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September 27, 2019

Mr. Peter Bird
Associate Planner
City of Shasta Lake
4477 Main Street
Shasta Lake, CA 96019

**SUBJECT: RESPONSE TO CITY OF SHASTA LAKE COMMENT LETTER FOR
CANNABIS CAMPUS, ASHBY ROAD, CITY OF SHASTA LAKE, CA
(APN: 006-020-056 & 006-020-057)**

Mr. Bird,

Wiemeyer Ecological Sciences (WES) has prepared this response letter to your comment letter dated May 10, 2019 for the Cannabis Campus project on Ashby Road in the City of Shasta Lake, CA. Included with this response letter is a revised Biological Assessment for the proposed development project.

Below are the comments you provided in your letter regarding the Biological Assessment and Wetland Delineation with responses and additional information provided in bold text.

Biological Assessment

67. The title sheet should state "City of Shasta Lake"

The title sheet on the Biological Assessment has been updated.

68. The project description must include both parcels

The project description has been updated to include both parcels.

69. Correct the APN

The correct APN has been updated.

70. Appendices are to be out of order and title sheets are printed back to back with each other. Resubmit properly labeled appendices.

The appendices are now in order and properly labeled.

71. 6.1 references “Appendix C”- this is not included. Correct reference and appendix title

Appendix C has been included with correct reference and appendix title.

72. 6.2 There is no “Appendix D”

Appendix D has been included.

73. 7.2.3.1 - This section is out of order.

The sections have been updated to not be out of order

74. 7.2.3.1 - Location of bushes should be delineated on an exhibit

The blue elderberry bushes are all located in one specific area on the site and their location is plotted on Figure 4 – Habitat Map as a yellow dot.

75. 8.4.1 - Mitigation Measures- change “should” to shall in first sentence.

The mitigation measure language has been updated to “shall”.

76. 8.4.2.4 - Provide an exhibit showing total number and location of bat houses

Figure 4 – Habitat Map has been updated to show the proposed locations for the installation of bat houses.

77. 8.4.2 - This section appears to create a dramatic hurdle for the development. Consider bat surveys to identify actual impact to protected species.

The proposed mitigation measures to minimize impacts to active bat roosting are commonly accepted measures approved by California Department of Fish and Wildlife. Performing bat surveys is actually a more complicated effort that is typically only required if tree removal or tree trimming is proposed to be performed during active bat maternity roosting.

Wetland Delineation

88. It is not apparent how you have addressed the wetlands. Please provide a wetland delineation for the project area.

The biological assessment has been updated by adding *Section 6.4 – Wetland Determination and Mapping of Waters of the United States/Waters of the State* with more information regarding the study methods used to determine if seasonal wetlands occurred at the site and to obtain the estimated location of the stream channel, the top of bank and the ordinary high water mark within Churn Creek North Branch. Attached to this response letter is an exhibit depicting the these features.

I trust this is the information that you have requested.

Sincerely,

Darren Wiemeyer
Wiemeyer Ecological Sciences
darren@wiemeyerecologicalsciences.com

attachments and enclosures: Biological Assessment (Revision 1)
 Waters of the United States/Waters of the State Exhibit

BIOLOGICAL ASSESSMENT

REVISION 1.0

CANNABIS CAMPUS
ASHBY ROAD
CITY OF SHASTA LAKE, CA

APNs: 006-020-056 & 006-020-057

Prepared For:

Manzanita Ranch Estates, LLC
Ashby Road
Shasta Lake City, CA 96019

Prepared By:

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September 26, 2019

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BIOLOGICAL ASSESSMENT REV. 1 – ASHBY ROAD, SHASTA LAKE CITY, CA

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PROVIDED AT REAR OF REPORT

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SITE PLAN

PHOTO PLATE A

PHOTO PLATE B

APPENDICES

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CHECKLIST

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1 SUMMARY

This Biological Assessment presents the findings of surveys and habitat assessments for special-status species and sensitive natural communities completed for the project site, located at the proposed “Cannabis Campus” on Ashby Road in Shasta County, California (hereafter referred to as the “site”) (Figure 1). This Biological Analysis Study is required for a complete “City of Shasta Lake Environmental Review Checklist”.

Darren Wiemeyer, a qualified biologist, performed site visits on May 20, 2018 and July 16, 2018. These site visits were performed to map habitat communities and assess habitat suitability for special-status animal species, perform wildlife inventories and perform a late blooming season special-status plant species survey. Russell Burkett, a qualified botanist, performed site visits on April 12, 2018 and May 12, 2018 to map habitat communities, perform special-status plant species surveys and assess habitat suitability for special-status plant species. John Alderson, a qualified arborist, performed multiple site visits during April of 2018 to map tree communities, assess tree habitat suitability for wildlife, inventory trees on the site and assess the health and condition of trees on the site.

Habitat types at the site consist of mixed woodland, riparian forest, annual grassland, and a waterway consisting of an unnamed seasonal drainage (locally referred to as Churn Creek North Branch) which runs along the southwestern edge of the site (Figure 4). No special-status plant species or special-status animal species were observed at the site. The site has suitable habitat for several special-status animal species.

The proposed project includes a commercial mixed-light cannabis cultivation operation. The project proposes to cultivate, process, manufacture, and distribute cannabis and cannabis products using newly constructed facilities at the site. The project proposes to construct twelve (12), 5,040 square foot (ft²), mixed-light, cultivation structures/facilities, a 5,040 ft² processing structure/facility, a 5,040 ft² distribution structure/facility, and a 20,000 ft² processing and manufacturing structure/facility. All site developments, including access roads and parking areas, will be located at a distance of 50 feet or greater from the top of bank of Churn Creek North Branch.

The proposed project will result in impacts to, and the loss of, mixed woodland and annual grassland habitat at the site (Figure 4). The proposed project will avoid impacts to the riparian forest habitat associated with Churn Creek North Branch and will provide a 50-foot development setback buffer from all site developments to the top of bank of Churn Creek North Branch. In addition, the proposed project will avoid impacts in the identified archeological preservation area.

The proposed project will not result in impacts to special-status plants species. The proposed project has the potential to impact special-status animal species including special-status bat species, western pond turtle and foothill yellow-legged frog. In addition, the proposed project has the potential to disturb native nesting birds, including birds of prey, primarily as a result of tree removal, in the event native birds initiate nesting activities at the site.

An undetermined number of trees are proposed to be removed as a result of the proposed project. Tree protection measures will be implemented at the site to protect the trees to be preserved and

tree replacement is proposed for the trees to be removed. The installation and maintenance of barrier fencing along the 50-foot development setback buffer from site developments to the top of bank of Churn Creek North Branch will establish protection of riparian forest associated with Churn Creek North Branch during site developments.

Recommended avoidance and mitigation measures are detailed in Section 8.3 of this report to reduce potential significant adverse impacts to native nesting birds, special-status bats, western pond turtle, and foothill yellow-legged frog to a less than significant level.

1.1 REVISION 1

This biological assessment has been revised to address comments from the City of Shasta Lake in a letter dated May 10, 2019 (Appendix E).

2 SITE DESCRIPTION

The site is located within the city limits of the City of Shasta Lake, Shasta County, California, approximately 2,000 feet to the southwest of the intersection of Ashby Road and El Cajon Avenue, as shown on the attached Figure 1. The site consists of two contiguous, undeveloped parcels, totaling approximately 12.86-acres of land, identified as Shasta County Assessor's Parcel Numbers (APN) 006-020-056, and 006-020-057. APN 006-020-056 is an approximately 6.76-acre parcel of land, and APN 006-020-057 is an approximately 6.10-acre parcel of land. The site is zoned Light Industrial (ML). The site was historically used as a rural homestead. There are currently no structures on the site.

Photographs of the site are included as Photo Plate A and Photo Plate B.

2.1 TOPOGRAPHY

The topography of the site is gently rolling terrain, generally sloping overall from the east to west, with elevations ranging from approximately 775 to 900 feet above mean sea level (msl) (Figure 2).

2.2 HYDROLOGY

The site is situated within the Sacramento River – Clear Creek Watershed (HUC 8), and the Churn Creek Sub-watershed (HUC 12). The Churn Creek Sub-watershed is approximately 24,171 acres in size, encompassing portions of the cities of Shasta Lake and Redding. There is a seasonal drainage which is a tributary to Churn Creek located on the southernmost portion of the site (locally known as Churn Creek North Branch). The City of Shasta Lake Wastewater Treatment Facility (WWTF) located to the south/southwest of the site, treats and discharges effluent to Churn Creek. Contracted reclamation uses of the WWTF include Sierra Pacific Industries (SPI) to the north of the site.

Surface water runoff on the site flows in a variety of directions, depending on location. On the northern portions of the site within the project area, surface water flows in a southerly direction, eventually flowing into Churn Creek North Branch. On the southern portions of the site, surface water runoff generally flows southwest, eventually flowing into Churn Creek North Branch.

Churn Creek North Branch originates in the foothills south of Shasta Lake and flows south through the City of Shasta Lake. A portion of Churn Creek North Branch has two constructed dams at a

mobile home park that appears to be an effective barrier to fish movement. Churn Creek North Branch continues to flow south under railroad tracks and past a large log deck and detention basin at the Sierra Pacific Industries facility before it flows along the western and southwestern edges of the project site. Only a small portion of Churn Creek North Branch occurs on the project site at the far southern end of the project site (Figure 2). Churn Creek North Branch flows southerly, flowing into Churn Creek, which in turn flows into the Sacramento River near the town of Anderson, California, and ultimately flows into the Pacific Ocean (Figure 2).

2.3 SOIL TYPES

The soil types mapped at the site consist of Auburn loam, 8 to 30 percent slopes (AnD) and Boomer gravelly loam, 15 to 30 percent slopes (BkD) (Figure 3).

2.4 HABITATS

Habitat types at the site consist of mixed woodland, riparian forest, annual grassland and a seasonal drainage (Churn Creek North Branch) located off-site adjacent to the western and southwestern edges of the project site (Figure 4).

2.5 SURROUNDING LANDS

The site is situated near the boundary of the Great Central Valley Geomorphic Province and the Klamath Mountains Geomorphic Province, and bordered by an Sierra Pacific Industries Sawmill to the north, large undeveloped industrial-zoned parcels to the west/southwest, and by Ashby Road, beyond which are single family residences, to the east, south/southeast of the site. The site is located within the city limits of the City of Shasta Lake, approximately 5-miles north of downtown Redding, CA.

3 PROJECT DESCRIPTION

Manzanita Ranch Estates, LLC (MRE) proposes to develop a commercial cannabis cultivation, distribution, and manufacturing operation (project) at the site, identified as Shasta County APNs 006-020-056 and 006-020-057, located off of Ashby Road in the City of Shasta Lake, California (Figure 1). The proposed project will consist of two, Type 3, Tier 2 “Medium Mixed-Light” cultivation areas, an up to 10,080 square foot distribution facility, and an up to 20,000 square foot non-volatile manufacturing facility. Access roads will be installed providing vehicular access to the project area at the site, entering the site off of Ashby Road near the southeastern portion of the site.

Each proposed cultivation area will be comprised of six, state-of-the-art 5,040 square foot wood framed cultivation facilities on concrete slabs with metal and polycarbonate roofing and walls. One proposed cultivation area will be located on each parcel comprising the site. The proposed distribution facility will be comprised of two, 5,040 square foot wood-framed buildings on a concrete slab with insulated metal roofs and walls. One of the 5,040 square foot buildings of the distribution facility will be primarily used for processing raw cannabis material (drying, curing, trimming, grading, and packaging cannabis into large batches for testing), and the other will be primarily used for cannabis product distribution activities (storing, testing, packaging, labeling,

transferring, and transporting). The proposed manufacturing facility will consist of an up to 20,000 square foot metal building on a concrete slab, and will be primarily used for non-volatile cannabis manufacturing activities (extraction, infusion, testing, packaging, and labeling).

MRE plans to develop the proposed cannabis cultivation, distribution, and manufacturing operation in two phases. Phase one will be preparation and construction of the proposed cultivation and distribution facilities on APN 006-020-056; phase two will be the preparation and construction of the proposed cultivation and manufacturing facilities on APN 006-020-057.

