is nearly exclusively fish, supplemented with insects, crustaceans, or amphibians. Nests are mostly made of finger-size sticks, often with seaweed and flotsam, lined with grass.	**Unlikely.** While suitable habitat for this species does not exist within the Study Areas, Clear Lake (adjacent to the parcel) provides marginal habitat for this species. According to CWHR Predicted Habitat Suitability, the Study Areas are not mapped; however, Clear Lake and the associated lakeshore falls within a range of Medium (0.49) to High (0.67) habitat suitability for this species.	**Not Present.** No further recommendations for this species.
purple martin *Progne subis*	CDFW: SSC IUCN: LC	*P. subis* often inhabit tall old-growth trees or snags in coniferous forests with multilayered canopy and are second-cavity nesters using old woodpecker cavities, crevices in rocks, trees and cactus (Baicich et. al. 2005). Typically, *P. subis* forage in open areas near water, and their diet consists primarily of invertebrates (dragonflies, beetles, flies etc.).	**Unlikely.** According to CWHR Predicted Habitat Suitability, the Study Areas fall within a range of Low (0.33) to High (0.88) habitat suitability for this species. Old-growth trees and coniferous forests do not exist within the Study Areas.	**Not Present.** Pre-existing cannabis cultivation does not have an impact on the species, and no trees are proposed for removal. Development of the grassland habitat for proposed cannabis cultivation sites (Study Area 1) is not expected to have a significant impact on this species. There are no further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
northern spotted owl *Strix occidentalis caurina*	FT, ST CDF: S IUCN: NT NABCI: YWL	*S. occidentalis caurina* are year-round residents in dense, structurally complex forests, primarily with old-growth conifers. Nests on snags and within tree cavities, and often is associated with existing structures (old raptor nests, squirrel nests and *A. pomo* nests).	**No Potential.** Required dense, structurally complex forests with old-growth coniferous habitat does not occur within the Study Areas.	**Not Present.** No further recommendations for this species.
Crustaceans				
an isopod *Calasellus californicus*	CDFW: SSC	*C. californicus* are a subaquatic and subterranean obligate species, found in freshwater habitats (wells, springs) known from Lake, Napa, Marin, Santa Cruz and Santa Clara counties within the Upper Cache (18020116)+, San Pablo Bay (18050002)+ and Coyote (18050003)+ watersheds.	**No Potential.** Habitat for this species (fish-bearing streams) do not exist within the Study Areas.	**Not Present.** No further recommendations for this species.
California linderiella *Linderiella occidentalis*	CDFW: SSC IUCN: NT	*L. occidentalis* are the most common fairy shrimp in the Central Valley. They are often found in the same vernal pools as the Vernal pool fairy shrimp, seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions. The water in the pools has very low alkalinity, conductivity, and total dissolved solids.	**No Potential.** Habitat for this species (fish-bearing streams) do not exist within the Study Areas.	**Not Present.** No further recommendations for this species.
Fish				
Sacramento perch *Archoplites interruptus*	CDFW: SSC AFS: TH	*A. interruptus* prefer sloughs and slow-flowing streams, existing in Clear Lake and Alameda Creek/Calaveras Reservoir and Sonoma Reservoir in the Russian River watershed. Sacramento perch are most often found in warm reservoirs and ponds where summer temperature range from 18-28°C. Juvenile perch in Clear Lake were found to feed mostly on copepods and later cladocerans. Aquatic insect larvae and pupae become increasingly important as the fish grow.	**No Potential.** Habitat for this species (fish-bearing streams) do not exist within the Study Areas.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Clear Lake hitch *Lavinia exilicauda chi*	ST AFS: VU USFS: S	*L. exilicauda chi* are found exclusively in Clear Lake, Lake County, and associated ponds. This species spawns in tributary streams flowing into Clear Lake. Individuals over 80 days old (4-5 cm SL) are often found in the limnetic zone of Clear Lake; juveniles occupy near-shore shallow waters with protective aquatic vegetation (Moyle et al. 1989). *L. exilicauda chi* requires clean, fine-to-medium gravel substrate for spawing and egg-laying, in lower reaches of intermittent tributary streams, mostly in sections that dry up in summer (Moyle et al. 1989).	**No Potential.** Habitat for this species (fish-bearing streams) do not exist within the Study Areas.	**Not Present.** No further recommendations for this species.
Clear Lake – Russian River roach *Lavinia symmetricus ssp. 4*	CDFW: SSC	*L. symmetricus* are generally found in small, warm intermittent streams, and dense populations are frequently found in isolated pools (Moyle 1976, Moyle and Daniels 1982). Roach are tolerant of relatively high temperatures (30-35 C) and low oxygen levels (1-2 ppm) (Taylor et al. 1982). However, they are habitat generalists, also being found in cold, well-aerated clear "trout" streams (Taylor et al. 1982), in human-modified habitats (Moyle 1976, Moyle and Daniels 1982) and in the main channels of rivers. Clear Lake roach are restricted today to the tributaries of Clear Lake, where they are widely distributed in the basin's seven major drainages. There are no recent collections from Clear Lake itself; roach are now unable to occupy the lake because of their vulnerability to alien predators (Moyle 2002). Roach are subject to barriers to their upstream dispersal (waterfalls and other high gradient stream sections).	**No Potential.** Habitat for this species (fish-bearing streams) do not exist within the Study Areas.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
steelhead - central California coast DPS *Oncorhynchus mykiss irideus pop. 8*	FT AFS: TH	*O. mykiss irideus* are anadromous coastal rainbow trout. As adults, this species requires high flows, with depths of at least 18cm for passage (Bjornn and Reiser 1991). Clean well-aerated gravel beds, typically in steep, rocky reaches of upper tributaries are needed for spawning. The central California coast DPS are found from the Russian River south to Soquel Creek and to, but not including, Pajaro River. Also San Francisco and San Pablo Bay basins. This DPS does not include summer-run steelhead.	**No Potential.** Habitat for this species (fish-bearing streams) do not exist within the Study Areas.	**Not Present.** No further recommendations for this species.
Insects				
Blennosperma vernal pool andrenid bee *Andrena blennospermatis*	CDFW: SSC	*A. blennospermatis* are associated with the early spring bloom of Common stickyseed (*Blennosperma nanum*) and Baker's stickyseed (*Blennosperma bakeri*). The blooming period for Common stickyseed is commonly from February through April, whereas the blooming period for Baker's stickyseed is from March through May. *A. blennospermatis* is a solitary, ground-nesting bee. Adults emerge early in the spring, with males emerging slightly earlier and dying off sooner than females. After emergence, the females of this species mate, and then begin excavating nests in the upland areas around vernal pools. The flight period for females ranges from late February to late April (Thorp and Leong, 1995). *A. blennospermatis* spatially restricts its foraging activities to near-neighbor flowers. Thus, bees may have difficulty colonizing areas around artificially constructed vernal pools, because of their limited flight ability and low dispersal tendencies (Leong 1994, Thorp and Leong 1995, Leong, Randolph, and Thorp 1995).	**Unlikely.** Suitable habitat for this species does not exist within the Study Areas.	**Not Present.** Neither stickyseed species (*B. nanum, B. bakeri*) was observed and no vernal pools exist within the Study Areas. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
obscure bumble bee *Bombus caliginosus*	CDFW: SSC IUCN: VU	*B. caliginosus* are often found in coastal areas from Santa Barbara county north to Washington state. Food plant genera includes *Baccharis, Crisum, Lupinus, Lotus, Grindelia,* and *Phacelia*.	**Unlikely.** The Study Areas provide marginal nesting habitat for this species, as they exist within open grassland surrounded by mixed oak stands; however, minimal herbaceous flowering plants exist within the Study Areas that would provide this species with suitable foraging habitat.	**Not Present.** No bumblebees or bee nests were observed within the Study Areas. Impact on this species from cannabis cultivation are expected to be minimal due to minimal foraging habitat. No further recommendations for this species.
western bumble bee *Bombus occidentalis*	State: CE USFS: S Xerces: IM	*B. occidentalis* are formerly common throughout much of western North America; however, populations from southern British Columbia to central California have nearly disappeared (Xerces 2017). This species occurs in a wide variety of habitat types and are considered a generalist pollinator. This genus is most commonly encountered along stream banks, in meadows, recently burned or logged areas, or on flowers by roadsides.	**Unlikely.** The Study Areas provide marginal nesting habitat for this species, as they exist within open grassland surrounded by mixed oak stands; however, minimal herbaceous flowering plants exist within the Study Areas that would provide this species with suitable foraging habitat.	**Not Present.** No bumblebees or bee nests were observed within the Study Areas. Impact on this species from cannabis cultivation are expected to be minimal due to minimal foraging habitat. No further recommendations for this species.
brownish dubiraphian riffle beetle *Dubiraphia brunnescens*	CDFW: SSC	Found within the Upper Cache watershed (HUC 18020116+) within Lake county, CA, the brownish dubiraphian riffle beetle occurs in shallow water among submerged roots of various species of aquatic plant life (including *Salex sp.*) and on rocky shores.	**No Potential.** Habitat for this species does not exist within the Study Areas.	**Not Present.** The few tributary watercourses that traverse the property are Class III watercourses that do not provide suitable aquatic habitat for this species. No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Borax Lake cuckoo wasp *Hedychridium milleri*	CDFW: SSC	*H. milleri* are apparently only endemic to Lake County. Very little information is available regarding their life history or habitat range. The only recorded data available (as of 2019) was from Kimsey, in Bohard & Kimsey 1978:620; California, Lake county, Borax Lake (UCDC).	**Unlikely.** Suitable aquatic habitat for this species does not exist within the Study Areas.	**Not Present.** No further recommendations for this species.
Ricksecker's water scavenger beetle *Hydrochara rickseckeri*	CDFW: SSC	*H. rickseckeri* habitat is considered unknown, and individuals have been observed in artificial ponds as well as vernal ponds. Adults of the species are capable of flight; however, are aquatic by nature. All known collection records are from 27 December to 30 July (most in April and May), which would correspond to when vernal pools are most likely to contain water (Short, Post, Toussaint, 2017).	**No Potential.** Habitat for this species (vernal pools, artificial ponds etc.) does not exist within the Study Areas.	**Not Present.** No further recommendations for this species.
Mammals				
pallid bat *Antrozous pallidus*	BLM: S CDFW: SSC IUCN: LC USFS: S WBWG: H	*A. pallidus* are found in deserts, grasslands, shrublands, woodlands, and forests. Most common in open, forages along river channels. Roosting sites include crevices in rocky outcrops and cliffs, caves, mines, basal hollows in large conifers and various human structures such as bridges, barns, and buildings (including occupied buildings). Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	**Moderate Potential.** According to CWHR Predicted Habitat Suitability, the Study Areas fall within a range of Low (0.33) to High (0.77) suitability for this species. Habitat within the Study Areas is marginal for this species.	**Not Observed.** The CWHR Predicted Habitat Suitability is Low to High within the Study Areas; however, basal hollows in the trees and no signs of bat presence (guano) were observed. No trees are proposed for removal. It is expected that development within the grassland habitat for cannabis cultivation will not have a significant impact on this species. There are no further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Townsend's big-eared bat *Corynorhinus townsendii*	BLM: S CDFW: SSC IUCN: LC USFS: S WBWG: H	*C. townsendii* is associated with a wide variety of habitats from deserts to mid-elevation mixed coniferous-deciduous forest, basal hollows in large conifers. Females form maternity colonies in buildings, caves and mines and males roost singly or in small groups. Foraging occurs in open forest habitats where they glean moths from vegetation.	**Unlikely.** According to CWHR Predicted Habitat Suitability, the Study Areas fall within Low (0.33) to Medium (0.66) suitability for this species. The preferred mixed coniferous-deciduous forest is marginal and potential foraging habitat exists within the Study Areas.	**Not Present.** The CWHR Predicted Habitat Suitability is Low to Medium within the Study Areas; however, basal hollows in the trees and no signs of bat presence (guano) were observed. No trees are proposed for removal. It is expected that development within the grassland habitat for cannabis cultivation will not have a significant impact on this species. There are no further recommendations for this species.
North American porcupine *Erethizon dorsatum*	CDFW: SSC IUCN: LC	*E. dorsatum* are commonly found in coniferous and mixed forested areas, and can also inhabit shrublands, tundra and deserts, albeit less frequently as this species tends to spend much of its time in trees. This herbivore eats leaves, twigs, and green plants like Skunk cabbage (*Symplocarpus foetidus*) and clovers (*Trifolium spp.*). This species makes its dens in hollow trees, decaying logs and caves in rocky areas. Recognized as primarily solitary and nocturnal, *E. dorsatum* may be seen foraging during daytime.	**Unlikely.** According to CWHR Predicted Habitat Suitability, the Study Areas fall within Low (0.33) habitat suitability for this species. Preferred mixed coniferous-deciduous forest does not exist within the Study Areas.	**Not Present.** The CWHR Predicted Habitat Suitability is Low within the Study Areas. No *E. dorsatum* or den sites were observed during the biological assessment. It is expected that development within the grassland habitat for cannabis cultivation will not have a significant impact on this species. There are no further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
western mastiff bat *Eumops perotis californicus*	BLM: S CDFW: SSC WBWG: H	*E. perotis californicus* occurs in a wide variety of habitats, including chaparral, coastal and desert scrub, coniferous and deciduous forest and woodland (Best et al. 1996; Pierson and Rainey 1998). Roosting sites occur in rocky outcrops, crevices and cliffs with 50-100% rocky slopes. Day roosts are established in crevices in rocky canyons and cliffs, trees, tunnels and buildings with a minimum 2-meter (6.5 foot) drop-off to provide a takeoff or launching area. The animals are strong, fast fliers, with a likely extensive foraging range, up to 15 miles from the nearest possible roosting site (Pierson, Rainey 1998). Foraging occurs in broad, open areas (Pierson, Rainey 1998) woodlands and forest, scrub, chaparral, grassland, riparian and agricultural areas and there is no evidence of this species being habitat specialists.	**Unlikely.** According to CWHR Predicted Habitat Suitability, the Study Areas are not mapped indicating suitable habitat for this species does not exist within the Study Areas. The Study Areas provide marginal habitat (portions of deciduous forest) for this species.	**Not Present.** The CWHR Predicted Habitat Suitability does not provide suitable habitat for this species within the Study Areas. It is expected that development within the grassland habitat for cannabis cultivation will not have a significant impact on this species. There are no further recommendations for this species.
silver-haired bat *Lasionycteris noctivagans*	CDFW: SSC IUCN: LC WBWG: M	*L. noctivagans* is primarily a coastal and montane forest dweller, feeding over streams, ponds, and open brushy areas. This species roosts in hollow trees, beneath exfoliating bark, abandoned woodpecker holes and rarely under rocks. Additionally, *L. noctivagans* requires a water sources for drinking.	**Unlikely.** According to CWHR Predicted Habitat Suitability, the Study Areas are not mapped indicating suitable habitat for this species does not exist within the Study Areas.	**Not Present.** The CWHR Predicted Habitat Suitability does not provide suitable habitat for this species within the Study Areas. It is expected that development within the grassland habitat for cannabis cultivation will not have a significant impact on this species. There are no further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Humboldt marten *Martes caurina humboldtensis*	SE CDFW: SSC USFS: S	*M. caurina humboldtensis* favors old-growth, conifer-dominated forests with dense shrub cover in large, contiguous patches. This species occurs only in the coastal redwood zone from the Oregon border south to Sonoma County, CA. This species uses hollow trees and fallen logs for resting and protection.	**No Potential.** According to CWHR Predicted Habitat Suitability, the Study Areas are not mapped indicating suitable habitat for this species does not exist within the Study Areas. The Study Areas are not located within the coastal redwood zone and do not contain preferred old-growth.	**Not Present.** Trees within the Study Areas do not provide the required old-growth or late seral stage characteristics that this species requires. No further recommendations for this species.
little brown bat *Myotis lucifugus*	CDFW: SSC IUCN: LC WBWG: M	*M. lucifugus* is found in most of the United States and Canada, except for the south central and southeastern United States and northern Alaska and Canada. *M. lucifugus* typically lives and feeds in forested areas near or over water, mainly on aquatic insects such as caddisflies, mayflies, moths, wasps, beetles, and midges. The little brown bat lives in three different roosting sites throughout the year: day roosts, night roosts, and hibernation roosts. Stable, ambient temperatures greatly influence site selection. Human-made structures are often selected, however both day and night roosts may be found in trees, under rocks, and in piles of wood. Day roosts provide excellent shelter, limited to no light, and typically have southwestern exposure. Night roosts are larger areas these bats can use when outside temperatures necessitate communal congregation for warmth. Hibernaculum habitats tend to include mines and caves and are typically warmer and more humid.	**Unlikely.** According to CWHR Predicted Habitat Suitability, the Study Areas fall within Low (0.33) habitat suitability for this species. The Study Areas do not provide suitable habitat; however, Clear Lake (adjacent to the parcel) provides suitable foraging habitat for this species. Day roosts that provide excellent shelter, limited to no light, including human-made structures are minimal within the Study Areas.	**Not Present.** The CWHR Predicted Habitat Suitability is Low within the Study Areas, no signs of bat presence (guano) was observed during the biological assessment. No trees are proposed for removal. It is expected that development within the grassland habitat for cannabis cultivation will not have a significant impact on this species. There are no further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
fringed myotis *Myotis thysanodes*	BLM: S CDFW: SSC IUCN: LC USFS: S WBWG: H	*M. thysanodes* are widespread in California, occurring in a wide variety of habitats including pinyon-juniper, valley foothill hardwood and hardwood-conifer, generally found at 1300-2200m elevations (4000-7000ft) (Harris). They forage around streams, lakes, and ponds and their prey consists mainly of beetles and other insects. Typical roosting habitat includes caves, mine tunnels, rock crevices and old buildings.	**Moderate Potential.** According to CWHR Predicted Habitat Suitability, the Study Areas fall within a range of Low (0.11) to High (0.77) habitat suitability for this species. Minimal foraging habitat exists within the Study Areas; however, Clear Lake (adjacent to the parcel) provides suitable foraging habitat for this species.	**Not Observed.** No signs of bat presence (guano) was observed during the biological assessment. No trees are proposed for removal. It is expected that development within the grassland habitat for cannabis cultivation will not have a significant impact on this species. There are no further recommendations for this species.
Yuma myotis *Myotis yumanensis*	CDFW: SSC BLM: S IUCN: LC WBWG: LM	*M. yumanensis* commonly inhabits open forests and woodlands from British Columbia across the western U.S. and south into Baja and southern Mexico. This species will use a variety of lowland habitats from scrub to coniferous forest, always near slow-moving or standing water habitats. Foraging occurs almost exclusively over water, with distribution being closely tied to bodies of water. Typical roosting habitat are caves, mines, buildings, under bridges and in cliff and tree crevices. Maternity colonies are often in caves, mines, buildings and crevices.	**Moderate Potential.** According to CWHR Predicted Habitat Suitability, the Study Areas fall within a range of Low (0.22) to High (0.77) habitat suitability for this species. The Study Areas provide marginal roosting habitat (tree crevices) in mixed oak stands with potential foraging habitat over Clear Lake (adjacent to the parcel).	**Not Observed.** No signs of bat presence (guano) was observed during the biological assessment. No trees are proposed for removal. It is expected that development within the grassland habitat for cannabis cultivation will not have a significant impact on this species. There are no further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
fisher [West Coast DPS] *Pekania pennanti*	ST CDFW: SSC USFS: S	*P. pennanti* are primarily solitary, except during breeding season (February – April and they inhabit forest stands with late-successional characteristics including intermediate-to-large tree stages of coniferous forest and deciduous-riparian areas with high percent canopy closure. Den site and prey availability are often associated with these characteristics. *P. pennanti* use cavities, snags, logs and rocky areas for cover and denning and require large areas of mature, dense forest (CDFW 2019).	**No Potential.** According to CWHR Predicted Habitat Suitability, the Study Areas are not mapped indicating suitable habitat for this species does not exist within the Study Areas. The required late-successional characteristics and riparian areas with high canopy percent canopy closure do not exist within the Study Areas. No signs of *P. pennanti* were observed during the biological assessment.	**Not Present.** Trees within the Study Areas do not provide the required old-growth or late-successional characteristics that this species requires. No further recommendations for this species.
American badger *Taxidea taxus*	CDFW: SSC IUCN: LC	*T. taxus* are most abundant in drier open stages of most shrub, forest and herbaceous habitats, with friable soils (Zeiner et al. 1990b). *T. taxus* dig burrows in the friable soils and frequently reuse old burrows. They prey on burrowing rodents, especially ground squirrels and pocket gophers, also on birds, insects, reptiles and carrion. Their diet shifts seasonally depending on the availability of prey. *T. taxus* are non-migratory and are found throughout most of California, except the northern North Coast area.	**Moderate Potential.** According to CWHR Predicted Habitat Suitability, the Study Areas fall within a range of Low (0.33) to High (1.00) habitat suitability for this species. Grassland habitat exists within the Study Areas and may be composed of friable soils that this species may utilize.	**Not Observed.** If groundbreaking activities are proposed, surveys for *T. taxus* shall be conducted following CDFW's survey protocol prior to development. If no groundbreaking activities are proposed within the Study Areas, there are no further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Mollusks				
Oregon floater *Anodonta oregonensis*	CDFW: SSC	*A. oregonensis* is distributed across western North America, including Oregon, Washington, California, Nevada and British Columbia. This species prefers low-gradient and low-elevation rivers, lakes and reservoirs and often overlaps with *A. californiensis* in habitat. Coho salmon (*Oncorhynchus kisutch*) are considered host species for *A. oregonensis.*	**No Potential.** Habitat for this species (fish-bearing streams) do not exist within the Study Areas.	**Not Present.** No further recommendations for this species.
western ridged mussel *Gonidea angulata*	CDFW: SSC	*G. angulata* inhabits cold creeks and streams from low-to-mid elevations that are seasonally and not continuously turbid. *G. angulata* requires a host species to reproduce and disperse and can be found in diverse substrates from firm mud to coarse particles. Documented fish hosts for this species include hardhead (*Mylopharodon conocephalus*), pit sculpin (*Cottus pitensis*), and Tule perch (*Hysterocarpus traski*).	**No Potential.** Habitat for this species (fish-bearing streams) do not exist within the Study Areas.	**Not Present.** No further recommendations for this species.
western pearlshell *Margaritifera falcata*	CDFW: SSC	*M. falcata* populations occur in cold, clear streams and rivers, often in reaches having fast currents and coarse substrate. This species is intolerant of heavy nutrient loads, siltation, and water pollution. This mollusk requires a fish host for its larval stage.	**No Potential.** Habitat for this species (fish-bearing streams) do not exist within the Study Areas.	**Not Present.** No further recommendations for this species.
Clear Lake pyrg *Pyrgulopsis ventricosa*	CDFW: SSC	*P. ventricosa* inhabits springs and small spring-fed streams, where it is found on vegetation. It was historically widespread in the Clear Lake region but currently it is restricted to the Seigler Creek drainage in the south end of the Clear Lake basin.	**No Potential.** Habitat for this species (fish-bearing streams) do not exist within the Study Areas.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Reptiles				
western pond turtle *Emys marmorata*	BLM: S CDFW: SSC IUCN: VU USFS: S	*E. marmorata* are associated with permanent ponds, lakes, streams, stock ponds, marshes, seasonal wetlands, artificial areas including reservoirs or irrigation ditches, or permanent pools along intermittent streams in a wide variety of habitats. This species requires basking sites in the aquatic environment or upland, grassy openings with loose soil for nesting and overwintering. Nest sites can be found from 100-500 meters from aquatic habitat.	**Moderate Potential.** According to CWHR Predicted Habitat Suitability, the Study Areas fall within a range of Medium (0.66) to High (1.00) habitat suitability for this species. Study Areas provide marginal nesting habitat for this species; however, due to the topography and location of the proposed cannabis cultivation sites, habitat is considered sub-optimal for this species.	**Not Observed.** As this species has a Medium to High (CWHR) potential to occur within the Study Areas it is recommended that prior to ground disturbance and vegetation removal, pre-development surveys are conducted following CDFW's protocol.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Plants				
bent-flowered fiddleneck *Amsinckia lunaris*	Rank 1B.2	Cismontane woodland, valley and foothill grassland, coastal bluff scrub. Elevation ranges from 10 to 2609 feet (3 to 795 meters). An annual herb, the blooming period is from Mar-Jun.	**Moderate Potential.** Study Areas provide marginal habitat for this species (cismontane woodland, valley and foothill grassland).	**Not Observed.** This species was not observed within the Study Areas; however, the biological assessment was conducted outside of the blooming period. It is recommended that prior to any groundbreaking activities, a botanical survey of the development area is conducted during the blooming period for this species (Mar-Jun).
dimorphic snapdragon *Antirrhinum subcordatum*	Rank 4.3	Chaparral, lower montane coniferous forest, generally on serpentine or shale in foothill woodland or chaparral on South and west-facing slopes (ultramafic). *A. subcordatum* has a moderate serpentine affinity[5] (4.3, broad endemic/strong indicator). Elevation ranges from 607 to 2625 feet (185 to 800 meters). An annual herb, the blooming period is from Apr-Jul.	**No Potential.** Study Areas do not provide suitable habitat (chaparral, serpentine soils) for this species.	**Not Present.** No further recommendations for this species.
twig-like snapdragon *Antirrhinum virga*	Rank 4.3	Chaparral, lower montane coniferous forest, rocky openings, often on serpentine. *A. virga* has a minor serpentine affinity (2.8, strong indicator). Elevation ranges from 328 to 6611 feet (100 to 2015 meters). A perennial herb, the blooming period is from Jun-Jul.	**No Potential.** Study Areas do not provide suitable habitat (chaparral, serpentine soils) for this species.	**Not Present.** No further recommendations for this species.