All site developments, including access roads and parking areas, will be located at a distance of 50 feet or greater from the top of bank of Churn Creek North Branch. The installation and maintenance of barrier fencing along the 50-foot development setback buffer from site developments to the top of bank of Churn Creek North Branch will establish protection of riparian forest associated with Churn Creek North Branch during site developments. An undetermined number of trees are proposed to be removed as a result of the proposed project. Tree protection measures will be implemented at the site to protect the trees to be preserved and tree replacement is proposed for the trees to be removed. A Tree Removal and Replacement Plan will be in compliance with the City Shasta Lake Tree Conservation Ordinance Chapter 12.36.

A Stormwater Pollution Prevention Plan (SWPPP) has been prepared and submitted for review and approval to the State of California Water Resources Control Board. The SWPPP will be implemented prior to commencing construction activities at the site. As part of SWPPP and pre-field activities, adequate erosion and sediment controls will be installed and maintained during construction activities.

In accordance with the SWPPP, a basin to capture first flush rain events has been designed to capture the pre- versus post- runoff and discharge metered out through a small orifice. All structures/facilities will discharge all wastewater to a proposed Shasta County-permitted onsite wastewater treatment system. The project will avoid the archeological preservation area where a majority of the trees are proposed to be replanted.

The Site Plan is included in the figures section of this report.

4 REGULATORY CONTEXT

4.1 UNITED STATES FISH AND WILDLIFE SERVICE

The United States Fish and Wildlife Service (USFWS) administers the federal Endangered Species Act (ESA). Listed threatened and endangered species are protected from take, defined as direct or indirect harm, unless a Section 10 permit is granted to an entity other than a federal agency or a Biological Opinion with incidental take provisions is rendered to a federal lead agency via ESA Section 7 consultation. Pursuant to the requirements of ESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed species may be present in the study area and determine whether the proposed federal action will jeopardize the continued existence of the species.

Under ESA, habitat loss is considered to be an adverse effect to a species. In addition, the action agency is required to determine whether its action is likely to jeopardize the continued existence of any species that is proposed for listing under ESA or to result in the destruction or adverse modification of critical habitat proposed to be designated for such species. The USFWS also administers the federal Migratory Bird Treaty Act of 1918. Under this legislation, it is unlawful to destroy active nests, eggs, and young.

4.2 UNITED STATES ARMY CORPS OF ENGINEERS

The United States Army Corps of Engineers (USACE) administers the federal Clean Water Act (CWA). Section 404 of the CWA requires approval prior to discharging dredged or fill material into the waters of the United States. Waters of the United States includes essentially all surface waters such as all navigable waters and their tributaries, all interstate waters and their tributaries, all wetlands adjacent to these waters, and all impoundments of these waters. "Wetlands" are areas characterized by growth of wetland vegetation where the soil is saturated during a portion of the growing season or the surface is flooded during some part of most years. Wetlands generally include seasonally inundated wetlands, swamps, marshes, bogs and similar areas.

4.3 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

The California Department of Fish and Wildlife (CDFW) administers the California Endangered Species Act (CESA). It is state policy to conserve, protect, restore and enhance any endangered or threatened species and its habitat. The CDFW has jurisdiction over species that are formally listed as threatened or endangered under the CESA. The CESA provides broad protection for species of fish, wildlife and plants that are listed as threatened or endangered in the state. In addition to CESA, the California Native Plant Protection Act (NPPA) provides protection to endangered and rare plant species. The CDFW also maintains a list of species of special concern to be considered during CEQA review.

Pursuant to the requirements of CESA, a state or local agency reviewing a proposed project within its jurisdiction must determine whether any state-listed species may be present in the project area and determine whether the proposed project will have a potentially significant impact upon such species. If significant impacts to state listed species are identified, the state lead agency must adopt reasonable and prudent alternatives as specified by CDFW to prevent or mitigate for impacts. CDFW can authorize take of a state-listed species if an incidental take permit is issued by the Secretary of the Interior or Commerce in compliance with the federal ESA, or if the director of CDFW issues a permit under Section 2080 in those cases where it is demonstrated that the impacts are minimized and mitigated.

CDFW also administers the California Fish and Game Code. California Fish and Game Code Section 3503.5 makes it unlawful to take, possess or destroy birds in the Falconiformes (birds of prey, vultures, eagles, falcons) and Strigiformes (owls) families, which can include nest disturbance from construction and other activities.

4.4 STATE WATER RESOURCES CONTROL BOARD

The State Water Resources Control Board (SWRCB) administers the state CWA. Under Section 401 of the CWA, projects that apply for a USACE permit for discharge of dredge or fill material, and projects that qualify for a Nationwide Permit, must obtain water quality certification from the

Regional Water Quality Control Board (RWQCB) that the project will uphold state water quality standards. The SWRCB also administers the National Pollutant Discharge Elimination System (NPDES) which includes the General Permit for Storm Water Discharges from Construction Activities.

4.5 CALIFORNIA NATIVE PLANT SOCIETY

The California Native Plant Society (CNPS) is a non-profit group dedicated to preserving the state's native flora. It has developed lists of plants of special concern in California (Skinner and Pavlik 1994). In the spring of 2011, CNPS officially changed the name "CNPS List" to "California Rare Plant Rank" (CRPR). The definitions of the ranks and the ranking system have not changed, and the ranks are still used to categorize the same degrees of concern, which are described as follows:

CRPR 1A: The plants with a California Rare Plant Rank of 1A are presumed extinct because they have not been seen or collected in the wild in California for many years. This rank includes plants that are both presumed extinct as well as those plants which are presumed extirpated in California. A plant is extinct if it no longer occurs anywhere. A plant that is extirpated from California has been eliminated from California, but may still occur elsewhere in its range. All of the plants constituting California Rare Plant Rank 1A meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and are eligible for state listing. Should these taxa be rediscovered, it is mandatory that they be fully considered during preparation of environmental documents relating to the California Environmental Quality Act (CEQA).

CRPR 1B: Plants with a California Rare Plant Rank of 1B are rare throughout their range with the majority of them endemic to California. Most of the plants that are ranked 1B have declined significantly over the last century. California Rare Plant Rank 1B plants constitute the majority of taxa in the CNPS *Inventory*, with more than 1,000 plants assigned to this category of rarity. All of the plants constituting California Rare Plant Rank 1B meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and are eligible for state listing. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.

CRPR 2: Except for being common beyond the boundaries of California, plants with a California Rare Plant Rank of 2 would have been ranked 1B. From the federal perspective, plants common in other states or countries are not eligible for consideration under the provisions of the Endangered Species Act. Until 1979, a similar policy was followed in California. However, after the passage of the Native Plant Protection Act in 1979, plants were considered for protection without regard to their distribution outside the state. California Rare Plant Rank 2, recognizes the importance of protecting the geographic range of widespread species. In this way, diversity protection helps maintain evolutionary processes and genetic diversity within species. All of the plants constituting California Rare Plant Rank 2 meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and are eligible for state listing. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.

CRPR 3: The plants that comprise California Rare Plant Rank 3 are united by one common theme which is they lack the necessary information to assign them to one of the other ranks or to reject them. Nearly all of the plants constituting California Rare Plant Rank 3 are taxonomically problematic. For each California Rare Plant Rank 3 plant, the known information is indicated in the “Notes” section of the CNPS *Inventory* record where assistance is needed. Data regarding distribution, endangerment, ecology, and taxonomic validity are welcomed and can be submitted by calling the Rare Plant Botanist at (916) 324-3816. Some of the plants constituting California Rare Plant Rank 3 meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and are eligible for state listing. It is strongly recommended that California Rare Plant Rank 3 plants be evaluated for consideration during preparation of environmental documents relating to CEQA.

CRPR 4: The plants in this category are of limited distribution or infrequent throughout a broader area in California. While these plants can not be considered "rare" from a statewide perspective, they are uncommon enough that their status should be monitored regularly. Should the degree of endangerment or rarity of a California Rare Plant Rank 4 plant change, it is transferred to a more appropriate rank. Very few of the plants constituting California Rare Plant Rank 4 meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and few, if any, are eligible for state listing. Nevertheless, many of them are significant locally, and we strongly recommend that California Rare Plant Rank 4 plants be evaluated for consideration during preparation of environmental documents relating to CEQA.

5 LITERATURE REVIEW

The CDFW California Natural Diversity Data Base (CNDDB, May 2018) was queried for a list of all plant and animal species reported from the *Shasta Dam, Schell Mtn., Bohemotash Mtn., O'Brien, Whiskeytown, Project City, Igo, Redding, Enterprise* USGS 7.5-minute quadrangles. The Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS, May 2018) was queried for a list of all plant species reported from the *Shasta Dam, Schell Mtn., Bohemotash Mtn., O'Brien, Whiskeytown, Project City, Igo, Redding, Enterprise* USGS 7.5-minute quadrangles.

The following table (Table 1) is a list of special-status plant species that have the potential to occur within the study area solely based on the general habitat type(s) that each species is known to occur in and not based on species known proximity to the site or an evaluation of habitat quality. A full list of special-status plant species compiled is provided in Appendix A.

Table 1: Special-Status Plant Species with the Potential to Occur in the Study Area.

<u>Scientific Name</u>	<u>Common Name</u>	<u>Rare Plant Rank</u>	<u>State List</u>	<u>Federal List</u>	<u>Habitat</u>
<i>Agrostishendersonii</i>	Henderson's bent grass	3.2	None	None	Valley and foothill grassland (mesic), Vernal pools
<i>Allium sanbornii</i> var. <i>sanbornii</i>	Sanborn's onion	4.2	None	None	Chaparral, Cismontane woodland, Lower montane coniferous forest
<i>Anomobryumjulaceum</i>	slender silver moss	4.2	None	None	Broad-leafed upland forest, Lower montane coniferous forest, North Coast coniferous forest
<i>Arnica venosa</i>	Shasta County arnica	4.2	None	None	Cismontane woodland, Lower montane coniferous forest
<i>Astragaluspauperculus</i>	depauperate milk-vetch	4.3	None	None	Chaparral, Cismontane woodland, Valley and foothill grassland
<i>Brodiaeamatsonii</i>	Sulphur Creek brodiaea	1B.1	None	None	Cismontane woodland (streambanks), Meadows and seeps
<i>Bulbostyliscapillaris</i>	thread-leaved beakseed	4.2	None	None	Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest
<i>Clarkia borealis</i> ssp. <i>borealis</i>	northern clarkia	1B.3	None	None	Chaparral, Cismontane woodland, Lower montane coniferous forest
<i>Cryptanthacrinita</i>	silky cryptantha	1B.2	None	None	Cismontane woodland, Lower montane coniferous forest, Riparian forest, Riparian woodland, Valley and foothill grassland
<i>Cypripedium fasciculatum</i>	clustered lady's-slipper	4.2	None	None	Lower montane coniferous forest, North Coast coniferous forest
<i>Cypripedium montanum</i>	mountain lady's-slipper	4.2	None	None	Broad-leafed upland forest, Cismontane woodland, Lower montane coniferous forest, North Coast coniferous forest
<i>Erythranthetaylorii</i>	Shasta limestone monkeyflower	1B.1	None	None	Cismontane woodland, Lower montane coniferous forest
<i>Erythroniumshastense</i>	Shasta fawn lily	1B.2	None	None	Cismontane woodland, Lower montane coniferous forest
<i>Juncusleiospermus</i> var. <i>leiospermus</i>	Red Bluff dwarf rush	1B.1	None	None	Chaparral, Cismontane woodland, Meadows and seeps, Valley and foothill grassland, Vernal pools
<i>Lathyrussulphureus</i> var. <i>argillaceus</i>	dubious pea	3	None	None	Cismontane woodland, Lower montane coniferous forest, Upper montane coniferous forest
<i>Lewisiacantelovii</i>	Cantelow'slewisia	1B.2	None	None	Broad-leafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest
<i>Neviusiacliftonii</i>	Shasta snow-wreath	1B.2	None	None	Cismontane woodland, Lower montane coniferous forest, Riparian woodland
<i>Sedum obtusatum</i> ssp. <i>paradisum</i>	Canyon Creek stonecrop	1B.3	None	None	Broad-leafed upland forest, Chaparral, Lower montane coniferous forest, Subalpine coniferous forest
<i>Sidalceacelata</i>	Redding checkerbloom	3	None	None	Cismontane woodland
<i>Smilax jamesii</i>	English Peak greenbrier	4.2	None	None	Broad-leafed upland forest, Lower montane coniferous forest, Marshes and swamps, North Coast coniferous forest, Upper montane coniferous forest
<i>Thermopsisgracilis</i>	slender false lupine	4.3	None	None	Chaparral, Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest
<i>Vacciniumshastense</i> ssp. <i>shastense</i>	Shasta huckleberry	1B.3	None	None	Chaparral, Cismontane woodland, Lower montane coniferous forest, Riparian forest, Subalpine coniferous forest

The following table (Table 2) is a list of special-status animal species that have the potential to occur in habitats within or adjacent to the study area based on the general habitat type(s) that each species is known to occur in and not based on species known proximity to the site or an evaluation of habitat quality. A full list of special-animal species is provided in Appendix B.