[5] Reference Serpentine Affinity Chart (CalFlora https://www.calflora.org/dbfields.html#um_affinity)

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Konocti manzanita *Arctostaphylos stanfordiana ssp. elegans*	Rank 1B.3	Chaparral, cismontane woodland, lower montane coniferous forest, often on volcanic soils. Elevation ranges from 738 to 6004 feet (225 to 1830 meters). A shrub, the blooming period is from Mar-May.	**Unlikely.** Study Areas provide marginal habitat for this species (cismontane woodland); however, *A. stanfordiana ssp. elegans* are often found on volcanic soils which are not present within the Study Areas.	**Not Present.** No further recommendations for this species.
Raiche's manzanita *Arctostaphylos stanfordiana ssp. raichei*	Rank 1B.1	Chaparral, lower montane coniferous forest (openings), rocky, serpentine sites, often on slopes and ridges. *A. stanfordiana ssp. raichei* has a minor serpentine affinity (2.6, strong indicator). Elevation ranges from 1591 to 3511 feet (485 to 1070 meters). A perennial evergreen shrub, the blooming period is from Feb-Apr.	**No Potential.** Study Areas do not provide suitable habitat (chaparral, serpentine soils) for this species.	**Not Present.** No further recommendations for this species.
Brewer's milk-vetch *Astragalus breweri*	Rank 4.2	Chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland. Often in grassy flats, meadows moist in spring, and open slopes in chaparral. Commonly on or near volcanic or serpentine sites. *A. breweri* has a minor serpentine affinity (3.2, strong indicator). Elevation ranges from 296 to 2395 feet (90 to 730 meters). An annual herb, the blooming period is from Apr-Jun.	**Unlikely.** Study Areas provide marginal habitat for this species (cismontane woodland, valley and foothill grassland); however, *A. breweri* has a serpentine affinity and are often found in chaparral on volcanic or serpentine soils which are not present within the Study Areas.	**Not Present.** No further recommendations for this species.
Cleveland's milk-vetch *Astragalus clevelandii*	Rank 4.3	Chaparral, cismontane woodland, riparian forest, ultramafic seeps and creeks; sandy stream banks, gravel bars moist in spring, hillside seeps on slopes. *A. clevelandii* has a strong serpentine affinity (6.1, strict endemic). Elevation ranges from 656 to 4922 feet (200 to 1500 meters). A perennial herb, the blooming period is from Jun-Sep.	**Unlikely.** Study Areas provide marginal habitat for this species (cismontane woodland); however, serpentine soils, preferred riparian forest, and ultramafic seeps do not exist within the Study Areas.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Mexican mosquito fern *Azolla microphylla*	Rank 4.2	Marshes and swamps (wetlands), pools and still water. Elevation ranges from 99 to 328 feet (30 to 100 meters). A fern, the blooming period is in Aug.	**No Potential.** Study Areas do not provide suitable habitat for this species.	**Not Present.** No further recommendations for this species.
big-scale balsamroot *Balsamorhiza macrolepis*	Rank 1B.2	Chaparral, valley and foothill grassland, cismontane woodland, sometimes on serpentine sites. Elevation ranges from 115 to 4807 feet (35 to 1465 meters). A perennial herb, the blooming period is from Mar-Jun.	**Unlikely.** Study Areas provide marginal habitat for this species (valley and foothill grassland, cismontane woodland); however, chaparral and serpentine sites do not exist within the Study Areas.	**Not Present.** No further recommendations for this species.
watershield *Brasenia schreberi*	Rank 2B.3	Freshwater marshes and swamps. Aquatic, known from water bodies both natural and artificial. Elevation ranges from 3 to 7152 feet (1 to 2180 meters). A perennial rhizomatous herb (aquatic), the blooming period is from Jun-Sep.	**No Potential.** Study Areas do not provide suitable habitat for this species.	**Not Present.** No further recommendations for this species.
Indian Valley brodiaea *Brodiaea rosea ssp. rosea*	Rank 3.1	Closed-cone coniferous forest, chaparral, cismontane woodland, valley and foothill grassland, often serpentine gravelly creek bottoms and in meadows/swales. Elevation ranges from 1116 to 3921 feet (340 to 1195 meters). A perennial herb (bulb), the blooming period is from May-Jun.	**Unlikely.** Study Areas provide marginal habitat for this species (cismontane woodland, valley and foothill grassland, gravelly creek bottoms); however, closed-cone coniferous forest, chaparral, serpentine soils or meadows/swales do not exist within the Study Areas.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
pink star-tulip *Calochortus uniflorus*	Rank 4.2	Coastal scrub, coastal prairie, north coast coniferous forest, meadows and seeps. Seasonally moist meadows, sometimes within coastal scrub or forested habitats, usually in wetlands or at low elevations on the coast. *C. uniflorus* has a minor serpentine affinity (1.7, weak indicator). Elevation ranges from 33 to 3511 feet (10 to 1070 meters). A perennial herb, the blooming period is from Apr-Jun.	**No Potential.** Study Areas do not provide suitable habitat for this species.	**Not Present.** No further recommendations for this species.
small-flowered calycadenia *Calycadenia micrantha*	Rank 1B.2	Chaparral, valley and foothill grassland, meadows and seeps. Rocky talus or scree; sparsely vegetated areas, occasionally on roadsides, sometimes serpentine. Elevation ranges from 1427 to 4610 feet (435 to 1405 meters). An annual herb, the blooming period is from Jun-Sep.	**Unlikely.** Study Areas provide marginal habitat for this species (valley and foothill grassland); however, chaparral, rocky talus or scree, or serpentine soils do not exist within the Study Areas.	**Not Present.** No further recommendations for this species.
four-petaled pussypaws *Calyptridium quadripetalum*	Rank 4.3	Chaparral, lower montane coniferous forest, sandy or gravelly areas, generally on serpentine (ultramafic). *C. quadripetalum* has a moderate serpentine affinity (4.6, broad endemic). Elevation ranges from 1034 to 6693 feet (315 to 2040 meters). An annual herb, the blooming period is from Apr-Jun.	**No Potential.** Study Areas do not provide suitable habitat for this species.	**Not Present.** No further recommendations for this species.
Mt. Saint Helena morning-glory *Calystegia collina ssp. oxyphylla*	Rank 4.2	Chaparral, lower montane coniferous forest, valley and foothill grassland, often along serpentine barrens, slopes and hillsides (ultramafic). *C. collina ssp. oxyphylla* has a moderate serpentine affinity (5.6, strict endemic). Elevation ranges from 919 to 3314 feet (280 to 1010 meters). A perennial herb (rhizomatous), the blooming period is from Apr-Jun.	**Unlikely.** Study Areas provide marginal habitat for this species (valley and foothill grassland); however, chaparral, lower montane coniferous forest, or ultramafic serpentine sites, do not exist within the Study Areas.	**Not Present.** No further recommendations for this species

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
bristly sedge *Carex comosa*	Rank 2B.1	Marshes and swamps, coastal prairie, valley and foothill grasslands, lake margins, wetlands. Elevation ranges from 17 to 3314 feet (5 to 1010 meters). A perennial rhizomatous herb, the blooming period is from May-Sep.	**No Potential.** Study Areas do not provide suitable habitat for this species.	**Not Present.** No further recommendations for this species.
porcupine sedge *Carex hystericina*	Rank 2B.1	Freshwater marshes, marshes and swamps, wetlands (i.e. stream edges). Elevation ranges from 738 to 7874 feet (225 to 2400 meters). A perennial grasslike herb (rhizomatous), the blooming period is from May-Jun.	**No Potential.** Study Areas do not provide suitable habitat for this species.	**Not Present.** No further recommendations for this species.
Rincon Ridge ceanothus *Ceanothus confusus*	Rank 1B.1	Closed-cone coniferous forest, chaparral, cismontane woodland, known from volcanic or serpentine soils, dry shrubby slopes. *C. confusus* has a minor serpentine affinity (1.3, weak indicator/indifferent). Elevation ranges from 492 to 4200 feet (150 to 1280 meters). A shrub, the blooming period is from Feb-Jun.	**Unlikely.** While the Study Areas provide some marginal habitat for this species (cismontane woodland) the habitat within the Study Areas are considered sub-optimal and does not provide suitable closed-cone coniferous forest, chaparral, or volcanic or serpentine sites.	**Not Present.** No further recommendations for this species.
Tracy's clarkia *Clarkia gracilis ssp. tracyi*	Rank 4.2	Chaparral, openings, usually on serpentine (5, broad endemic). Elevation ranges from 214 to 2133 feet (65 to 650 meters). An annual herb, the blooming period is from Apr-Jul.	**No Potential.** Study Areas do not provide suitable habitat for this species as no chaparral or serpentine sites exist.	**Not Present.** No further recommendations for this species.
serpentine bird's-beak *Cordylanthus tenuis ssp. brunneus*	Rank 4.3	Chaparral, closed-cone coniferous forest, cismontane woodland, often along barren, rocky serpentine soil (ultramafic). *C. tenuis ssp. brunneus* has a moderate serpentine affinity (5.1, broad endemic). Elevation ranges from 1559 to 3002 feet (475 to 915 meters). An annual herb (hemiparasitic), the blooming period is from Jul-Aug.	**Unlikely.** While the Study Areas provide some marginal habitat for this species (cismontane woodland) the habitat within the Study Areas are considered sub-optimal and does not provide suitable closed-cone coniferous forest, chaparral, or rocky serpentine sites.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
serpentine cryptantha *Cryptantha dissita*	Rank 1B.2	Chaparral, serpentine outcrops (ultramafic). Elevation ranges from 443 to 2412 feet (135 to 735 meters). An annual herb, the blooming period is from Apr-Jun.	**No Potential.** Study Areas do not provide suitable habitat for this species as no chaparral or serpentine sites exist.	**Not Present.** No further recommendations for this species.
Brandegee's eriastrum *Eriastrum brandegeeae*	Rank 1B.1	Chaparral, cismontane woodland, on barren volcanic soils, often in open areas. Elevation ranges from 1345 to 2773 feet (410 to 845 meters). An annual herb, the blooming period is from Apr-Aug.	**Unlikely.** While the Study Areas provide some marginal habitat for this species (cismontane woodland) the habitat within the Study Areas are considered sub-optimal and does not provide chaparral, or barren volcanic sites.	**Not Present.** No further recommendations for this species.
Tracy's eriastrum *Eriastrum tracyi*	Rank 3.2	Chaparral, cismontane woodland, valley and foothill grassland, gravelly shale or clay, often in open areas. Elevation ranges from 1034 to 7874 feet (315 to 2400 meters). An annual herb, the blooming period is from Jun-Jul.	**Unlikely.** While the Study Areas provide some marginal habitat for this species (cismontane woodland, valley and foothill grassland) the habitat within the Study Areas are considered sub-optimal and does not provide suitable chaparral, or gravelly shale or clay soils.	**Not Present.** No further recommendations for this species.
Greene's narrow-leaved daisy *Erigeron greenei*	Rank 1B.2	Chaparral, serpentine and volcanic substrates, generally in shrubby vegetation. Elevation ranges from 296 to 2740 feet (90 to 835 meters). A perennial herb, the blooming period is from May-Sep.	**No Potential.** Study Areas do not provide suitable habitat for this species as no chaparral, serpentine or volcanic sites exist.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Snow Mountain buckwheat *Eriogonum nervulosum*	Rank 1B.2	Chaparral, ultramafic, dry serpentine outcrops, balds and barrens. *E. nervulosum* has a strong serpentine affinity (6.2, strict endemic). Elevation ranges from 1460 to 6906 feet (445 to 2105 meters). A perennial herb (rhizomatous), the blooming period is from Jun-Sep.	**No Potential.** Study Areas do not provide suitable habitat for this species as no chaparral or dry serpentine sites (ultramafic) exist.	**Not Present.** No further recommendations for this species.
tripod buckwheat *Eriogonum tripodum*	Rank 4.2	Cismontane woodland, chaparral, gravelly slopes and flats, often on serpentine (ultramafic). *E. tripodum* has a moderate serpentine affinity (5.3, broad endemic). Elevation ranges from 656 to 5250 feet (200 to 1600 meters). A shrub, the blooming period is from May-Jul.	**Unlikely.** While the Study Areas provide some marginal habitat for this species (cismontane woodland) the habitat within the Study Areas are considered sub-optimal and does not provide suitable chaparral, gravelly ultramafic sites or serpentine soils.	**Not Present.** No further recommendations for this species.
Loch Lomond button-celery *Eryngium constancei*	Rank 1B.1	Vernal pools, volcanic ash flow vernal pools, wetlands. Elevation ranges from 1509 to 2805 feet (460 to 855 meters). An annual or perennial herb, the blooming period is from Apr-Jun.	**No Potential.** Study Areas do not provide suitable habitat for this species as no vernal pools or wetlands exist.	**Not Present.** No further recommendations for this species.
bare monkeyflower *Erythranthe nudata*	Rank 4.3	Chaparral, cismontane woodland, moist areas, often along drainages and roadsides in serpentine seeps. Elevation ranges from 820 to 2297 feet (250 to 700 meters). An annual herb, the blooming period is from May-Jun.	**Unlikely.** While the Study Areas provide some marginal habitat for this species (cismontane woodland) the habitat within the Study Areas are considered sub-optimal and does not provide suitable chaparral, moist areas, or serpentine soils.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
St. Helena fawn lily *Erythronium helenae*	Rank 4.2	Chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland often associated with serpentine and volcanic soils. Commonly grows in the open, inter-shrub spaces. *E. helenae* has a moderate serpentine affinity (4.5, broad endemic). Elevation ranges from 1149 to 4003 feet (350 to 1220 meters). A perennial herb (bulb), the blooming period is from Mar-May.	**Unlikely.** While the Study Areas provide some marginal habitat for this species (cismontane woodland, valley and foothill grassland) the habitat within the Study Areas are considered sub-optimal and does not provide suitable open inter-shrub spaces, chaparral, lower montane coniferous forest, serpentine or volcanic soils.	**Not Present.** No further recommendations for this species.
Purdy's fritillary *Fritillaria purdyi*	Rank 4.3	Chaparral, cismontane woodland, lower montane coniferous forest, usually on serpentine. *F. fritillary* has a moderate serpentine affinity (4.5, broad endemic). Elevation ranges from 574 to 7399 feet (175 to 2255 meters). A perennial bulbiferous herb, the blooming period is from Mar-Jun.	**Unlikely.** While the Study Areas provide some marginal habitat for this species (cismontane woodland) the habitat within the Study Areas are considered sub-optimal and does not provide suitable chaparral, lower montane coniferous forest, or serpentine soils.	**Not Present.** No further recommendations for this species.
Boggs Lake hedge-hyssop *Gratiola heterosepala*	Rank 1B.2	Marshes and swamps (freshwater), vernal pools, often found in clay soils, usually in vernal pools or sometimes lake margins. Elevation ranges from 13 to 7907 feet (4 to 2410 meters). An annual herb, the blooming period is from Apr-Aug.	**No Potential.** Study Areas do not provide suitable habitat for this species as no marshes, swamps, vernal pools or lakes exist.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Toren's grimmia *Grimmia torenii*	Rank 1B.3	Cismontane woodland, lower montane coniferous forest, chaparral, often found in openings, rocky, boulder and rock walls, carbonate, volcanic. Elevation ranges from 1067 to 3806 feet (325 to 1160 meters). A moss, no distinct blooming period.	**Unlikely.** While the Study Areas provide some marginal habitat for this species (cismontane woodland) the habitat within the Study Areas are considered sub-optimal and does not provide suitable chaparral, lower montane coniferous forest, or rocky volcanic soils.	**Not Present.** No further recommendations for this species.
Hall's harmonia *Harmonia hallii*	Rank 1B.2	Chaparral, serpentine hills and ridges, open, rocky areas within chaparral (ultramafic). *H. hallii* has a strong serpentine affinity (6.1, strict endemic). Elevation ranges from 1099 to 3101 feet (335 to 945 meters). An annual herb, the blooming period is from Apr-Jun.	**No Potential.** Study Areas do not provide suitable habitat for this species as no chaparral, serpentine hills (ultramafic) exist.	**Not Present.** No further recommendations for this species.
Mendocino tarplant *Hemizonia congesta ssp. calyculata*	Rank 4.3	Cismontane woodland, valley and foothill grassland, open woods and forests, sometimes on serpentine. *H. congesta ssp. calyculata* has a serpentine affinity (1.5, weak indicator). Elevation ranges from 738 to 4593 feet (225 to 1400 meters). An annual herb, the blooming period is from Jul-Nov.	**Moderate Potential.** Study Areas provide marginal habitat for this species (cismontane woodland, valley and foothill grassland); however, no *Hemizonia* spp, occur within the Study Areas.	**Not Observed.** This species was not observed within the Study Area and the biological assessment was conducted within the blooming period. There are no further recommendations for this species.
glandular western flax *Hesperolinon adenophyllum*	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland, serpentine soils, generally found in serpentine chaparral. *H. adenophyllum* has a serpentine affinity (5.7, strict endemic). Elevation ranges from 1395 to 4413 feet (425 to 1345 meters). An annual herb, the blooming period is from May-Aug.	**Unlikely.** While the Study Areas provide some marginal habitat for this species (cismontane woodland, valley and foothill grassland) the habitat within the Study Areas are considered sub-optimal and does not provide suitable chaparral, or serpentine soils.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
two-carpellate western flax *Hesperolinon bicarpellatum*	Rank 1B.2	Serpentine barrens at edges of chaparral. *H. bicarpellatum* has a serpentine affinity (6.2, strict endemic). Elevation ranges from 574 to 2707 feet (175 to 825 meters). An annual herb, the blooming period is from May-Jul.	**No Potential.** Study Areas do not provide suitable habitat for this species as no chaparral, serpentine barrens exist.	**Not Present.** No further recommendations for this species.
Lake County western flax *Hesperolinon didymocarpum*	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland, serpentine soils in open grasslands and near chaparral (ultramafic). Elevation ranges from 1067 to 1313 feet (325 to 400 meters). *H. didymocarpum* has a strong serpentine affinity (6.2, strict endemic). An annual herb, the blooming period is from May-Jul.	**Unlikely.** While the Study Areas provide some marginal habitat for this species (cismontane woodland, valley and foothill grassland) the habitat within the Study Areas are considered sub-optimal and does not provide suitable chaparral, or serpentine soils.	**Not Present.** No further recommendations for this species.
Bolander's horkelia *Horkelia bolanderi*	Rank 1B.2	Lower montane coniferous forest, chaparral, meadows and seeps, valley and foothill grassland, often found in grassy margins of vernal pools and meadows. Elevation ranges from 1493 to 2805 feet (455 to 855 meters). A perennial herb, the blooming period is from Jun-Aug.	**Unlikely.** While the Study Areas provide some marginal habitat for this species (valley and foothill grassland) the habitat within the Study Areas are considered sub-optimal and does not provide lower montane coniferous forest, chaparral, vernal pools or meadows.	**Not Present.** No further recommendations for this species.
California satintail *Imperata brevifolia*	Rank 2B.1	Coastal scrub, chaparral, riparian scrub, mojavean desert scrub, meadows and seeps (alkali), riparian scrub. Mesic sites, alkali seeps, riparian areas. Elevation ranges from 10 to 4905 feet (3 to 1495 meters). A perennial grass, the blooming period is from Sep-May.	**No Potential.** Study Areas do not provide suitable habitat for this species as no coastal scrub, chaparral, riparian scrub, etc. exist.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Burke's goldfields *Lasthenia burkei*	Rank 1B.1	Found in vernal pools and swales, meadows and seeps. Elevation ranges from 49 to 1969 feet (15 to 600 meters). An annual herb, the blooming period is from Apr-Jun.	**No Potential.** Study Areas do not provide suitable habitat for this species as no vernal pools, meadows or seeps exist.	**Not Present.** No further recommendations for this species.
Colusa layia *Layia septentrionalis*	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland, scattered colonies in fields and grassy slopes in sandy or serpentine soil. Elevation ranges from 49 to 3609 feet (15 to 1100 meters). An annual herb, the blooming period is from Apr-May.	**Unlikely.** While the Study Areas provide some marginal habitat for this species (cismontane woodland, valley and foothill grassland) the habitat within the Study Areas are considered sub-optimal and does not provide suitable chaparral, sandy or serpentine soils.	**Not Present.** No further recommendations for this species.
legenere *Legenere limosa*	Rank 1B.1	Beds of vernal pools, wetlands. Elevation ranges from 4 to 3298 feet (1 to 1005 meters). An annual herb, the blooming period is from Apr-Jun.	**No Potential.** Study Areas do not provide suitable habitat for this species as no vernal pools or wetlands exist.	**Not Present.** No further recommendations for this species.
bristly leptosiphon *Leptosiphon acicularis*	Rank 4.2	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland. Elevation ranges from 181 to 4922 feet (55 to 1500 meters). An annual herb, the blooming period is from Apr-Jul.	**Moderate Potential.** Study Areas provide marginal habitat for this species (cismontane woodland, valley and foothill grassland).	**Not Observed.** This species was not observed within the Study Areas; however, the biological assessment was conducted outside of the blooming period. It is recommended that prior to any groundbreaking activities, a botanical survey of the development area is conducted during the blooming period for this species (Apr-Jul).