Table 2: Special-Status Animal Species with the Potential to Occur in or Adjacent to the Study Area.

<u>Scientific Name</u>	<u>Common Name</u>	<u>Federal List</u>	<u>State List</u>	<u>Dept. Fish and Wildlife Rank</u>	<u>Habitat</u>
<i>Agelaius tricolor</i>	tricolored blackbird	None	Candidate Endangered	Special Concern	Freshwater marsh Marsh & swamp Swamp Wetland
<i>Antrozous pallidus</i>	pallid bat	None	None	Special Concern	Chaparral Coastal scrub Desert wash Great Basin grassland Great Basin scrub Mojavean desert scrub Riparian woodland Sonoran desert scrub Upper montane coniferous forest Valley & foothill grassland
<i>Corynorhinustownsendii</i>	Townsend's big-eared bat	None	None	Special Concern	Broadleaved upland forest Chaparral Chenopod scrub Great Basin grassland Great Basin scrub Joshua tree woodland Lower montane coniferous forest Meadow & seep Mojavean desert scrub Riparian forest Riparian woodland Sonoran desert scrub Sonoran thorn woodland Upper montane coniferous forest Valley & foothill grassland
<i>Desmocercuscalifornicusdimorphus</i>	valley elderberry longhorn beetle	Threatened	None	None	Riparian scrub
<i>Emysmarmorata</i>	western pond turtle	None	None	Special Concern	Aquatic Artificial flowing waters Klamath/North coast flowing waters Klamath/North coast standing waters Marsh & swamp Sacramento/San Joaquin flowing waters Sacramento/San Joaquin standing waters South coast flowing waters South coast standing waters Wetland
<i>Falco peregrinusanatum</i>	American peregrine falcon	Delisted	Delisted	Fully Protected	* Habitat types not included by CNDDB
<i>Haliaeetusleucocephalus</i>	bald eagle	Delisted	Endangered	Fully Protected	Lower montane coniferous forest Oldgrowth
<i>Hydromantesshastae</i>	Shasta salamander	None	Threatened	None	Cismontane woodland Limestone
<i>Lasiurusblossevillii</i>	western red bat	None	None	Special Concern	Cismontane woodland Lower montane coniferous forest Riparian forest Riparian woodland
<i>Oncorhynchus mykiss irideus pop. 11</i>	steelhead - Central Valley DPS	Threatened	None	None	Aquatic Sacramento/San Joaquin flowing waters

<u>Scientific Name</u>	<u>Common Name</u>	<u>Federal List</u>	<u>State List</u>	<u>Dept. Fish and Wildlife Rank</u>	<u>Habitat</u>
<i>Oncorhynchusshawytscha</i> pop. 6	chinook salmon - Central Valley spring-run ESU	Threatened	Threatened	None	Aquatic Sacramento/San Joaquin flowing waters
<i>Oncorhynchusshawytscha</i> pop. 7	chinook salmon - Sacramento River winter-run ESU	Endangered	Endangered	None	Aquatic Sacramento/San Joaquin flowing waters
<i>Rana boylei</i>	foothill yellow-legged frog	None	Candidate Threatened	Special Concern	Aquatic Chaparral Cismontane woodland Coastal scrub Klamath/North coast flowing waters Lower montane coniferous forest Meadow & seep Riparian forest Riparian woodland Sacramento/San Joaquin flowing waters
<i>Ripariariparia</i>	bank swallow	None	Threatened	None	Riparian scrub Riparian woodland
<i>Speahammondii</i>	western spadefoot	None	None	Special Concern	Cismontane woodland Coastal scrub Valley & foothill grassland Vernal pool Wetland

6 STUDY METHODS

6.1 SPECIAL-STATUS PLANT SPECIES SURVEYS

Special-status plant species surveys were performed by Russell Burkett, a qualified botanist, on April 12, 2018 and May 12, 2018 and by Darren Wiemeyer, a qualified biologist, on July 16, 2018. All areas within the project site were surveyed and assessed, which consisted of evaluating all habitat types for suitability to support special-status plant species. Surveys used systematic field techniques to ensure complete coverage of the site. The site was traversed in parallel transects on foot. Multiple overlapping parallel transects were carried out through the riparian area to obtain necessary coverage due to the increased structural complexity of the riparian vegetation. The entire site was surveyed on foot until the entire site was covered. Of the plant species encountered, those that were identifiable, either by bloom or vegetation, were documented and recorded. Any specimens that were not likely to be special-status and required keying were taken for identification.

A Plant Inventory List containing species that were observed is included as Appendix C.

6.2 TREE ASSESSMENT AND TREE INVENTORY

John Alderson, a qualified arborist, performed multiple site visits during April of 2018 to map tree communities, assess tree habitat suitability for wildlife, inventory trees on the site and assess the health and condition of trees on the site. Information/data collected during the site visits were used to develop an Arborist Report (Appendix D) consistent with the requirements of the City of Shasta

Lake Tree Conservation Ordinance. In addition, a Tree Removal and Replacement Checklist is included in compliance with the City of Shasta Lake Tree Conservation Ordinance that identifies each tree species and its location on the site that is proposed to be removed (Appendix D).

6.3 SPECIAL-STATUS ANIMAL SPECIES HABITAT ASSESSMENT AND WILDLIFE INVENTORY

Darren Wiemeyer, a qualified biologist, performed site visits on May 20 and July 16, 2018. The site visits were performed to map habitat communities, assess habitat suitability for special-status animal species, survey for large bird nests and perform a wildlife inventory. Special-status animal species habitat assessment consisted of evaluating habitats for habitat suitability for special-status animal species that have the potential to utilize habitats at the site and in the vicinity of the site. The determination of presence for special-status animal species possibly occurring at the site was based on habitat assessments, literature review and queries through CNDDDB. Protocol-level surveys for potentially occurring special-status animal species were not conducted for all species.

All areas within the site and accessible adjacent lands were surveyed and assessed, which consisted of evaluating all habitat types for suitability to support special-status animal species. A meandering pattern was walked through each habitat to ensure that all areas were viewed. All wildlife species observed in the field were documented.

6.3.1 Birds

Trees were generally surveyed for the presence of rookeries and large nests that could be used by special-status birds, including birds of prey. The surveys focused on areas within and adjacent to the project site. Searches for passerine bird nests were not performed.

Binoculars were used to search in trees and other suitable nesting structures. If a bird was seen, its behavior was observed to determine if it was actively nesting in the area. Common nesting behavior by birds include collecting nesting materials, bringing food items to a nest and vocalizations to attract a mate and to establish or defend a nesting territory.

The site was evaluated for habitat suitability for a variety of bird species. The mixed woodland, annual grassland and riparian forest habitat associated with the seasonal drainage were assessed for habitat suitability for bank swallow (*Riparia riparia*), bald eagle (*Haliaeetus leucocephalus*), American peregrine falcon (*Falco peregrinus anatum*) and tricolored blackbird (*Agelaius tricolor*).

6.3.2 Mammals

The mixed woodland and riparian forest habitats were assessed to determine for habitat suitability for mammal species including bat species.

6.3.2.1 Bats

A bat habitat assessment was performed at the site. The habitats, primarily in the form of trees, were assessed to determine if suitable special-status bat nesting or roosting structures were exhibited in the trees. Suitable roosting and nesting structures are typically tree cavities, fissures and exfoliating bark.

6.3.3 Amphibians and Reptiles

The riparian forest habitat and seasonal drainage was surveyed to obtain a general description of habitat features and aquatic habitat characteristics. A general assessment of the riparian and aquatic habitat suitability for special-status amphibians, including Shasta salamander (*Hydromantes shastae*), foothill yellow-legged frog (*Rana boylei*), Western spadefoot (*Spea hammondi*) and western pond turtle (*Emys marmorata*) was performed.

6.3.4 Fishes

The riparian forest habitat and seasonal drainage was surveyed to obtain a general description of habitat features and aquatic habitat characteristics. A general assessment of the aquatic habitat suitability for fishes including steelhead (*Oncorhynchus mykiss irideus*) and chinook (*Oncorhynchus tshawytscha*) was performed.

6.3.5 Invertebrates

The project site was surveyed to obtain a general description of habitat features and aquatic habitat characteristics. A general assessment of the riparian and aquatic habitat suitability for special-status invertebrates, including valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) and its' obligate host plant (*Sambucus* species) was performed.

6.4 WETLAND DETERMINATION AND MAPPING OF WATERS OF THE UNITED STATES/STATE

Darren Wiemeyer, a qualified biologist, performed site visits on May 20 and July 16, 2018. The entire site was viewed as well as the Churn Creek North Branch that occurs at the extreme southern end of the site (Figure 4). The entire site was searched for any indication of seasonal wetland habitat at the site. These searches included looking for a dominance of wetland plants, topographic depressions and wetland hydrologic indicators such as saturated or ponded soils, algal matting and cracked soil. In addition, Churn Creek North Branch was characterized by obtaining the estimated width of the stream channel, estimated width of Ordinary High Water Mark (OHWM) and estimated width of the bankfull channel from top of bank to top of bank.

7 RESULTS AND DISCUSSION

7.1 PLANT COMMUNITIES & HABITATS

Habitat types at the site are categorized as consisting of mixed woodland, annual grassland, and riparian forest associated with Churn Creek North Branch (Figure 4). Natural communities at the site have characteristics of Foothill pine series (CNPS 1997), mixed oak savanna, valley meadows, and willow thicket.

7.1.1 Mixed Woodland

Mixed woodland occurs in various areas throughout the site and is interspersed with annual grassland habitat at the site (Figure 4). Dominant species include California foothill pine (*Pinus sabiniana*), blue oak (*Quercus douglasii*), black oak (*Quercus kelloggii*), and interior live oak (*Quercus wislizeni*), with an understory of whiteleaf manzanita (*Arctostaphylos viscida*), poison

oak (*Toxicodendron diversilobum*) and volunteer grasses and introduced annuals. Many of the interior live and blue oaks on the project site have been harvested, presumably for fire wood, and there is evidence that the entire property experienced a fire 20 plus years ago.

7.1.2 Annual Grassland

Annual grassland occurs throughout the site and also occurs within the mixed woodland habitat at the site (Figure 4). Dominant species include tarweed fiddleneck (*Amsinckia lycopoides*), Common stork's bill (*Erodium cicutarium*), Cutleaf geranium (*Geranium dissectum*), smallhead clover (*Trifolium microcephalum*), hairy vetch (*Vicia villosa*), slender wild oat (*Avena barbata*), common wild oat (*Avena fatua*), rough dog's-tail (*Cynosurus echinatus*) and Italian ryegrass (*Festuca perennis*).

7.1.3 Riparian Forest

The riparian forest habitat is associated with the seasonal drainage located primarily off-site along the western and southwestern edges of the project site (Figure 4). The riparian forest corridor is mostly a well-defined riparian corridor. The northern portion of this habitat type exhibits willow thickets and thick, impenetrable riparian vegetation. Dominant species include Fremont cottonwood (*Populus fremontii*), blue oak, interior live oak, poison oak (*Toxicodendron diversilobum*), California pipevine (*Aristolochia californica*), Himalayan blackberry (*Rubus armeniacus*) and Pacific blackberry (*Rubus ursinus*). Typical species observed within and adjacent to the seasonal drainage include seep monkeyflower (*Mimulus guttatus*), California mugwort (*Artemisia douglasiana*), pennyroyal (*Mentha pulegium*), narrowleaf cattail (*Typha angustifolia*) and soft rush (*Juncus effusus*).