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
broad-lobed leptosiphon *Leptosiphon latisectus*	Rank 4.3	Broadleaved upland forest, cismontane woodland. *L. latisectus* has a serpentine affinity (2.0, weak indicator). Elevation ranges from 558 to 4922 feet (170 to 1500 meters). An annual herb, the blooming period is from Apr-Jun.	**Unlikely.** While the Study Areas provide some marginal habitat for this species (cismontane woodland) the habitat within the Study Areas are considered sub-optimal and does not provide suitable broadleaved upland forest or serpentine soils.	**Not Present.** No further recommendations for this species.
woolly meadowfoam *Limnanthes floccosa ssp. floccosa*	Rank 4.2	Chaparral, cismontane woodland, valley and foothill grassland, vernal pools, vernally wet areas, ditches and ponds. Elevation ranges from 197 to 4380 feet (60 to 1335 meters). An annual herb, the blooming period is from Mar-May.	**Unlikely.** While the Study Areas provide some marginal habitat for this species (cismontane woodland, valley and foothill grassland) the habitat within the Study Areas are considered sub-optimal and does not provide suitable chaparral, vernal pools or vernally wet areas.	**Not Present.** No further recommendations for this species.
Anthony Peak lupine *Lupinus antoninus*	Rank 1B.2	Upper montane coniferous forest, lower montane coniferous forest, often in open areas with surrounding forest; rocky sites. Elevation ranges from 3986 to 7399 feet (1215 to 2255 meters). A perennial herb, the blooming period is from May-Jul.	**No Potential.** Study Areas do not provide suitable habitat for this species as no upper montane coniferous forest, lower montane coniferous forest or rocky sites exist.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Cobb Mountain lupine *Lupinus sericatus*	Rank 1B.2	Chaparral, cismontane woodland, lower montane coniferous forest, broadleaved upland forest. Often in stands of knobcone pine (*Pinus attenuata*)-oak woodland, on open wooded slopes in gravelly soils, sometimes on serpentine. Elevation ranges from 394 to 4561 feet (120 to 1390 meters). A perennial herb, the blooming period is from Mar-Jun.	**Unlikely.** While the Study Areas provide some marginal habitat for this species (cismontane woodland) the habitat within the Study Areas are considered sub-optimal and does not provide suitable chaparral, lower montane coniferous forest, broadleaved upland forest with *P. attenuata* or serpentine sites.	**Not Present.** No further recommendations for this species.
Mt. Diablo cottonweed *Micropus amphibolus*	Rank 3.2	Valley and foothill grassland, cismontane woodland, chaparral, broadleaved upland forest, often on bare, grassy, or rocky slopes. Elevation ranges from 148 to 2707 feet (45 to 825 meters). An annual herb, the blooming period is from Mar-May.	**Moderate Potential.** Study Areas provide marginal habitat for this species (cismontane woodland, valley and foothill grassland, grassy slopes).	**Not Observed.** This species was not observed within the Study Areas; however, the biological assessment was conducted outside of the blooming period. It is recommended that prior to any groundbreaking activities, a botanical survey of the development area is conducted during the blooming period for this species (Mar-May).
green monardella *Monardella viridis*	Rank 4.3	Broadleaved upland forest, chaparral, cismontane woodland. Elevation ranges from 328 to 3314 feet (100 to 1010 meters). A perennial herb, the blooming period is from Jun-Sep.	**Unlikely.** Study Areas provide marginal habitat for this species (cismontane woodland, valley); however, no broadleaved upland forest or chaparral exists.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
little mousetail *Myosurus minimus ssp. apus*	Rank 3.1	Vernal pools, valley and foothill grassland, wetlands, often in alkaline soils. Elevation ranges from 66 to 2100 feet (20 to 640 meters). An annual herb, the blooming period is from Mar-Jun.	**Unlikely.** While the Study Areas provide some marginal habitat for this species (valley and foothill grassland) the habitat within the Study Areas are considered sub-optimal and does not provide suitable vernal pools or wetlands.	**Not Present.** No further recommendations for this species.
Baker's navarretia *Navarretia leucocephala ssp. bakeri*	Rank 1B.1	Cismontane woodland, meadows and seeps, vernal pools and swales, valley and foothill grassland, lower montane coniferous forest, adobe or alkaline soils. Elevation ranges from 10 to 5512 feet (3 to 1680 meters). An annual herb, the blooming period is from Apr-Jul.	**Unlikely.** While the Study Areas provide some marginal habitat for this species (cismontane woodland, valley and foothill grassland) the habitat within the Study Areas are considered sub-optimal and does not provide suitable meadows and seeps, vernal pools or swales, or lower montane coniferous forest.	**Not Present.** No further recommendations for this species.
few-flowered navarretia *Navarretia leucocephala ssp. pauciflora*	Rank 1B.1	Vernal pools, volcanic ash flow and volcanic substrate within and adjacent to vernal pools. Elevation ranges from 1395 to 2805 feet (425 to 855 meters). An annual herb, the blooming period is from May-Jun.	**No Potential.** Study Areas do not provide suitable habitat for this species as no vernal pools, volcanic ash flow or volcanic susbstrates exist.	**Not Present.** No further recommendations for this species.
many-flowered navarretia *Navarretia leucocephala ssp. plieantha*	Rank 1B.2	Vernal pools, volcanic ash flow vernal pools (wetlands). Elevation ranges from 99 to 3002 feet (30 to 915 meters). An annual herb, the blooming period is from Apr-Jun.	**No Potential.** Study Areas do not provide suitable habitat for this species as no vernal pools, volcanic ash flow or wetlands exist.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
slender Orcutt grass *Orcuttia tenuis*	Rank 1B.1	Vernal pools, often in gravelly substrate, wetlands. Elevation ranges from 82 to 5758 feet (25 to 1755 meters). An annual grass, the blooming period is from May-Sep.	**No Potential.** Study Areas do not provide suitable habitat for this species as no vernal pools or wetlands exist.	**Not Present.** No further recommendations for this species.
Michael's rein orchid *Piperia michaelii*	Rank 4.2	Coastal bluff scrub, coastal scrub, cismontane woodland, chaparral, closed-cone coniferous forest, lower montane coniferous forest, mudstone and humus, generally dry sites. Elevation ranges from 10 to 3002 feet (3 to 915 meters). A perennial herb, the blooming period is from Apr-Aug.	**Unlikely.** While the Study Areas provide some marginal habitat for this species (cismontane woodland) the habitat within the Study Areas are considered sub-optimal and does not provide suitable coastal (bluff) scrub, chaparral, closed-cone coniferous forest or lower montane coniferous forest.	**Not Present.** No further recommendations for this species.
Mayacamas popcornflower *Plagiobothrys lithocaryus*	Rank 1A	Chaparral, cismontane woodland, valley and foothill grassland, moist sites. Elevation ranges from 985 to 1477 feet (300 to 450 meters). An annual herb, the blooming period is from Apr-May.	**Unlikely.** While the Study Areas provide some marginal habitat for this species (cismontane woodland, valley and foothill grassland) the habitat within the Study Areas are considered sub-optimal and does not provide suitable chaparral or moist sites that this species requires.	**Not Present.** No further recommendations for this species.
eel-grass pondweed *Potamogeton zosteriformis*	Rank 2B.2	Marshes, swamps, wetlands, ponds, lakes and streams. Elevation ranges from 296 to 7005 feet (90 to 2135 meters). An annual herb (aquatic), the blooming period is from Jun-Jul.	**No Potential.** Study Areas do not provide suitable habitat for this species as no marshes, swamps, wetlands, ponds, lakes and streams exist.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Lobb's aquatic buttercup *Ranunculus lobbii*	Rank 4.2	Cismontane woodland, valley and foothill grassland, vernal pools, north coast coniferous forest (mesic sites). Elevation ranges from 50 to 1542 feet (15 to 470 meters). An annual herb (aquatic), the blooming period is from Feb-May.	**Unlikely.** While the Study Areas provide some marginal habitat for this species (cismontane woodland, valley and foothill grassland) the habitat within the Study Areas are considered sub-optimal and does not provide suitable vernal pools or north coast coniferous forest (mesic) habitat.	**Not Present.** No further recommendations for this species.
Lake County stonecrop *Sedella leiocarpa*	Rank 1B.1	Valley and foothill grassland, vernal pools, cismontane woodland, level areas that are seasonally wet and dry out in late spring; usually volcanic in origin. Elevation ranges from 1690 to 2100 feet (515 to 640 meters). An annual herb, the blooming period is from Apr-May.	**Unlikely.** While the Study Areas provide some marginal habitat for this species (cismontane woodland, valley and foothill grassland) the habitat within the Study Areas are considered sub-optimal and does not provide suitable vernal pools or volcanic soils.	**Not Present.** No further recommendations for this species.
marsh checkerbloom *Sidalcea oregana ssp. hydrophila*	Rank 1B.2	Meadows and seeps, riparian forest, wet soils along streambanks. Elevation ranges from 1493 to 6660 feet (455 to 2030 meters). A perennial herb, the blooming period is from Jul-Aug.	**No Potential.** Study Areas do not provide suitable habitat for this species as no meadows and seeps, riparian forest or streambanks exist.	**Not Present.** No further recommendations for this species.
bearded jewelflower *Streptanthus barbiger*	Rank 4.2	Chaparral, serpentine soils (ultramafic). *S. barbiger* has a strong serpentine affinity (6.0, strict endemic). Elevation ranges from 492 to 3511 feet (150 to 1070 meters). An annual herb, the blooming period is from May-Jul.	**No Potential.** Study Areas do not provide suitable habitat for this species as no chaparral or serpentine soils (ultramafic) exist.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
green jewelflower *Streptanthus hesperidis*	Rank 1B.2	Chaparral, cismontane woodland, openings in chaparral or woodlands, serpentine, rocky sites (ultramafic). Elevation ranges from 788 to 2510 feet (240 to 765 meters). An annual herb, the blooming period is from May-Jul.	**Unlikely.** While the Study Areas provide some marginal habitat for this species (cismontane woodland) the habitat within the Study Areas are considered sub-optimal and does not provide suitable chaparral or rocky serpentine soils.	**Not Present.** No further recommendations for this species.
marsh zigadenus *Toxicoscordion fontanum*	Rank 4.2	Chaparral, cismontane woodland, lower montane coniferous forest, meadows and seeps, marshes and swamps, vernally moist or marshy areas; often on serpentine sites. Elevation ranges from 50 to 3281 feet (15 to 1000 meters). A perennial herb, the blooming period is from Apr-Jul.	**Unlikely.** While the Study Areas provide some marginal habitat for this species (cismontane woodland) the habitat within the Study Areas are considered sub-optimal and does not provide suitable chaparral, lower montane coniferous forest, meadows and seeps, marshes and swamps, vernally moist areas, or serpentine sites.	**Not Present.** No further recommendations for this species.
beaked tracyina *Tracyina rostrata*	Rank 1B.2	Cismontane woodland, valley and foothill grassland, chaparral, often observed in open grassy meadows commonly within oak woodland and grassland habitats. Elevation ranges from 492 to 2609 feet (150 to 795 meters). An annual herb, the blooming period is from May-Jun.	**Moderate Potential.** Study Areas provide marginal habitat for this species (cismontane woodland, valley); however, no chaparral or grassy meadows exists.	**Not Observed.** This species was not observed within the Study Areas; however, the biological assessment was conducted outside of the blooming period. It is recommended that prior to any groundbreaking activities, a botanical survey of the development area is conducted during the blooming period for this species (May-Jun).

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RECOMMENDATIONS
Napa bluecurls *Trichostema ruygtii*	Rank 1B.2	Cismontane woodland, chaparral, valley and foothill grassland, vernal pools, lower montane coniferous forest, often in open sunny areas or around vernal pools. Elevation ranges from 99 to 2231 feet (30 to 680 meters). An annual herb, the blooming period is from Jun-Oct.	**Unlikely.** While the Study Areas provide some marginal habitat for this species (cismontane woodland, valley and foothill grassland) the habitat within the Study Areas are considered sub-optimal and does not provide suitable chaparral, vernal pools, or lower montane coniferous forest.	**Not Present.** No further recommendations for this species.
oval-leaved viburnum *Viburnum ellipticum*	Rank 2B.3	Chaparral, cismontane woodland, lower montane coniferous forest. Elevation ranges from 706 to 4593 feet (215 to 1400 meters). A shrub, the blooming period is from May-Jun.	**Unlikely.** While the Study Areas provide some marginal habitat for this species (cismontane woodland) the habitat within the Study Areas are considered sub-optimal and does not provide suitable chaparral or lower montane coniferous forest.	**Not Present.** No further recommendations for this species.

TERRESTRIAL OR AQUATIC COMMUNITY	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA AND RECOMMENDATIONS
Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh (Terrestrial plant community). Coastal and Valley Freshwater Marsh can be categorized into twenty-two (22) distinct MCV2 Alliances that have the potential to occur within the region; however, this terrestrial plant community does not exist within the Study Area.	**No Potential.** Coastal and Valley Freshwater Marsh habitat does not exist within the Study Areas. **Not Present.** No further recommendations.
Great Valley Mixed Riparian Forest	Great Valley Mixed Riparian Forest (Terrestrial Community): Great Valley Mixed Riparian Forest can be categorized into six (6) distinct MCV2 Alliances, four (4) of which have the potential to occur within the region. The four (4) Great Valley Mixed Riparian Forest MCV2 Alliances with potential to occur within the Study Area include: • *Acer negundo* (MCV2 Alliance), Box-elder forest. *Acer negundo* is dominant or co-dominant in the tree canopy with *Alnus rhombifolia, Fraxinus latifolia, Juglans hindsii, Juglans hindsii x regia, Platanus racemosa, Populus fremontii, Populus trichocarpa, Quercus lobata, Salix gooddingii* and *Salix* spp. Vegetation Layers: Trees < 20m; cover is intermittent to continuous, and it may be two tiered. Shrub layer is open to intermittent. Herbaceous layer is sparse to abundant. Habitats: Streams, bottomlands. Soils are deep alluvium. The USFWS Wetland Inventory (1996 national list) recognizes *Acer negundo* as a FACW plant. Membership rules: o *Acer negundo* > 50% relative cover in the tree canopy (Stillwater Sciences 2001) o *Acer negundo* > 50% relative cover in the tree canopy, with *Fraxinus latifolia, Populus fremontii, Quercus lobata,* and *Salix gooddingii* at < 5% cover (Hickson and Keeler-Wolf 2007) • *Fraxinus latifolia* (MCV2 Alliance), Oregon ash groves. *Fraxinus latifolia* is dominant or co-dominant in the tree canopy with *Acer macrophyllum, Alnus rhombifolia, Calocedrus decurrens, Pinus ponderosa, Quercus kelloggii, Quercus wislizeni* and *Salix laevigata*. Vegetation Layers: Trees < 25m; canopy is open to continuous. Shrub layer is sparse to intermittent. Herbaceous layer is variable. Habitats: Riparian corridors, incised canyons, seeps, stream banks, terraces. Soils are alluvial. The USFWS Wetland Inventory (1996 national list) recognizes *Fraxinus latifolia* as a FACW plant. Membership rules: o *Fraxinus latifolia* > 5% absolute cover and > 30% relative cover in the tree canopy (Klein et al. 2007). o *Fraxinus latifolia* > 5% absolute cover in the tree canopy (Potter 2005).	**No Potential.** Great Valley Mixed Riparian Forest terrestrial community does not exist within the Study Areas. **Not Present.** No further recommendations.

TERRESTRIAL OR AQUATIC COMMUNITY	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA AND RECOMMENDATIONS
Great Valley Mixed Riparian Forest (continued)	• *Populus fremontii* (MCV2 Alliance), Fremont cottonwood forest. *Populus fremontii* is dominant or co-dominant in the tree canopy with *Acer negundo, Baccharis sergiloides, Fraxinus latifolia, Juglans hindsii, Juglans hindsii x regia, Plantanus racemosa, Quercus agrifolia, Salix exigua, Salix gooddingii, Salix laevigata, Salix lasiolepis, Salix lucida* ssp. *lasiandra* and *Salix lutea.* Vegetation Layers: Trees < 25m; canopy is continuous to open. Shrub layer is intermittent to open. Herbaceous layer is variable. Habitats: On floodplains, along low-gradient rivers, perennial or seasonally intermittent streams, springs, in lower canyons in desert mountains, in alluvial fans, and in valleys with a dependable subsurface water supply that varies considerably during the year. The USFWS Wetland Inventory (1996 national list) recognizes *Populus fremontii* as a FACW plant. Membership rules: o *Populus fremontii* > 5% absolute cover in the tree layer (Potter 2005). o *Populus fremontii* > 50% relative cover in the tree layer (Keeler-Wolf et al. 1998b, Thomas et al. 2004). o *Populus fremontii* > 50% relative cover in the tree layer, though sometimes *P. fremontii* > 30% relative cover if *Salix* species are co-dominant (Evens and San 2005, Klein and Evens 2005, cf. Stillwater Sciences and URS 2007). • *Salix gooddingii* (MCV2 Alliance), Black willow thickets. *Salix gooddingii* is dominant or co-dominant in the tree canopy with *Alnus rhombifolia, Populus fremontii, Salix laevigata, Salix lasiolepis, Salix lucida* ssp. *lasiandra, Sambucas nigra* and *Washingtonia filifera.* Shrubs include *Baccharis pilularis, Baccharis salicifolia* or *Cornus sericea.* Vegetation Layers: Trees < 30m; canopy is open to continuous. Shrub layer is open to continuous. Herbaceous layer is variable. Habitats: Terraces along large rivers, canyons, along rocky floodplains of small, intermittent streams, seeps, and springs. The USFWS Wetland Inventory (1996 national list) recognizes *Salix gooddingii* as a FACW plant. Membership rules: o *Salix gooddingii* > 50% relative cover in the canopy; if other willows are present, willows may co-dominate and *S. gooddingii* > 30% relative cover in the canopy (Evens and San 2005, Klein and Evens 2005). o *Salix gooddingii* > 50% relative cover in the canopy; if *Populus fremontii* are present, *S. gooddingii* > 60% relative cover (cf. Hickson and Keeler-Wolf 2007).	**No Potential.** Great Valley Mixed Riparian Forest terrestrial community does not exist within the Study Areas. **Not Present.** No further recommendations.

TERRESTRIAL OR AQUATIC COMMUNITY	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA AND RECOMMENDATIONS
Northern Basalt Flow Vernal Pool	Northern Basalt Flow Vernal Pool (Terrestrial Community): Northern Basalt Flow Vernal Pool can be categorized into two (2) distinct communities (*Elocharis acicularis* – MCV2 Alliance, *Montia fontana* – *Sidalcea calycosa* – MCV2 Alliance); however, neither has the potential to occur within the Study Areas.	**No Potential.** Northern Basalt Flow Vernal Pool terrestrial community does not exist within the Study Areas. **Not Present.** No further recommendations.
Northern Volcanic Ash Vernal Pool	Northern Volcanic Ash Vernal Pool (Terrestrial Community): Northern Volcanic Ash Vernal Pool does not have a distinct MCV2 Alliance; however, these systems are shallow ephemeral waterbodies found in very small depressions (typically no larger than 50 square meters) throughout foothills of the southern Cascades and Sierra Nevada. Where short inundation periods are characteristic, *Lasthenia californica*, *Downingia bicornuta*, *Psathyrotes* spp., and *Sedella* spp. are often present. Where longer inundation periods are characteristic, *Eryngium constancei* and *Eleocharis acicularis* may be found. They are often on solid volcanic bedrock, but also can be found on volcanic ash flows (lahars) over bedrock. This terrestrial community does not have the potential to occur within the Study Areas.	**No Potential.** Northern Volcanic Ash Vernal Pool terrestrial community does not exist within the Study Areas. **Not Present.** No further recommendations.
Clear Lake Drainage Cyprinid/Catostomid Stream	This aquatic community does not occur within the parcels. The closest recorded location of this aquatic community is greater than five (5) miles from the property.	**No Potential.** Clear Lake Drainage Cyprinid/Catostomid Stream aquatic community does not exist within the Study Areas. **Not Present.** No further recommendations.
Clear Lake Drainage Resident Trout Stream	This aquatic community does not occur within the property. The closest recorded location of this aquatic community is greater than five (5) miles from the property.	**No Potential.** Clear Lake Drainage Resident Trout Stream aquatic community does not exist within the Study Areas. **Not Present.** No further recommendations.

TERRESTRIAL OR AQUATIC COMMUNITY	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA AND RECOMMENDATIONS
Clear Lake Drainage Seasonal Lakefish Spawning Stream	This aquatic community does not occur within the property. The closest recorded location of this aquatic community to the property is approximately 3.1 miles southwest from the property on Cole Creek.	**No Potential.** Clear Lake Drainage Seasonal Lakefish Spawning Stream aquatic community does not exist within the Study Areas. **Not Present.** No further recommendations.

Abbreviation	Organization
FC	Federal Candidate
FE	Federal Endangered
FT	Federal Threatened
FPE	Federally Proposed for listing as Endangered
FPT	Federally Proposed for listing as Threatened
FPD	Federally Proposed for delisting
SC	State Candidate
SE	State Endangered
ST	State Threatened
SCE	State Candidate for listing as Endangered
SCT	State Candidate for listing as Threatened
SCD	State Candidate for delisting
Rank 1A	CRPR Rank 1A: Presumed extirpated in California and either rare or extinct elsewhere
Rank 1B	CRPR Rank 1B: Plants rare, threatened or endangered in California and elsewhere
Rank 2B	CRPR Rank 2B: Plants rare, threatened, or endangered in California, but more common elsewhere
Rank 3	CRPR Rank 3: Plants about which CNPS needs more information (a review list)

Potential to Occur:
No Potential. Habitat on and within 100 feet adjacent to the site is clearly unsuitable for the species requirements (cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and within 100 feet adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or within 100 feet adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or within 100 feet adjacent to the site is highly suitable. The species has a high probability of being found on the site.

Results and Recommendations:
Present. Species was observed on the site or has been recorded (i.e. CNDDB, other reports) on the site recently.
Not Present. Species is assumed to not be present due to a lack of key habitat components.
Not Observed. Species was not observed during surveys.

Abbreviation	Organization
AFS_EN	American Fisheries Society - Endangered
AFS_TH	American Fisheries Society - Threatened
AFS_VU	American Fisheries Society – Vulnerable
BLM_S	Bureau of Land Management – Sensitive
BCC	USFWS Birds of Conservation Concern
CDF_S	Calif. Dept. of Forestry & Fire Protection – Sensitive
CDFW_SSC	Calif. Dept. of Fish & Wildlife – Species of Special Concern
CDFW_FP	Calif. Dept. of Fish & Wildlife – Fully Protected
CDFW_WL	Calif. Dept. of Fish & Wildlife – Watch List
IUCN_CR	IUCN – Critically Endangered
IUCN_EN	IUCN – Endangered
IUCN_NT	IUCN – Near Threatened
IUCN_VU	IUCN – Vulnerable
IUCN_LC	IUCN – Least Concern
IUCN_DD	IUCN – Data Deficient
IUCN_CD	IUCN – Conservation Dependent
NABCI_RWL	North American Bird Conservation Initiative – Red Watch List
NABCI_YWL	North American Bird Conservation Initiative – Yellow Watch List
NMFS_SC	National Marine Fisheries Service – Species of Concern
USFS_S	U. S. Forest Service - Sensitive
USFWS_BCC	U. S. Fish & Wildlife Service Birds of Conservation Concern
WBWG_H	Western Bat Working Group – High Priority
WBWG_MH	Western Bat Working Group – Medium-High Priority
WBWG_M	Western Bat Working Group – Medium Priority
WBWG_LM	Western Bat Working Group – Low-Medium Priority
Xerces: CI	Xerces Society – Critically Imperiled
Xerces: IM	Xerces Society – Imperiled
Xerces: VU	Xerces Society – Vulnerable
Xerces: DD	Xerces Society – Data Deficient

Appendix B: List of Species Observed within the Study Areas

SCIENTIFIC NAME	COMMON NAME
Plants	
Aesculus californica	California buckeye
Avena barbata	slim oat
Avena fatua	wild oat
Baccharis pilularis	coyote brush
Brodiaea elegans	harvest brodiaea
Bromus diandrus	ripgut brome
Bromus hordeaceus	soft chess
Carduus pycnocephalus	Italian thistle
Cynosurus echinatus	dogtail grass
Elymus glaucus ssp. glaucus	blue wild rye
Osmorhiza berteroi	sweet cicely
Pentagramma triangularis	goldback fern
Quercus douglasii	blue oak
Quercus kelloggii	black oak
Quercus wislizeni	interior live oak
Rubus armeniacus	Himalayan blackberry
Torilis arvensis	field hedge parsley
Toxicodendron diversilobum	poison oak
Umbellularia californica	California bay

SCIENTIFIC NAME	COMMON NAME
Wildlife	
Amphibians	
N/A	-
Avifauna	
Aphelocoma californica	California scrubjay
Buteo jamaicensis	red-tailed hawk
Cathartes aura	turkey vulture
Corvus corax	common raven
Melanerpes formicivorus	acorn woodpecker
Fish	
N/A	-
Insects	
N/A	-
Mammals	
Odocoileus hemionus columbianus	black-tailed deer
Mollusks	
N/A	-
Reptiles	
N/A	-

Appendix C: Representative Photographs of the Study Areas

Photo 1: Representative photograph of Study Area 1A (proposed cannabis cultivation areas). Habitat within the proposed cultivation areas includes primarily wild oat grassland (*Avena* (*barbata, fatua*) – MCV2 Alliance), with annual dogtail grassland (*Cynosurus echinatus* – MCV2 Alliance) and blue oak woodland (*Quercus douglasii* – MCV2 Alliance) at slightly lower elevations and within swales (background of photo).

Date: September 30, 2019

Photo 2: Representative photograph of Study Area 1A (proposed cannabis cultivation areas). Habitat within the proposed cultivation areas includes primarily wild oat grassland (*Avena* (*barbata, fatua*) – MCV2 Alliance), with annual dogtail grassland (*Cynosurus echinatus* – MCV2 Alliance) and blue oak woodland (*Quercus douglasii* – MCV2 Alliance) at slightly lower elevations and within swales (background of photo).

Date: September 30, 2019

Photo 3: Representative photograph of Study Area 1B (proposed cannabis cultivation areas). Habitat within the proposed cultivation areas includes primarily wild oat grassland (*Avena* (*barbata, fatua*) – MCV2 Alliance), with annual dogtail grassland (*Cynosurus echinatus* – MCV2 Alliance) and blue oak woodland (*Quercus douglasii* – MCV2 Alliance) at slightly lower elevations and within swales (background of photo).

Date: September 30, 2019

Photo 4: Representative photograph of Study Area 1B (proposed cannabis cultivation areas). Habitat within the proposed cultivation areas includes primarily wild oat grassland (*Avena* (*barbata, fatua*) – MCV2 Alliance), with annual dogtail grassland (*Cynosurus echinatus* – MCV2 Alliance) and blue oak woodland (*Quercus douglasii* – MCV2 Alliance) at slightly lower elevations and within swales (background of photo).

Date: September 30, 2019

Photo 5: Representative photograph of Study Area 1C (proposed cannabis cultivation areas). Habitat within the proposed cultivation areas includes primarily wild oat grassland (*Avena* (*barbata, fatua*) – MCV2 Alliance), with annual dogtail grassland (*Cynosurus echinatus* – MCV2 Alliance) and blue oak woodland (*Quercus douglasii* – MCV2 Alliance) at slightly lower elevations and within swales (background of photo).

Date: September 30, 2019

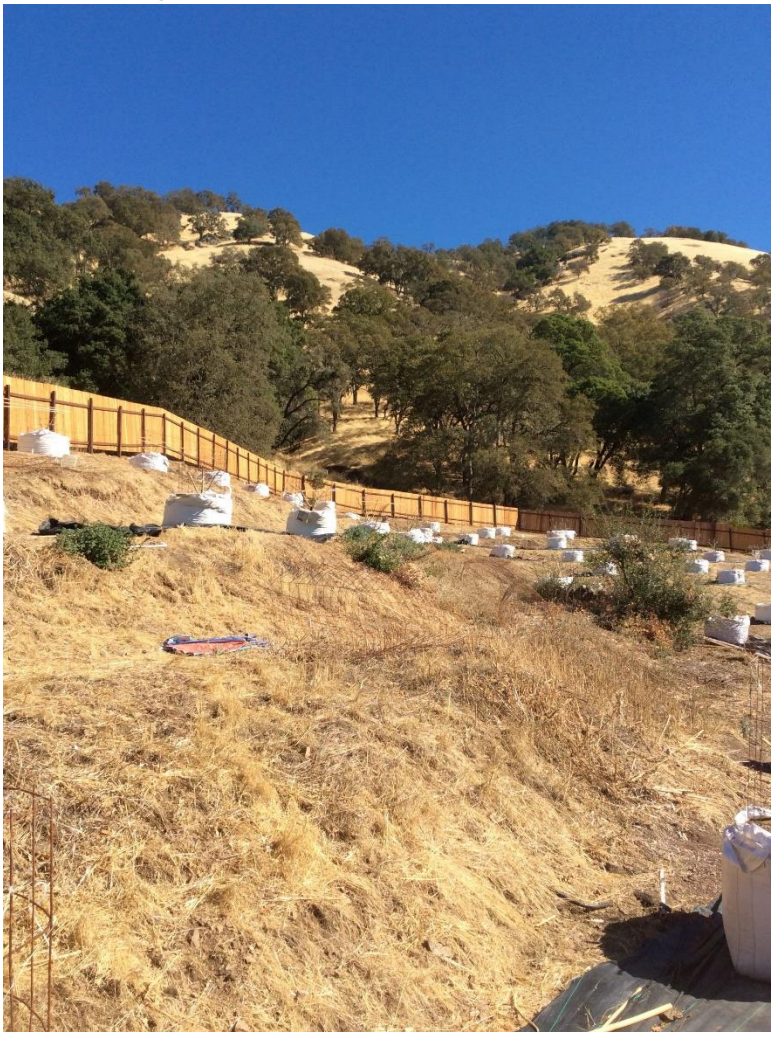

Photo 6: Representative photograph of pre-existing cannabis cultivation area. Habitat within the pre-existing cultivation area includes primarily wild oat grassland (*Avena* (*barbata*, *fatua*) – MCV2 Alliance), with annual dogtail grassland (*Cynosurus echinatus* – MCV2 Alliance) and blue oak woodland (*Quercus douglasii* – MCV2 Alliance) surrounding the cultivation and within swales (background of photo).