Riparian forest habitat is a sensitive habitat type that falls within the jurisdiction of the CDFW.

7.1.4 Seasonal Drainage (Churn Creek North Branch)

Churn Creek North Branch is a seasonal drainage which originates from ephemeral drainages and stormwater runoff from Digger Bay Road north of the City of Shasta Lake. From its headwaters, Churn Creek North Branch flows south into the City of Shasta Lake under Shasta Dam Boulevard and adjacent to Sierra Pacific Industries log deck detention basin. From the detention basin, Churn Creek North Branch flows southeast off-site along the western and southwestern edges of the project site and only flow onto the site at the far southern corner of the site (Figure 4).

The northern portion of Churn Creek North Branch adjacent to the site is wide with several side channels with a bankfull channel width ranging from 20 to 30 feet. There are several pools surrounded by thick riparian vegetation with a substrate consisting primarily of soil, sands and vegetation. The southern portion of Churn Creek North Branch adjacent to the site becomes more defined and narrow with a channel width that ranges from 3 to 6 feet wide and a bankfull channel ranging from 4 to 12 feet in width and a depth of 3 to 6 feet. This portion exhibits minimal meandering with a pool and riffle complex and a substrate consisting of bedrock, cobbles and gravels. This portion exhibits undercut banks, exposed roots and vegetated banks.

Churn Creek North Branch adjacent to the site may exhibit artificially late flows into mid-summer as a result of water discharges from the Sierra Pacific Industries Sawmill log deck detention basin discharges. These discharges may also contribute to higher water temperatures and lower oxygen

levels. Churn Creek North Branch would be considered Waters of the United States and Waters of the State and falls within the jurisdiction of the USACE, SWRCB and CDFW.

7.2 WETLAND DETERMINATION AND MAPPING OF WATERS OF THE UNITED STATES/STATE

The wetland determination field work did not result in the identification of any seasonal wetland habitat at the site. Churn Creek North Branch was characterized by obtaining the estimated width of the stream channel, estimated width of Ordinary High Water Mark (OHWM) and estimated width of the bankfull channel from top of bank to top of bank. The portion of Churn Creek North Branch on the site exhibits a channel width that ranges from 3 to 6 feet wide, an OHWM that ranges from 4 to 8 feet wide, and a bankfull channel that ranges from 4 to 12 feet wide.

7.3 SPECIAL-STATUS PLANTS

No special-status plant species were observed during the three special-status plant species surveys at the site. The mixed woodland habitat provides good habitat suitability for special-status plant species as it is mostly intact and undisturbed. Northern clarkia (*Clarkia borealis* ssp. *Borealis*) and Redding checkerbloom (*Sidalcea celata*) are the most likely special-status plant species to occur in this habitat type, but these species were not observed.

The annual grassland habitat exhibits lower habitat suitability for special-status plant species as these areas include non-native annual grasses and other weedy species. It is highly unlikely that any special-status plant species occurs in this habitat type at the site. Shasta huckleberry (*Vaccinium shastense* ssp. *shastense*) and Sulphur-creek brodiaea (*Brodiaea matsonii*) are the most likely special-status plant species to occur in this habitat type, but these species were not observed.

The riparian forest habitat has moderate suitability to support special-status plant species as this riparian corridor is intact and contain mostly native species. Silky cryptantha (*Cryptantha crinita*) and Shasta snow wreath (*Neviusia cliftonii*) are the most likely special-status plant species to occur in this habitat type, but these species were not observed.

Therefore, it has been determined that the proposed project will not impact any special-status plant species.

7.4 WILDLIFE

The site provides habitat for a diverse variety of wildlife species as the site and surrounding lands has intact mixed woodland, annual grassland, riparian forest and an associated seasonal drainage. A variety of birds, amphibians, reptiles and small- to large-sized mammals are expected to utilize these habitats as rearing, foraging and refuge habitat. Bat species are expected to roost in trees which contain roosting features, such as exfoliating bark and cavities. Although no heron or egret rookeries were observed, the riparian forest provides suitable nesting habitat for these bird species. In addition, many of the larger trees provide suitable nesting habitat for birds of prey and all the trees on the site provides suitable nesting habitat for native passerine birds.

The seasonal drainage and riparian forest corridor would be considered a wildlife corridor and is expected to provide excellent nesting habitat for a variety of birds and bat species and as foraging and refuge habitat for birds, amphibians, reptiles and small- to large-sized mammals.

Wildlife species that were observed either through direct observation, heard, tracks observed, scat observed, or other indication during the site surveys include dark eyed junco, northern flicker, acorn woodpecker, California quail, American goldfinch, Canada goose, common raven, bushtit, red-tailed hawk, song sparrow, wren, scrub jay, western wood peewee, unknown vireo, rufous-sided towhee, Say's phoebe, purple finch, house wren, white-crowned sparrow, yellow-breasted chat, common yellowthroat, unknown flycatcher, fence lizard, gray squirrel, wood rat, mule deer, pocket gopher, jack rabbit, unknown fossorial rodent (mole or vole), mosquito fish and Louisiana crayfish.

7.5 SPECIAL-STATUS ANIMAL SPECIES

7.5.1 Birds

7.5.1.1 Bank Swallow

Conservation Status: State - Threatened

Bank swallow (*Riparia riparia*) is a colonial nester that nests primarily in riparian and other lowland habitats. This species requires vertical banks and cliffs with fine textured/sandy soils near streams, rivers, lakes and ocean to dig nesting holes. The seasonal drainage and associated riparian forest habitat provides potentially suitable habitat for this species, but the seasonal drainage does not contain sandy vertical banks or cliffs.

There are no CNDDDB occurrences of this species within 5 miles of the site (Figure 5). It is highly unlikely that species utilizes habitats at the site. This species was not observed at the site. The proposed project will avoid impacts to riparian forest habitat at the site. Therefore, it has been determined that there will be no significant impact to this species as a result of the proposed project.

7.5.1.2 Tricolored Blackbird

Conservation Status: State - Candidate Endangered; CDFW- Species of Special Concern

Tri-colored blackbird (*Agelaius tricolor*) is a highly colonial species and is largely endemic to California. It requires open water, protected nesting substrate and a foraging area with insect prey. It is known to nest in freshwater marshes with dense emergent vegetation. The upper portion of the seasonal stream adjacent to the site provides potentially suitable habitat for this species as it contains emergent vegetation and thick riparian vegetation. It is somewhat unlikely that this species utilizes habitats at the site.

There are no CNDDDB occurrences of this species within 5 miles of the site (Figure 5). This species was not observed at the site. There is moderate likelihood that species occurs within the offsite, upper reaches of the riparian forest associated with Churn Creek North Branch. The proposed project will avoid impacts to the riparian forest habitat at the site. Therefore, it has been determined that there will be no significant impact to this species as a result of the proposed project.

7.5.1.3 American Peregrine Falcon

Conservation Status: State - CDFW- Fully Protected

American peregrine falcon (*Falco peregrinus anatum*) occurs near wetlands, lakes, rivers and other water. This species occurs on cliffs, banks, dunes, mounts and human-made structures. Nests consist of a scrape or depression or ledge in an open site.

There are no CNDDDB occurrences of this species within 5 miles of the site (Figure 5). It is highly unlikely that species utilizes habitats at the site as there is not suitable nesting habitat or structures for this species. This species was not observed at the site. Therefore, it has been determined that there will be no significant impact to this species as a result of the proposed project.

7.5.1.4 Bald Eagle

Conservation Status: State - Endangered; CDFW- Fully Protected

Bald eagle (*Haliaeetus leucocephalus*) occurs near open water including ocean shore, lake margins and rivers for both nesting and wintering in lower montane coniferous forest and oldgrowth. This species roosts communally in the winter.

There are several CNDDDB occurrences of this species within 5 miles of the site (Figure 5). The nearest CNDDDB occurrence of this species is approximately 3.9 miles to the southeast of the site at an unnamed lake and 4.1 north of the site at Lake Shasta. The seasonal drainage at the site does not contain large bodies of open water for foraging and therefore would not be this species preferred habitat. It is highly unlikely that this species occurs in the seasonal drainage and associated riparian forest at the site. This species was not observed at the site. The proposed project will avoid impacts to the seasonal drainage and the riparian forest habitat at the site. All site developments are located 50-feet or greater from the top of bank of the seasonal drainage at the site. Therefore, it has been determined that there will be no significant impact to this species as a result of the proposed project.

7.5.2 Mammals

7.5.2.1 Special-Status Bat Species

All special-status bat species, including several bat species which do not have special status, but have potential to occur in habitats at the site, have been included in this evaluation of habitat suitability and discussion of potential impacts. All bat species have state protection during nesting and roosting seasons. The following bat species are included in this habitat assessment:

Pallid Bat (*Antrozous pallidus*) - Conservation Status: CDFW – Species of Special Concern

Day roost habitat requirements include caves, crevices, mines, tree/snag cavities, buildings and bridges.

Townsend's Big-Eared Bat (*Corynorhinus townsendii*) - Conservation Status: State - Candidate Threatened; CDFW - Species of Special Concern

Day roost habitat requirements include caves, mines, tunnels, buildings, rock crevices and large tree/snag cavities.

Big brown bat (*Eptesicus fuscus*) - Conservation Status: None

Day roost habitat requirements include buildings, bridges, caves, mines, rock crevices and large tree/snag cavities.

Spotted bat (*Euderma maculatum*) - Conservation Status: CDFW – Species of Special Concern

Day roost habitat requirements include cliffs, rocky outcrops, rock crevices, caves and buildings.

Western mastiff bat (*Eumops perotis*) - Conservation Status: CDFW – Species of Special Concern

Day roost habitat requirements include cliffs, rocky outcrops, rock crevices.

Western red bat (*Lasiurus blossevillei*) – Conservation Status: CDFW – Species of Special Concern

Day roost habitat requirements include foliage of trees and large shrubs, commonly in riparian corridors.

Hoary Bat (*Lasiurus cinereus*) – Conservation Status: None

Day roost habitat requirements include foliage of trees and tree/snag cavities.

Silver-haired bat (*Lasionycteris noctivagans*) - Conservation Status: None

Day roost habitat requirements include tree/snag cavities, buildings, rock crevices, caves, exfoliating bark of large diameter trees.

California myotis (*Myotis californicus*) - Conservation Status: None

Day roost habitat requirements include crevices of buildings, caves, mines, and exfoliating bark.

Western small-footed myotis (*Myotis ciliolabrum*) - Conservation Status: None

Day roost habitat requirements include crevices of buildings, caves, mines, and exfoliating bark.

Long-eared myotis (*Myotis evotis*) - Conservation Status: None

Day roost habitat requirements include exfoliating bark, tree/snag cavities, caves, mines, cliffs, and rocky outcrops.

Little brown bat (*Myotis lucifugus*) - Conservation Status: None

Day roost habitat requirements include buildings, trees/snag cavities, caves and rock crevices.

Fringed Myotis (*Myotis thysanodes*) – Conservation Status: None

Day roost habitat requirements include crevices in buildings, caves, mines, cliffs, rocks, bridges, exfoliating bark, and tree/snag cavities.

Long-legged myotis (*Myotis volans*) – Conservation Status: None

Day roost habitat requirements include rock crevices, buildings, caves, exfoliating bark, tree/snag cavities, mines and caves.

Yuma myotis (*Myotis yumanensis*) – Conservation Status: None

Day roost habitat requirements include rock crevices in buildings, caves, mines, cliffs, rocks, bridges, and tree/snag cavities.

Western canyon bat (*Parastrellus hesperus*) - Conservation Status: None

Day roost habitat requirements include rock crevices, rocky outcrops, cliffs, mines and caves.

Mexican free-tailed bat (*Tadaridabrasiliensis*) - Conservation Status: None

Day roost habitat requirements include crevices in buildings, caves, mines and bridges.