Date: November 13, 2017

Photo 7: Representative photograph of Study Area 2A (Class III watercourse crossing, inlet). Habitat includes wild oat grassland (*Avena* (*barbata*, *fatua*) – MCV2 Alliance) and blue oak woodland (*Quercus douglasii* – MCV2 Alliance).

Date: September 30, 2019

Photo 8: Representative photograph of Study Area 2A (Class III watercourse crossing, outlet). Habitat includes wild oat grassland (*Avena* (*barbata*, *fatua*) – MCV2 Alliance) and blue oak woodland (*Quercus douglasii* – MCV2 Alliance).

Date: September 30, 2019

Photo 9: Representative photograph of Study Area 2B (Class III watercourse crossing, inlet delineated by red circle). Habitat includes dense riparian vegetation (*Rubus armeniacus*) and blue oak woodland (*Quercus douglasii* – MCV2 Alliance).

Date: September 30, 2019

Photo 10: Representative photograph of Study Area 2B (Class III watercourse crossing, outlet delineated by red circle). Habitat includes dense riparian vegetation (*Rubus armeniacus*) and blue oak woodland (*Quercus douglasii* – MCV2 Alliance).

Date: September 30, 2019

Appendix D: Supporting Figures (Maps)

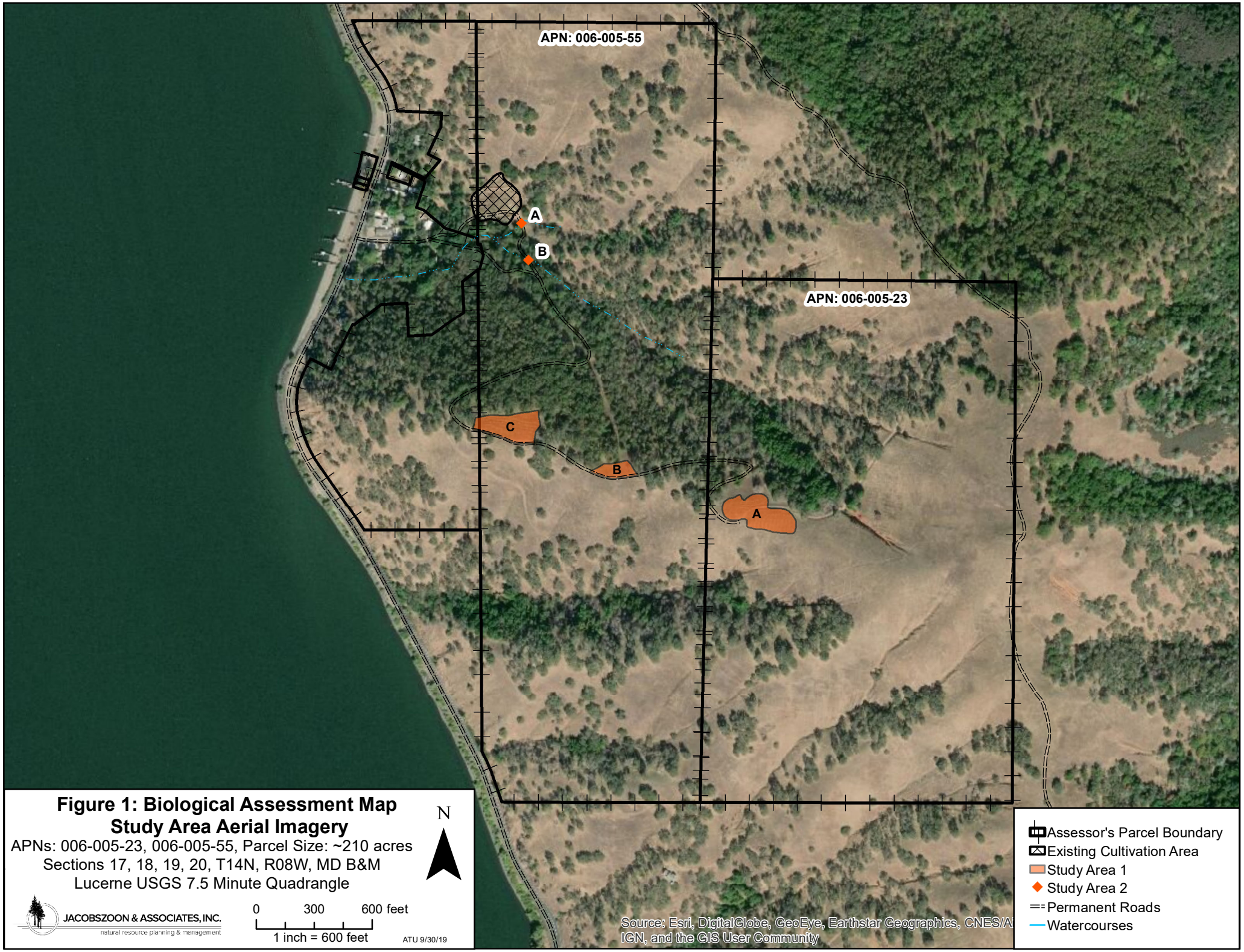

Figure 1: Biological Assessment Map
Study Area Aerial Imagery

APNs: 006-005-23, 006-005-55, Parcel Size: ~210 acres
Sections 17, 18, 19, 20, T14N, R08W, MD B&M
Lucerne USGS 7.5 Minute Quadrangle

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ATU 9/30/19

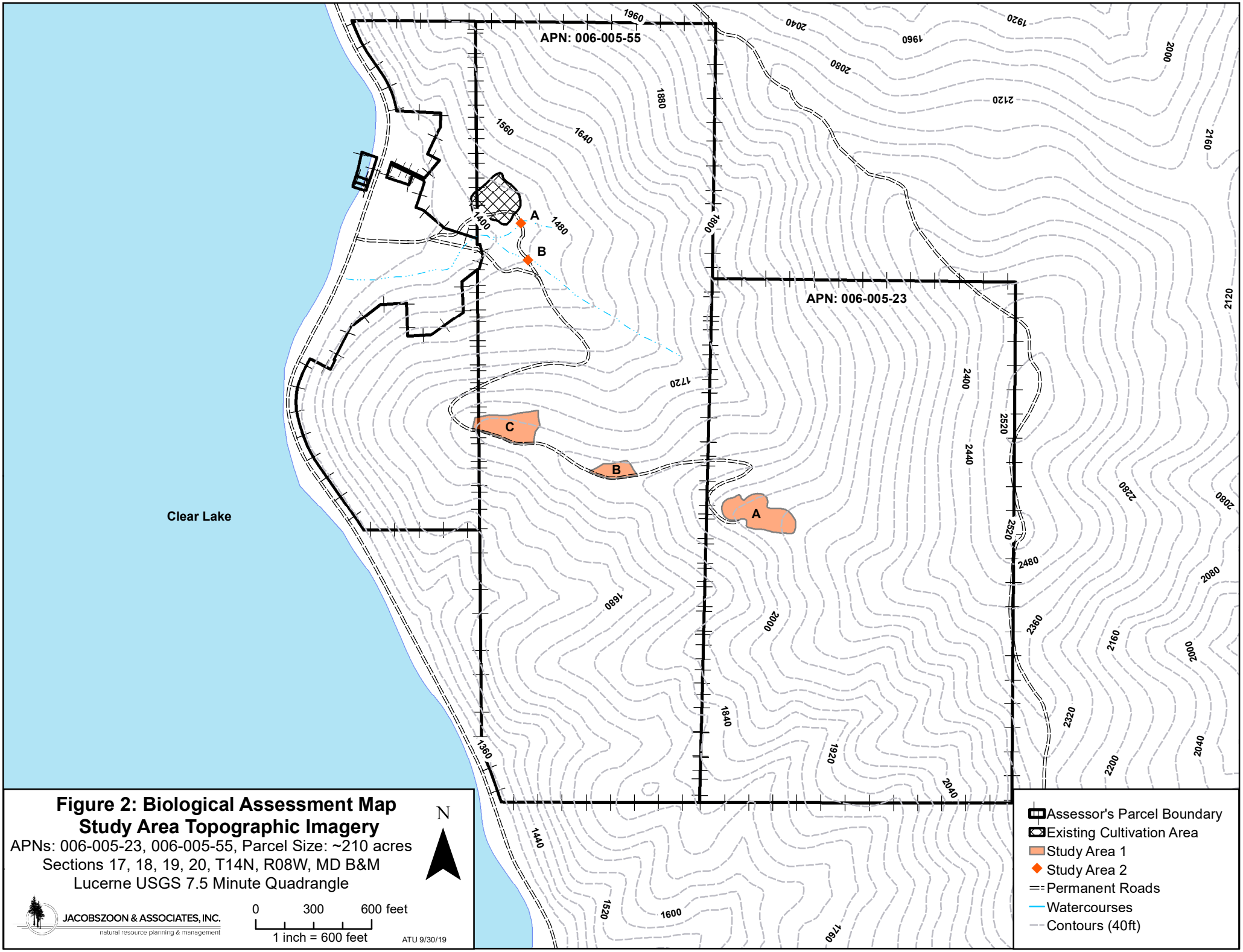

Figure 2: Biological Assessment Map
Study Area Topographic Imagery

APNs: 006-005-23, 006-005-55, Parcel Size: ~210 acres
Sections 17, 18, 19, 20, T14N, R08W, MD B&M
Lucerne USGS 7.5 Minute Quadrangle

N

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0 300 600 feet
1 inch = 600 feet

ATU 9/30/19

- Assessor's Parcel Boundary
- Existing Cultivation Area
- Study Area 1
- Study Area 2
- Permanent Roads
- Watercourses
- Contours (40ft)