Bats are known to utilize a vast variety of habitat types for foraging and several types of structures for nesting and roosting including trees and snags, cliffs, rock outcrops, foliage, buildings, bridges, caves and mines. The mixed woodland and riparian forest habitats at the site provides suitable roosting habitat for bats as some of the trees exhibit cavities, fissures or exfoliating bark, foliage and/or snag cavities suitable to bat species. Those species which have more likelihood of occurring at the site include those species which utilize these microhabitats commonly associated with mixed woodland and riparian forest. The bat species most likely to roost at the site include most of those listed above. However, the spotted bat, Western mastiff bat, Western canyon bat and Mexican free-tailed bat tend to be more associated with rocky outcrops, buildings, caves, mines, cliffs, and/or bridges and are therefore less likely to occur in the mixed woodland and riparian forest habitats at the site but may use those habitats and the annual grassland habitat for foraging.

There is one CNDDDB occurrences of a bat species within 5 miles of the site (Figure 5). A silver-haired bat occurrence is known to occur approximately 3.8 miles to the south of the site. Bat species were not observed at the site. The proposed project will avoid riparian forest habitat at the site. However, the removal of an undetermined number of trees at the site has the potential to significantly impact bat species. Therefore, it has been determined that there may be a significant impact to this species as a result of the proposed project without appropriate avoidance and mitigation measures.

7.5.3 Amphibians and Reptiles

7.5.3.1 Western Pond Turtle

Conservation Status: CDFW - Species of Special Concern

Western pond turtle (*Emys marmorata*) occur in reservoirs, ponds, vernal pools, brackish estuaries, sloughs, drainage ditches, and perennial streams. This species requires basking sites and suitable upland habitat adjacent to aquatic habitats for egg-laying. Basking sites are typically logs, small islands and docks. The upland areas typically used by this species include sandy banks or grassy open fields. The seasonal drainage provides potentially suitable habitat for this species, primarily in the upper reaches where several pools occur within the seasonal stream.

There are several CNDDDB occurrences of this species within 5 miles of the site with the nearest occurrence approximately 2.2 miles to the east of the site (Figure 5). The seasonal drainage associated with the riparian forest does have suitable habitat for this species at the northern portion of the drainage where it widens and contains deeper pools within the drainage channel and

therefore it is possible that this species occur on or adjacent to the site. This species was not observed at the site.

The proposed project will avoid impacts to the seasonal drainage and the riparian forest habitat at the site. All site developments will be located 50 feet or greater from the top of bank of the seasonal drainage at the site. Implementation of adequate erosion and sediment control measures and proper material handling and storage during construction activities will avoid sedimentation and other potential pollutants from entering drainages and downstream aquatic habitats.

There is moderate likelihood that this species occurs within the offsite, upper reaches of the riparian forest associated with Churn Creek North Branch. Although this species is known to stay within stream channels and its riparian corridor, there is some possibility that it can travel outside of the riparian corridor and into proposed site development areas. Therefore, it has been determined that there may be a significant impact to this species as a result of the proposed project without appropriate avoidance and mitigation measures.

7.5.3.2 *Shasta Salamander*

Conservation Status: State - Threatened

Shasta salamander (*Hydromantes shastae*) occurs near cliff faces, vertical cavern walls, and level ground in mixed coniferous forest. This species prefers cool and moist ravines and valleys including caves and rock cracks and surface objects such as logs, rocks and limestone slabs or talus near limestone fissures or caves.

There is one CNDDDB occurrence of this species within 5 miles northeast of the site, located 4.5 miles to the northeast of the site (Figure 5). It is highly unlikely that species utilizes habitats at the site. This species was not observed on the site.

The proposed project will avoid impacts to the seasonal drainage and the riparian forest habitat at the site. All site developments will be located 50 feet or greater from the top of bank of the seasonal drainage at the site. Implementation of adequate erosion and sediment control measures and proper material handling and storage during construction activities will avoid sedimentation and other potential pollutants from entering drainages and downstream aquatic habitats. Therefore, it has been determined that there will be no significant impact to this species as a result of the proposed project.

7.5.3.3 *Foothill Yellow-Legged Frog*

Conservation Status: State – Candidate Threatened; CDFW – Species of Special Concern

Foothill yellow-legged frog (*Rana boylei*) occurs in shallow streams with a rocky substrate. They need at least some cobble-sized substrate for egg-laying. This species typically stays within the confines of a stream channel and its riparian corridor. The seasonal drainage provides suitable habitat for this species. The seasonal drainage contains pools, riffles, cobble-sized substrate, undercut banks and exposed roots that this species prefer.

There are several CNDDDB occurrences of this species within 5 miles of the site with the nearest occurrence in 3.2 miles to the northwest of the site (Figure 5). It is somewhat likely that this species occurs in the seasonal drainage at the site. This species was not observed at the site.

The proposed project will avoid impacts to the seasonal drainage and associated riparian forest habitat at the site. All site developments will be located 50 feet or greater from the top of bank of the seasonal drainage at the site. Implementation of adequate erosion and sediment control measures and proper material handling and storage during construction activities will avoid sedimentation and other potential pollutants from entering drainages and downstream aquatic habitats. Although this species is known to stay within stream channels and its riparian corridor, there is some possibility that it can travel outside of the riparian corridor and into proposed site development areas. Therefore, it has been determined that there may be a significant impact to this species as a result of the proposed project without appropriate avoidance and mitigation measures.

7.5.3.4 Western Spadefoot

Conservation Status: CDFW- Species of Special Concern

Western spadefoot (*Spea hammondi*) occurs primarily in grassland habitats but can also be found in valley-foothill hardwood woodlands. Vernal pools and other pools with similar features (vernal playas, stock tanks, pools formed at base of roads and railroad grades and certain intermittent streams with isolated pools, etc.) are essential for breeding and egg-laying. Larvae require turbid pools with little or no cover. Habitat characteristics of adults and juveniles are similar.

There are no CNDDDB occurrences of this species within 5 miles of the site (Figure 5). It is unlikely that this species utilizes habitats at the site, but the seasonal drainage provides potentially suitable habitat for this species. This species was not observed at the site.

The proposed project will avoid impacts to the seasonal drainage and associated riparian forest habitat at the site. All site developments will be located 50 feet or greater from the top of bank of the seasonal drainage at the site. Implementation of adequate erosion and sediment control measures and proper material handling and storage during construction activities will avoid sedimentation and other potential pollutants from entering drainages and downstream aquatic habitats. Therefore, it has been determined that there will be no significant impact to this species as a result of the proposed project.

7.5.4 Fishes

7.5.4.1 Steelhead – Central Valley DPS

Conservation Status: State – Threatened

Steelhead (*Oncorhynchus mykiss*) (Steelhead trout) is the sea-run form of rainbow trout. Steelhead that belong to the Central Valley (CV) Distinct Population Segment (DPS), which is listed under the ESA as a threatened species (NMFS 1998, 2006) includes all naturally spawned populations of CV Steelhead in the Sacramento and San Joaquin rivers and their tributaries. CV DPS upstream spawning migration occurs from the late fall through spring. Unlike other Pacific Coast salmonid species, not all CV DPS die after spawning. Spawning occurs in relatively shallow water, typically riffles, pool tail outs, or shallow runs at depths ranging from 0.2 meter to 1.0 meters. Preferred spawning substrate is gravel ranging from 0.3 cm to 10 cm in diameter.

Although there are no CNDDDB occurrences of this species within 5 miles of the site (Figure 5), known occurrences of this species (*Oncorhynchus mykiss irideus* population 11) in the vicinity of the site includes Sacramento River to the south and southwest of the site just outside of the 5-mile radius of the site. The Sacramento River passes through along the western area within the 5-mile radius from the site. Reaches of Churn Creek can provide marginally suitable spawning habitat for anadromous CV DPS (Analytical Environmental Services 2014). Although water quality parameters such as temperature and dissolved oxygen are suitable for CVS DPS spawning, much of the suitable spawning substrate (gravel and cobble) are highly embedded which reduces the potential of Churn Creek to support successful spawning of CVS DPS.

Although this species has the potential to occur in Churn Creek (Graham Mathews & Associates, 2008), it is significantly more unlikely that this species would occur in Churn Creek North Branch as this tributary is a small, low-gradient seasonal stream that does not contain suitable spawning habitat in the portion of the seasonal drainage adjacent to the site. Furthermore, barriers upstream within the City of Shasta Lake provide a significant migration barrier to anadromous fish to any potential spawning habitat in the headwaters of Churn Creek North Branch. Based on this evaluation, it has been determined that it is highly unlikely that steelhead occurs in Churn Creek North Branch.

The proposed project will avoid impacts to Churn Creek North Branch and the riparian forest habitat at the site. All site developments will be located 50 feet or greater from the top of bank of this seasonal drainage at the site. Implementation of adequate erosion and sediment control measures and proper material handling and storage during construction activities will avoid sedimentation and other potential pollutants from entering drainages and downstream aquatic habitats. Therefore, it has been determined that there will be no significant impact to this species as a result of the proposed project.

7.5.4.2 Chinook Salmon – Central Valley Spring-Run ESU

Conservation Status: Federal - Threatened; State - Threatened

Chinook salmon (*Oncorhynchus tshawytscha*) that belong to the Central Valley (CV) Distinct Population Segment (DPS), which is listed under the ESA as a threatened species (NMFS 1999, 2005) includes all naturally spawned populations of spring-run Chinook Salmon in the Sacramento River and its tributaries in California, including Churn Creek. CV DPS upstream spawning migration occurs January through September.

Although there are no CNDDDB occurrences of this species within 5 miles of the site (Figure 5), known occurrences of this species (*Oncorhynchus tshawytscha* population 6) in the vicinity of the site includes Sacramento River to the south and southwest of the site just outside of the 5-mile radius of the site. The Sacramento River passes through along the western area within the 5-mile radius from the site. This species may utilize the Sacramento River at the mouth of Churn Creek as a non-natal rearing area, but are not known to use any upstream areas within Churn Creek (Analytical Environmental Services 2014). Sexually immature fish must remain in freshwater for up to several months before spawning and maturing adults remain in deep pools with cold water (Graham Mathews & Associates, 2008).

The Churn Creek North Branch at the site is a small, low-gradient seasonal stream that does not contain suitable spawning habitat in the portion of the seasonal drainage adjacent to the site. Furthermore, barriers upstream within the City of Shasta Lake provide a significant migration barrier to anadromous fish to any potential spawning habitat in the headwaters of Churn Creek North Branch. Based on this evaluation, it has been determined that it is highly unlikely that Chinook salmon occurs in Churn Creek North Branch.

The proposed project will avoid impacts to Churn Creek North Branch and the riparian forest habitat at the site. All site developments will be located 50 feet or greater from the top of bank of this seasonal drainage at the site. Implementation of adequate erosion and sediment control measures and proper material handling and storage during construction activities will avoid sedimentation and other potential pollutants from entering drainages and downstream aquatic habitats. Therefore, it has been determined that there will be no significant impact to this species as a result of the proposed project.

7.5.4.3 Chinook Salmon – Sacramento River Winter-run ESU

Conservation Status: Federal – Endangered; State – Endangered

Chinook salmon (*Oncorhynchus tshawytscha*) that belong to the Sacramento River (SR) Distinct Population Segment (DPS), which is listed under the ESA as a threatened species (NMFS 1989, 1990) consists of only one population that uses spawning habitat confined to the upper Sacramento River in California's Central Valley. SR DPS upstream spawning migration occurs from December through July. SR DPS is sexually immature when upstream migration begins and they must hold for several months in suitable habitat prior to spawning in water deeper than 0.8 feet and water velocities less than 8 feet per second for successful upstream migration (Graham Mathews & Associates, 2008). Clean, loose gravel with water temperatures between 6 and 14 C is required for spawning.

Although there are no CNDDDB occurrences of this species within 5 miles of the site (Figure 5), known occurrences of this species (*Oncorhynchus tshawytscha* population 7) in the vicinity of the site includes Sacramento River to the south and southwest of the site just outside of the 5-mile radius of the site. The Sacramento River passes through along the western area within the 5-mile radius from the site. This species may utilize the Sacramento River at the mouth of Churn Creek as a non-natal rearing area, but are not known to use any upstream areas within Churn Creek (Analytical Environmental Services 2014). While sexually immature fish must remain in freshwater for up to several months before spawning and mature adults require water deeper than 0.8 feet and water velocities less than 8 feet per second for successful upstream migration (Graham Mathews & Associates, 2008).

The Churn Creek North Branch at the site is a small, low-gradient seasonal stream that does not contain suitable spawning habitat in the portion of the seasonal drainage adjacent to the site. Furthermore, barriers upstream within the City of Shasta Lake provide a significant migration barrier to anadromous fish to any potential spawning habitat in the headwaters of Churn Creek North Branch. Based on this evaluation, it has been determined that it is highly unlikely that Chinook salmon occurs in Churn Creek North Branch.

The proposed project will avoid impacts to Churn Creek North Branch and the riparian forest habitat at the site. All site developments will be located 50 feet or greater from the top of bank of this seasonal drainage at the site. Implementation of adequate erosion and sediment control measures and proper material handling and storage during construction activities will avoid sedimentation and other potential pollutants from entering drainages and downstream aquatic habitats. Therefore, it has been determined that there will be no significant impact to this species as a result of the proposed project.

7.5.5 Invertebrates

7.5.5.1 Valley Elderberry Longhorn Beetle

Conservation Status: Federal –Threatened

Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) prefer riparian scrub habitat and only occur in the Central Valley of California in association with blue elderberry (*Sambucus mexicana*). This species prefers to lay eggs in elderberries 2 to 8 inches in diameter and there is some preference shown for "stressed" elderberries. There are no CNDDDB occurrences of this species within 5 miles of the site (Figure 5)

Blue elderberry was observed outside of the riparian forest corridor in annual grassland habitat in the southwest portion of the site (Figure 4). Thirty (30) blue elderberry plants were observed in close proximity to each other. The stems ranged in size from 0.125 inches in width to 0.625 inches in width with the majority of stems being 0.5 inches and less in width. No beetle exit bore holes were observed in any of the stems. All of the stems are too small to provide suitable habitat for valley elderberry longhorn beetle. Based on this evaluation, no avoidance or mitigation measures would be required or are needed. Therefore, it has been determined that there will be no significant impact to this species as a result of the proposed project.

8 DISCUSSION OF POTENTIAL IMPACTS

8.1 SIGNIFICANCE CRITERIA

The determination of significance of impacts to biological resources involves an evaluation of the context in which the impact may occur and the intensity and extent of the impact's effect. The significance of potential impacts is assessed at a site-specific scale and in the larger regional context. The project's effect on biological resources would be considered significant if the project results in:

- Alteration of unique characteristics of the area, such as sensitive plant communities and habitats (i.e. serpentine habitats, wetlands, riparian habitats).
- Adverse impacts to special-status species.
- Adverse impacts to important or vulnerable resources as determined by scientific opinion or resource agency concerns (i.e. special status habitats; e.g. wetlands).
- Interference with migratory routes.

8.2 POTENTIAL IMPACTS

The proposed project will result in impacts to, and the loss of, mixed woodland and annual grassland habitat at the site (Figure 4). The proposed project will avoid impacts to the riparian forest habitat associated with Churn Creek North Branch and will provide a 50-foot development setback buffer from all site developments to the top of bank of Churn Creek North Branch. In addition, the proposed project will avoid impacts in the identified archeological preservation area.

An undetermined number of trees are proposed to be removed as a result of the proposed project. Tree protection measures will be implemented at the site to protect the trees to be preserved and tree replacement is proposed for the trees to be removed. The installation and maintenance of barrier fencing along the 50-foot development setback buffer from site developments to the top of bank of Churn Creek North Branch will establish protection of riparian forest associated with Churn Creek North Branch during site developments.

The proposed project has the potential to impact special-status animal species including special-status bat species, western pond turtle and foothill yellow-legged frog. In addition, the proposed project has the potential to disturb native nesting birds, including birds of prey, primarily as a result of tree removal, in the event native birds initiate nesting activities at the site.

8.3 RECOMMENDED MITIGATION MEASURES

8.4.1 Nesting Birds

To ensure that nesting birds are not disturbed as a result of tree trimming, tree removal and construction activities, it is recommended that pre-construction surveys for nesting birds be performed prior to the initiation of tree trimming, tree cutting, grubbing and construction activities.

Mitigation Measures

A qualified biologist shall perform a pre-construction survey for nesting birds within 48 hours prior to tree removal and/or ground breaking at the site if construction activities will take place between February 1 and August 31. If nesting birds are found, the qualified biologist shall establish suitable buffers prior to tree removal and/or ground breaking activities. To prevent encroachment, the established buffer(s) shall be clearly marked by highly visibility material. The established buffer(s) shall remain in effect until the young have fledged or the nest has been abandoned as confirmed by the qualified biologist. To more effectively identify active nests and to facilitate project scheduling, it is recommended that initial nesting surveys begin as early as February when the foliage on the trees are at a minimum and the nest building activity is high.

8.4.2 Roosting Bats

To ensure that actively roosting bats are not disturbed as a result of tree trimming and tree removal, it is recommended that specific mitigation measures be implemented to avoid impacts to bat species.

Mitigation Measures

1. The pruning or removal of living trees or snags must not occur during the maternity season between April 1 and September 1 to minimize the disturbance of young that may be present and unable to fly.

2. *The pruning or removal of living trees or snags must occur between the hours of 12 pm and sunset on days after nights when low temperatures were 50° For warmer to minimize impacting bats that may be present in deep torpor. Sunset times shall be obtained from http://aa.usno.navy.mil/data/docs/RS_OneDay.php and temperatures for prior-work nights shall be obtained from <http://www.wunderground.com/history/>*

3. *When it is necessary to perform crown reduction on trees over 12 inches in diameter breast height or remove entire trees or branches over six inches in diameter there shall be preliminary pruning of small branches less than 2 inches in diameter performed the day before. The purpose of this is to minimize the probability that bats would choose to roost in those trees the night before the work is performed.*

4. *To account for the loss of potentially suitable bat roosting habitat as a result of the removal of trees at the site, the client will install a total of ten (10) two-chambered rocket-style bat houses spaced at least 200 feet away from human habited areas including the entrance, parking lot, Ashby Road. Designs and guidelines for this style of bat house can be located at http://www.batcon.org/pdfs/BHBUILDERSHdbk13_Online.pdf*

If it is not possible to implement Measures 2 and/or 3, then a qualified bat biologist will be required in order to conduct tree cavity surveys and humanely evict roosting bats within 24 hours of vegetation management activities. Measure 1 (avoidance of maternity season is critical as young bats that are not able to fly cannot be humanely evicted).

8.4.3 Western Pond Turtle

Western pond turtles are known to travel up to 300 feet from riparian corridors for nesting and refuge. To ensure that western pond turtles are not disturbed as a result of construction activities, it is recommended that pre-construction surveys for western pond turtles be performed 300 feet from the edge of riparian forest habitat prior to the initiation of construction activities.

Mitigation Measure

A qualified biologist shall perform a pre-construction survey for western pond turtles 300 feet from the edge of riparian forest habitat within 48 hours prior to ground breaking at the site. If western pond turtles are found, the qualified biologist shall establish suitable buffers and/or relocation of individuals prior initiation of construction activities.

8.4.4 Yellow-legged Frog

Although unlikely, yellow-legged frogs are known to travel outside of riparian corridors. To ensure that yellow-legged frogs are not disturbed as a result of construction activities, it is recommended that pre-construction surveys for yellow-legged frogs be performed 300 feet from the edge of riparian forest habitat prior to the initiation of construction activities.

Mitigation Measure

A qualified biologist shall perform a pre-construction survey for yellow-legged frogs 300 feet from the edge of riparian forest habitat within 48 hours prior to ground breaking at the site. If yellow-legged frogs are found, the qualified biologist shall establish suitable buffers and/or relocation of individuals prior to initiation of construction activities.

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FIGURES

FIGURE 1. SITE VICINITY MAP

FIGURE 2. USGS MAP

FIGURE 3. SOILS MAP

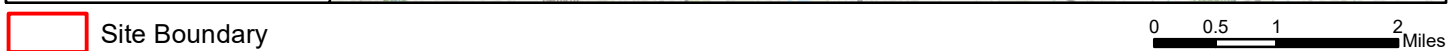
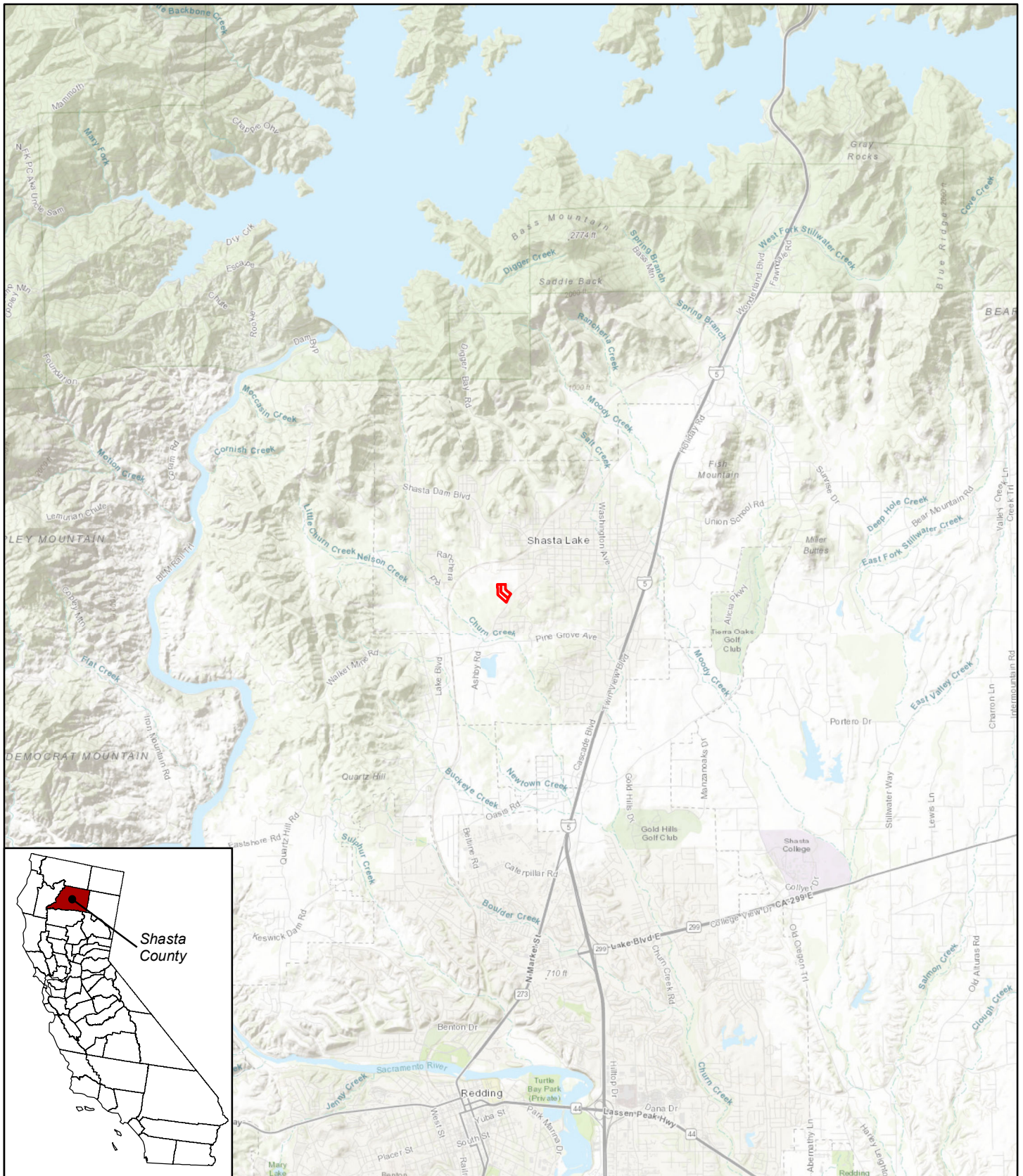
FIGURE 4. HABITAT MAP