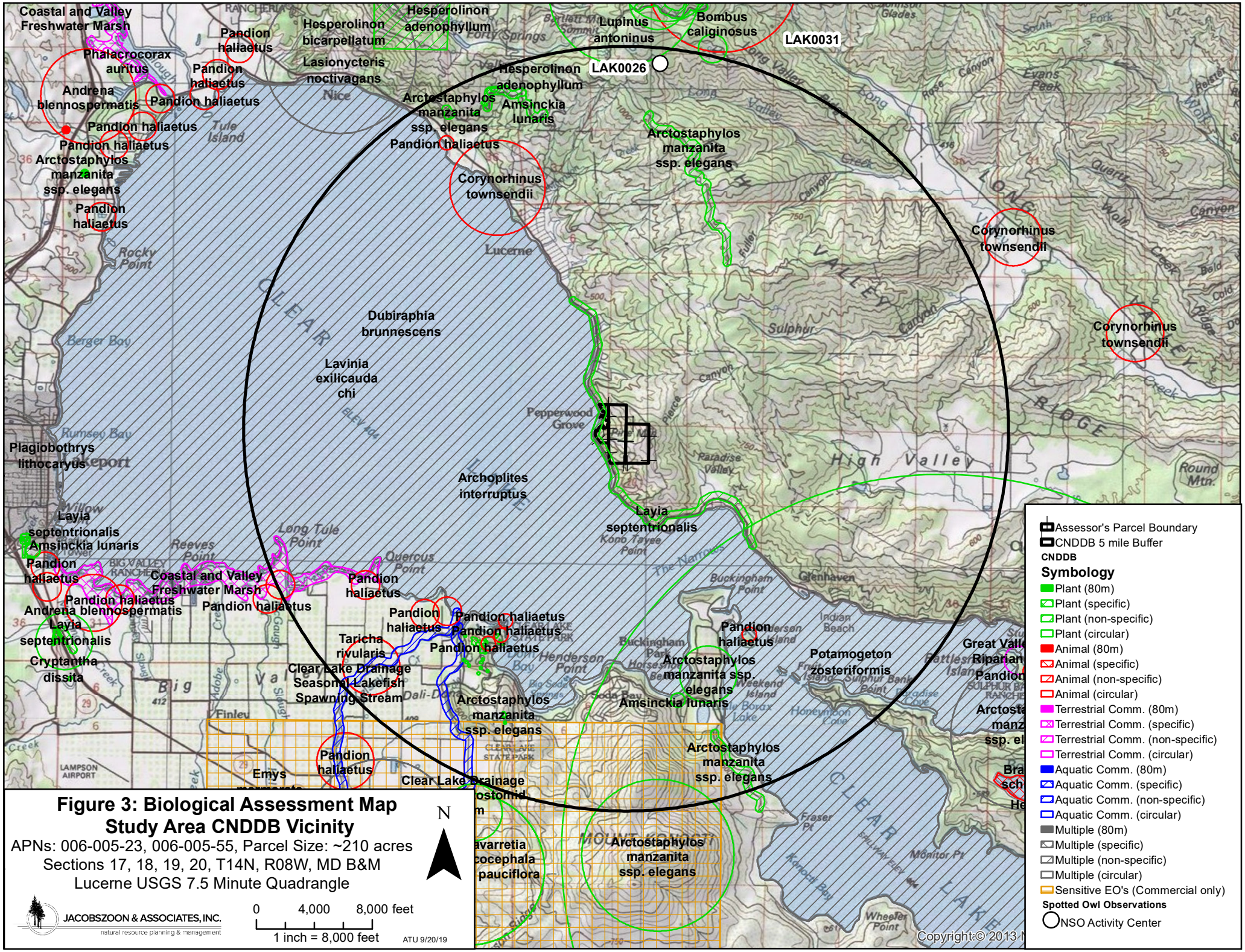

Figure 3: Biological Assessment Map
Study Area CNDDB Vicinity

APNs: 006-005-23, 006-005-55, Parcel Size: ~210 acres
Sections 17, 18, 19, 20, T14N, R08W, MD B&M
Lucerne USGS 7.5 Minute Quadrangle

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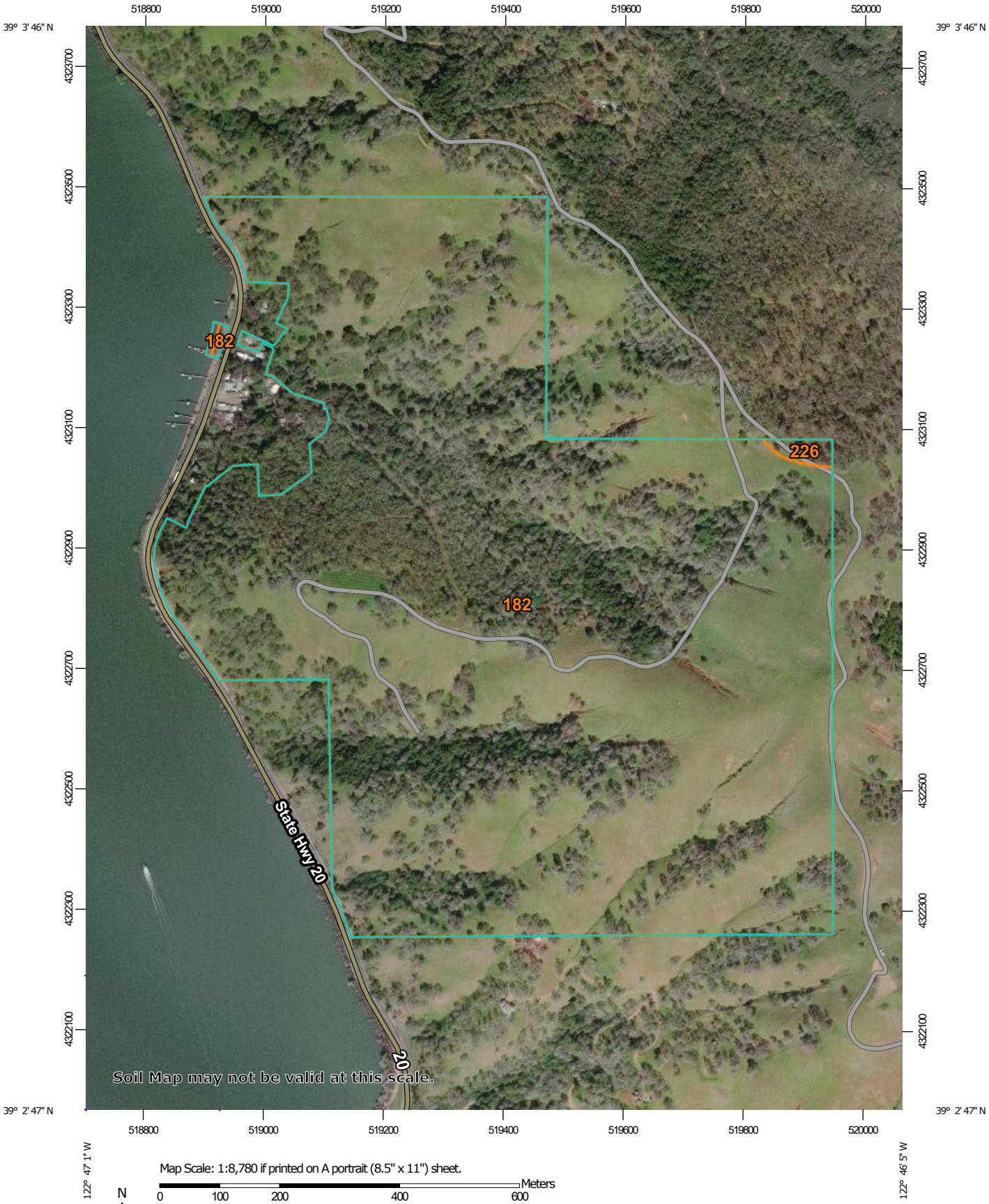
ATU 9/20/19

Soil Map—Lake County, California
(Draper Lucerne)



Map Scale: 1:8,780 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 100 200 400 600

Feet
0 400 800 1600 2400

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Lake County, California
Survey Area Data: Version 16, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 18, 2016—Nov 4, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
182	Neice-Sobrante-Hambright complex, 30 to 75 percent slopes	238.1	99.5%
226	Speaker-Maymen-Marpa association, 50 to 75 percent slopes	1.0	0.4%
256	Water	0.1	0.1%
Totals for Area of Interest		**239.1**	**100.0%**

MITIGATION MONITORING AND REPORTING PROGRAM

Mary Draper / Lucerne
Initial Study IS 19-03
Major Use Permit UP 19-01

	Mitigation Measure	Implementation Responsibility	Monitoring & Reporting Responsibility	Timing	Date Implemented
Aesthetics					
The project has the potential to cause visual damage to the site by removing 18 mature oak trees.	AES-1: The applicant shall provide a tree removal and replacement plan showing a 3:1 tree replacement ratio for each oak tree removed that has a diameter of 5" or greater measured at 4.5' DBH. The Replacement Plan shall show the locations of replacement trees including method of irrigation. All replacement trees shall be kept in a healthy state for the duration of the use permit.	Applicant; project contractor	Applicant; Community Development Department	Prior to cultivation	
Air Quality					
The project has the potential to create fugitive dust during construction and expose sensitive receptors to pollutant concentrations.	AQ-1: Prior to obtaining the necessary permits and/or approvals for any phase, applicant shall contact the Lake County Air Quality Management District and obtain an Authority to Construct (A/C) Permit for all operations and for any diesel powered equipment and/or other equipment with potential for air emissions.	Applicant; project contractor	Applicant; Community Development Department	Prior to cultivation	
	AQ-2: All mobile diesel equipment used must be in compliance with State registration requirements. Portable and stationary diesel powered equipment must meet the	Applicant; project contractor	Applicant	During construction	

	requirements of the State Air Toxic Control Measures for CI engines.				
	AQ-3: The applicant shall maintain records of all hazardous or toxic materials used, including a Material Safety Data Sheet (MSDS) for all volatile organic compounds utilized, including cleaning materials. Said information shall be made available upon request and/or the ability to provide the Lake County Air Quality Management District such information in order to complete an updated Air Toxic emission Inventory.	Applicant; project contractor	Applicant	During construction	
	AQ-4: All vegetation during site development shall be chipped and spread for ground cover and/or erosion control. The burning of vegetation, construction debris, including waste material is prohibited.	Applicant; project contractor	Applicant; Lake County Air Quality Management District; Community Development Department	Life of the project	
	AQ-5: The applicant shall have the primary access and parking areas surfaced with chip seal, asphalt or an equivalent all weather surfacing to reduce fugitive dust generation. The use of white rock as a road base or surface material for travel routes and/or parking areas is prohibited.	Applicant; project contractor	Applicant	During construction ; Life of the project	
	AQ-7: All areas subject infrequent use of driveways, over flow parking, etc., shall be surfaced with gravel. Applicant shall regularly use and/or maintain graveled area to reduce fugitive dust generations.	Applicant; project contractor	Applicant	During construction	

Biological Resources					
Construction activities associated with the proposed Project have the potential to indirectly significantly impact habitat for sensitive species	BIO-1[MI1]: If project activities occur during the breeding season (February 1 through August 31), a qualified biologist shall conduct a breeding survey no more than 14 days prior to project activities to determine if any birds are nesting in trees on or adjacent to the study area. This shall include areas where water wells and security fencing will be installed. If active nests are found close enough to affect breeding success, the qualified biologist shall establish an appropriate exclusion zone around the nest. This exclusion zone may be modified depending upon the species, nest location, and existing visual buffers.	Applicant; project contractor	Applicant	Throughout construction activities	
	BIO-2: If initial ground disturbance occurs during the bat maternity roosting season (April 1 through September 1), a qualified biologist shall conduct a bat roost assessment of trees within 100 feet of the proposed construction. If bat maternity roosts are present, the biologist shall establish an appropriate exclusion zone around the maternity roost.	Qualified Biologist	Applicant; Qualified Biologist	Prior to ground disturbing activities	

Cultural Resources and Tribal Cultural Resources					
Construction of the Project has the potential for accidental discovery of unknown, undiscovered cultural resources and tribal cultural resources.	CUL-1: Should any archaeological, paleontological, or cultural materials be discovered during site development, all activity shall be halted in the vicinity of the find(s), the applicant shall notify the local overseeing Tribe, and a qualified archaeologist to evaluate the find(s) and recommend mitigation procedures, if necessary, subject to the approval of the Community Development Director. Should any human remains be encountered, the applicant shall notify the Sheriff's Department, the local overseeing Tribe, and a qualified archaeologist for proper internment and Tribal rituals per Public Resources Code Section 5097.98 and Health and Safety Code 7050.5.	Project contractor; Qualified archaeologist	Applicant	During site preparation and throughout construction activities	
	CUL-2: All employees shall be trained in recognizing potentially significant artifacts that may be discovered during ground disturbance. If any artifacts or remains are found, the local overseeing Tribe shall immediately be notified; a licensed archaeologist shall be notified, and the Lake County Community Development Director shall be notified of such finds.	Applicant, Project contractor; Qualified archaeologist	Applicant	Prior to site preparation and throughout construction activities	
Hydrology and Water Quality					

The project has some potential for significant impacts related to erosion due to stormwater.	HYD-1: The applicant shall submit an engineered Erosion Control and Drainage Plan to Lake County Planning Department prior to use permit issuance for review and acceptance, or review and medication.	Applicant; Project contractor	Applicant	Prior to site preparation and throughout construction activities; during life of project	
Noise					
There is some potential for noise-related impacts from the project; therefore mitigation measures are incorporated to mitigate noise-related impacts.	NOI-1: All construction activities including engine warm-up shall be limited Monday Through Friday, between the hours of 7:00am and 7:00pm to minimize noise impacts on nearby residents. Back-up beepers shall be adjusted to the lowest allowable levels. This mitigation does not apply to night work.	Applicant; Project contractor	Applicant	During site preparation and construction activities; during life of project	
	NOI -2: Maximum non-construction related sounds levels shall not exceed levels of 55 dBA between the hours of 7:00AM to 7:00PM and 45 dBA between the hours of 10:00PM to 7:00AM within residential areas as specified within Zoning Ordinance Section 21-41.11 (Table 11.1) at the property lines.	Applicant; Project contractor	Applicant	During site preparation and construction activities; during life of project	

	NOI-3: The operation of the Air Filtration System shall not exceed levels of 57 dBA between the hours of 7:00AM to 10:00PM and 50 dBA from 10:00PM to 7:00AM within residential areas as specified within Zoning Ordinance Section 21-41.11 (Table 11.2) measured at the property lines.	Applicant; Project contractor		During site preparation and construction activities; during life of project	