FIGURE 5. CNDDDB MAP

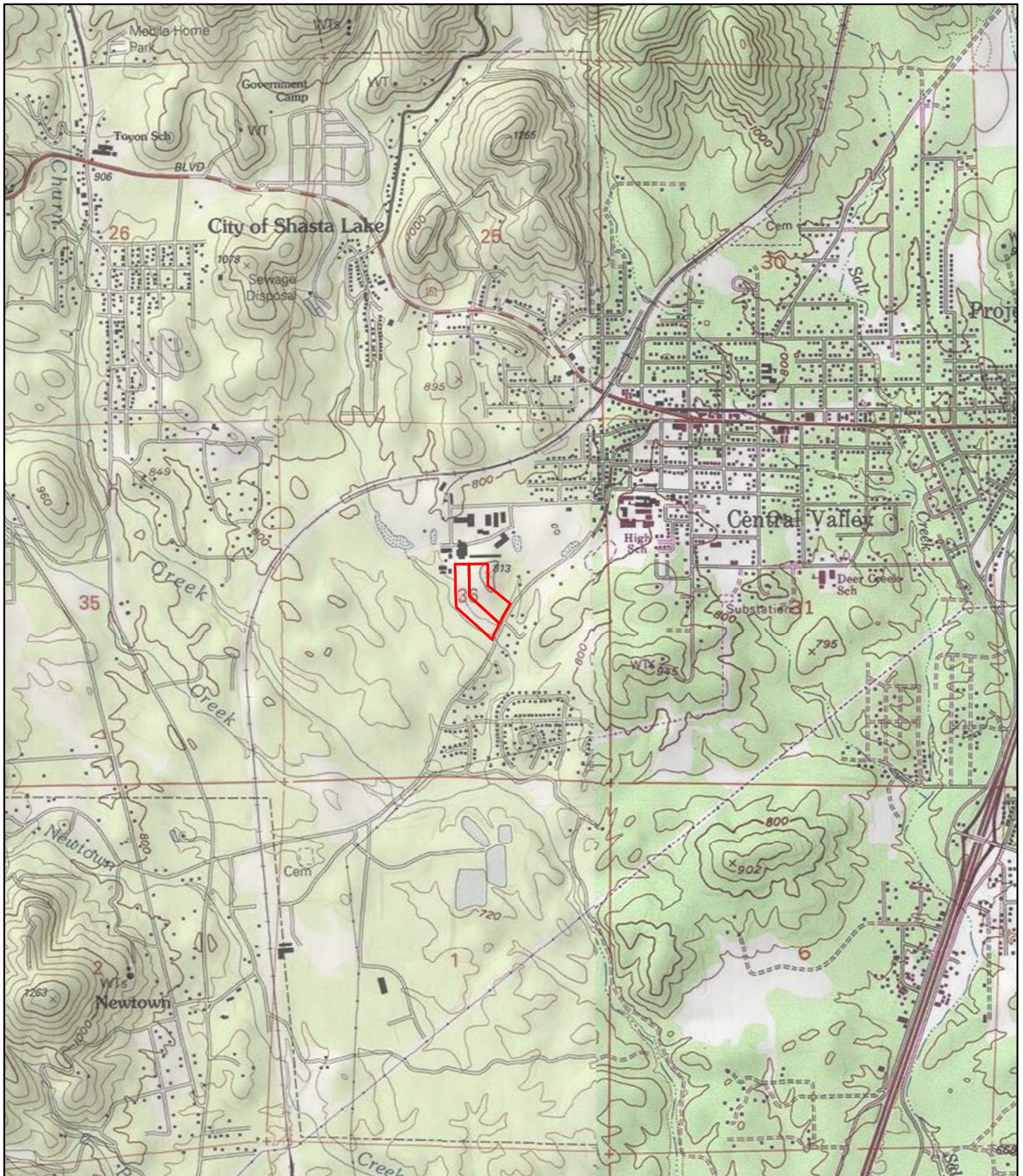
SITE PLAN

PHOTO PLATE A

PHOTO PLATE B



<p>Site Vicinity Map</p>	<div data-bbox="771 1848 836 1974"> </div> <div data-bbox="844 1848 1258 1963"> <p>Wiemeyer Ecological Sciences 4000 Montgomery Drive, Suite L-5 Santa Rosa, CA 95405</p> </div> <div data-bbox="1339 1848 1518 1963"> <p>Parcel boundary provided by Shasta County Map date: 6/2018</p> </div>	
<p>Ashby Rd Parcels Shasta Lake, CA APNs: 006-020-056, 006-020-057</p>		



Site Boundary

0 0.25 0.5 Miles

USGS Map

Ashby Rd Parcels
Shasta Lake, CA

APNs: 006-020-056, 006-020-057

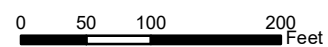



Wiemeyer Ecological Sciences
4000 Montgomery Drive, Suite L-5
Santa Rosa, CA 95405

Parcel boundary
provided by
Shasta County
Map date: 6/2018






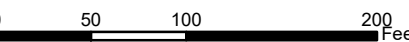



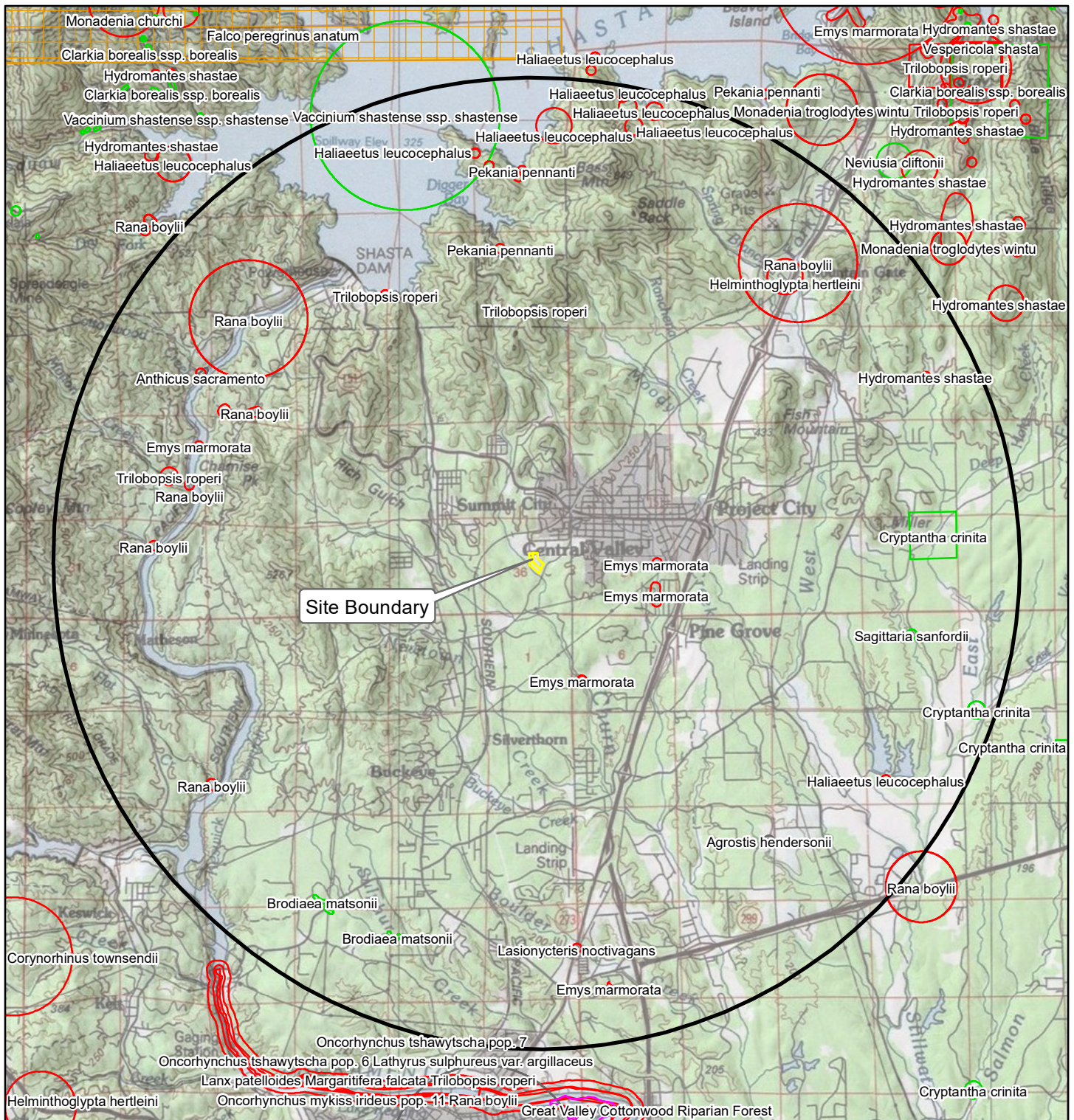
- Site Boundary
- AnD - Auburn loam, 8 to 30 percent slopes
- BkD - Boomer gravelly loam, 15 to 30 percent slopes



Soils Map	<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="text-align: center;">  <p>N</p> </div> <div> <p>Wiemeyer Ecological Sciences 4000 Montgomery Drive, Suite L-5 Santa Rosa, CA 95405</p> </div> <div> <p>Parcel boundary provided by Shasta County Soils provided by NRCS Map date: 2/2018</p> </div> </div>	
<p style="text-align: center;">Ashby Rd Parcels Shasta Lake, CA APNs: 006-020-056, 006-020-057</p>		



<p>Habitat Map</p> <p>Ashby Rd Parcels</p> <p>Shasta Lake, CA</p> <p>APNs: 006-020-056, 006-020-057</p>	<p>Wiemeyer Ecological Sciences</p> <p>4000 Montgomery Drive, Suite L-5</p> <p>Santa Rosa, CA 95405</p>	<p>Parcel boundary provided by Shasta County</p> <p>Map date: 7/2018</p> <p>Aerial: NAIP (2016)</p>	<p>  Site Boundary</p> <p> Seasonal Drainage (approximate)</p> <p> Riparian Forest</p>	<p> Blue elderberry location</p> <p>AG - Annual Grassland</p> <p>MW - Mixed Woodland</p>	<p> 0 50 100 200 Feet</p> <p> Proposed Bat Box Location</p>
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- | | | | |
|---------------|--------|-------------------|----------------------------------|
| Site Boundary | Plant | Terrestrial Comm. | Multiple |
| 5 mile buffer | Animal | Aquatic Comm. | Sensitive EO's (Commercial only) |

0 1 2 3 4 5 Miles

CNDDDB Occurrences

Ashby Rd Parcels
Shasta Lake, CA
APNs: 006-020-056, 006-020-057



Wiemeyer Ecological Sciences
4000 Montgomery Drive, Suite L-5
Santa Rosa, CA 95405

Parcel boundary provided
by Shasta County
CNDDDB provided by
CDFW (v. June 2018)
Map date: 6/2018



A-1: View of off-site riparian forest habitat west of site.



A-2: View of off-site pool in seasonal drainage southwest of site.



A-3: View of off-site pool in seasonal drainage west of site.



A-4: Seasonal drainage near Ashby Road at south end of site.



A-5: Typical view of annual grassland and mixed woodland.



A-6: Typical view of annual grassland and mixed woodland.

**Cannabis Campus
Ashby Road
Shasta Lake City, CA
PHOTO PLATE A**

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SANTA ROSA, CA 95405
(707) 573-1770**



B-1: Typical view of annual grassland and mixed woodland.



B-2: View of gray pines in mixed woodland habitat.



B-3: View of grey pines, hardwoods and manzanita.



B-4: View of woodrat nest within mixed woodland habitat.



B-5: Typical view of mixed woodland habitat.



B-6: Typical view of mixed woodland and annual grassland.

**Cannabis Campus
Ashby Road
Shasta Lake City, CA
PHOTO PLATE B**

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APPENDIX A
SPECIAL STATUS PLANT SPECIES

APPENDIX A: SPECIAL-STATUS PLANT SPECIES LIST

USGS 9-QUADRANGLE MAPS- Shasta Dam, Schell Mtn., Bohemotash Mtn., O'Brien, Whiskeytown, Project City, Igo, Redding, Enterprise

CNPS - May 2018

<u>Scientific Name</u>	<u>Common Name</u>	<u>Rare Plant Rank</u>	<u>Global Rank</u>	<u>State Rank</u>	<u>State List</u>	<u>Federal List</u>	<u>Habitat</u>
<i>Adiantum shastense</i>	Shasta maidenhair fern	4.3	G3	S3	None	None	Lower montane coniferous forest
<i>Ageratina shastensis</i>	Shasta ageratina	1B.2	G3	S3	None	None	Chaparral, Lower montane coniferous forest
<i>Agrostis hendersonii</i>	Henderson's bent grass	3.2	G2Q	S2	None	None	Valley and foothill grassland (mesic), Vernal pools
<i>Allium sanbornii</i> var. <i>sanbornii</i>	Sanborn's onion	4.2	G4T3T4	S3S4	None	None	Chaparral, Cismontane woodland, Lower montane coniferous forest
<i>Anomobryum julaceum</i>	slender silver moss	4.2	G5?	S2	None	None	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest
<i>Arctostaphylos malloryi</i>	Mallory's manzanita	4.3	G3	S3	None	None	Chaparral, Lower montane coniferous forest
<i>Arnica venosa</i>	Shasta County arnica	4.2	G3	S3	None	None	Cismontane woodland, Lower montane coniferous forest
<i>Astragalus pauperculus</i>	depauperate milk-vetch	4.3	G4	S4	None	None	Chaparral, Cismontane woodland, Valley and foothill grassland
<i>Brodiaea matsonii</i>	Sulphur Creek brodiaea	1B.1	G1	S1	None	None	Cismontane woodland (streambanks), Meadows and seeps
<i>Bulbostylis capillaris</i>	thread-leaved beakseed	4.2	G5	S3	None	None	Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest
<i>Clarkia borealis</i> ssp. <i>borealis</i>	northern clarkia	1B.3	G3T3	S3	None	None	Chaparral, Cismontane woodland, Lower montane coniferous forest

APPENDIX A: SPECIAL-STATUS PLANT SPECIES LIST

USGS 9-QUADRANGLE MAPS- Shasta Dam, Schell Mtn., Bohemotash Mtn., O'Brien, Whiskeytown, Project City, Igo, Redding, Enterprise

CNPS - May 2018

<u>Scientific Name</u>	<u>Common Name</u>	<u>Rare Plant Rank</u>	<u>Global Rank</u>	<u>State Rank</u>	<u>State List</u>	<u>Federal List</u>	<u>Habitat</u>
<i>Cryptantha crinita</i>	silky cryptantha	1B.2	G2	S2	None	None	Cismontane woodland, Lower montane coniferous forest, Riparian forest, Riparian woodland, Valley and foothill grassland
<i>Cypripedium fasciculatum</i>	clustered lady's-slipper	4.2	G4	S4	None	None	Lower montane coniferous forest, North Coast coniferous forest
<i>Cypripedium montanum</i>	mountain lady's-slipper	4.2	G4	S4	None	None	Broadleafed upland forest, Cismontane woodland, Lower montane coniferous forest, North Coast coniferous forest
<i>Eriogonum ursinum</i> var. <i>erubescens</i>	blushing wild buckwheat	1B.3	G3G4T3	S3	None	None	Chaparral (montane), Lower montane coniferous forest
<i>Erythranthe taylorii</i>	Shasta limestone monkeyflower	1B.1	G2	S2	None	None	Cismontane woodland, Lower montane coniferous forest
<i>Erythronium shastense</i>	Shasta fawn lily	1B.2	G2	S2	None	None	Cismontane woodland, Lower montane coniferous forest
<i>Juncus leiospermus</i> var. <i>leiospermus</i>	Red Bluff dwarf rush	1B.1	G2T2	S2	None	None	Chaparral, Cismontane woodland, Meadows and seeps, Valley and foothill grassland, Vernal pools
<i>Lathyrus sulphureus</i> var. <i>argillaceus</i>	dubious pea	3	G5T1T2	S1S2	None	None	Cismontane woodland, Lower montane coniferous forest, Upper montane coniferous forest
<i>Legenere limosa</i>	legenere	1B.1	G2	S2	None	None	Vernal pools
<i>Lewisia cantelovii</i>	Cantelow's lewisia	1B.2	G3	S3	None	None	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest

APPENDIX A: SPECIAL-STATUS PLANT SPECIES LIST

USGS 9-QUADRANGLE MAPS- Shasta Dam, Schell Mtn., Bohemotash Mtn., O'Brien, Whiskeytown, Project City, Igo, Redding, Enterprise

CNPS - May 2018

<u>Scientific Name</u>	<u>Common Name</u>	<u>Rare Plant Rank</u>	<u>Global Rank</u>	<u>State Rank</u>	<u>State List</u>	<u>Federal List</u>	<u>Habitat</u>
<i>Neviusia cliftonii</i>	Shasta snow-wreath	1B.2	G2	S2	None	None	Cismontane woodland, Lower montane coniferous forest, Riparian woodland
<i>Orcuttia tenuis</i>	slender Orcutt grass	1B.1	G2	S2	CE	FT	Vernal pools
<i>Potamogeton epihydrus</i>	Nuttall's ribbon-leaved pondweed	2B.2	G5	S2S3	None	None	Marshes and swamps (assorted shallow freshwater)
<i>Sagittaria sanfordii</i>	Sanford's arrowhead	1B.2	G3	S3	None	None	Marshes and swamps (assorted shallow freshwater)
<i>Sedum obtusatum</i> ssp. <i>paradisum</i>	Canyon Creek stonecrop	1B.3	G4G5T3	S3	None	None	Broadleafed upland forest, Chaparral, Lower montane coniferous forest, Subalpine coniferous forest
<i>Sidalcea celata</i>	Redding checkerbloom	3	G2G3	S2S3	None	None	Cismontane woodland
<i>Smilax jamesii</i>	English Peak greenbrier	4.2	G3G4	S3S4	None	None	Broadleafed upland forest, Lower montane coniferous forest, Marshes and swamps, North Coast coniferous forest, Upper montane coniferous forest
<i>Thermopsis gracilis</i>	slender false lupine	4.3	G4	S4	None	None	Chaparral, Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest
<i>Vaccinium shastense</i> ssp. <i>shastense</i>	Shasta huckleberry	1B.3	G4T3	S3	None	None	Chaparral, Cismontane woodland, Lower montane coniferous forest, Riparian forest, Subalpine coniferous forest

APPENDIX B
SPECIAL STATUS ANIMAL SPECIES

APPENDIX B: SPECIAL-STATUS ANIMAL SPECIES LIST

USGS 9-QUADRANGLE MAPS- Shasta Dam, Schell Mtn., Bohemotash Mtn., O'Brien, Whiskeytown, Project City, Igo, Redding, Enterprise

CNDDDB - May 2018

<u>Scientific Name</u>	<u>Common Name</u>	<u>Federal List</u>	<u>State List</u>	<u>Global Rank</u>	<u>State Rank</u>	<u>Dept. Fish and Wildlife Rank</u>	<u>Habitat</u>
<i>Agelaius tricolor</i>	tricolored blackbird	None	Candidate Endangered	G2G3	S1S2	Special Concern	Freshwater marsh Marsh & swamp Swamp Wetland
<i>Anthicus antiochensis</i>	Antioch Dunes anthicid beetle	None	None	G1	S1	None	Interior dunes
<i>Anthicus sacramento</i>	Sacramento anthicid beetle	None	None	G1	S1	None	Interior dunes
<i>Antrozous pallidus</i>	pallid bat	None	None	G5	S3	Special Concern	Chaparral Coastal scrub Desert wash Great Basin grassland Great Basin scrub Mojavean desert scrub Riparian woodland Sonoran desert scrub Upper montane coniferous forest Valley & foothill grassland
<i>Ardea alba</i>	great egret	None	None	G5	S4	None	Brackish marsh Estuary Freshwater marsh Marsh & swamp Riparian forest Wetland
<i>Ascaphus truei</i>	Pacific tailed frog	None	None	G4	S3S4	Special Concern	Aquatic Klamath/North coast flowing waters Lower montane coniferous forest North coast coniferous forest Redwood Riparian forest
<i>Branchinecta lynchi</i>	vernal pool fairy shrimp	Threatened	None	G3	S3	None	Valley & foothill grassland Vernal pool Wetland
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	None	None	G3G4	S2	Special Concern	Broadleaved upland forest Chaparral Chenopod scrub Great Basin grassland Great Basin scrub Joshua tree woodland Lower montane coniferous forest Meadow & seep Mojavean desert scrub Riparian forest Riparian woodland Sonoran desert scrub Sonoran thorn woodland Upper montane coniferous forest Valley & foothill grassland
<i>Desmocerus californicus dimorphus</i>	valley elderberry longhorn beetle	Threatened	None	G3T2	S2	None	Riparian scrub

APPENDIX B: SPECIAL-STATUS ANIMAL SPECIES LIST

USGS 9-QUADRANGLE MAPS- Shasta Dam, Schell Mtn., Bohemotash Mtn., O'Brien, Whiskeytown, Project City, Igo, Redding, Enterprise

CNDDDB - May 2018

<u>Scientific Name</u>	<u>Common Name</u>	<u>Federal List</u>	<u>State List</u>	<u>Global Rank</u>	<u>State Rank</u>	<u>Dept. Fish and Wildlife Rank</u>	<u>Habitat</u>
<i>Emys marmorata</i>	western pond turtle	None	None	G3G4	S3	Special Concern	Aquatic Artificial flowing waters Klamath/North coast flowing waters Klamath/North coast standing waters Marsh & swamp Sacramento/San Joaquin flowing waters Sacramento/San Joaquin standing waters South coast flowing waters South coast standing waters Wetland
<i>Falco peregrinus anatum</i>	American peregrine falcon	Delisted	Delisted	G4T4	S3S4	Fully Protected	* Habitat type not provided by CNDDDB
<i>Haliaeetus leucocephalus</i>	bald eagle	Delisted	Endangered	G5	S3	Fully Protected	Lower montane coniferous forest Oldgrowth
<i>Helminthoglypta hertleini</i>	Oregon shoulderband	None	None	G1	S1S2	None	Riparian forest Talus slope
<i>Hydromantes shastae</i>	Shasta salamander	None	Threatened	G1G2	S3	None	Cismontane woodland Limestone
<i>Lanx patelloides</i>	kneecap lanx	None	None	G2	S2	None	Aquatic Sacramento/San Joaquin flowing waters
<i>Lasionycteris noctivagans</i>	silver-haired bat	None	None	G5	S3S4	None	Lower montane coniferous forest Oldgrowth Riparian forest
<i>Lasiurus blossevillii</i>	western red bat	None	None	G5	S3	Special Concern	Cismontane woodland Lower montane coniferous forest Riparian forest Riparian woodland
<i>Lepidurus packardii</i>	vernal pool tadpole shrimp	Endangered	None	G4	S3S4	None	Valley & foothill grassland Vernal pool Wetland
<i>Linderiella occidentalis</i>	California linderiella	None	None	G2G3	S2S3	None	Vernal pool
<i>Margaritifera falcata</i>	western pearlshell	None	None	G4G5	S1S2	None	Aquatic

APPENDIX B: SPECIAL-STATUS ANIMAL SPECIES LIST

USGS 9-QUADRANGLE MAPS- Shasta Dam, Schell Mtn., Bohemotash Mtn., O'Brien, Whiskeytown, Project City, Igo, Redding, Enterprise

CNDDDB - May 2018

<u>Scientific Name</u>	<u>Common Name</u>	<u>Federal List</u>	<u>State List</u>	<u>Global Rank</u>	<u>State Rank</u>	<u>Dept. Fish and Wildlife Rank</u>	<u>Habitat</u>
<i>Monadenia churchi</i>	Klamath sideband	None	None	G2G3	S2	None	Talus slope
<i>Monadenia troglodytes troglodytes</i>	Shasta sideband	None	None	G1G2T1T2	S1S2	None	Chaparral Cismontane woodland Limestone Lower montane coniferous forest
<i>Monadenia troglodytes wintu</i>	Wintu sideband	None	None	G1G2T1T2	S1S2	None	* Habitat type not provided by CNDDDB
<i>Myotis evotis</i>	long-eared myotis	None	None	G5	S3	None	* Habitat type not provided by CNDDDB
<i>Myotis yumanensis</i>	Yuma myotis	None	None	G5	S4	None	Lower montane coniferous forest Riparian forest Riparian woodland Upper montane coniferous forest
<i>Oncorhynchus mykiss irideus</i> pop. 11	steelhead - Central Valley DPS	Threatened	None	G5T2Q	S2	None	Aquatic Sacramento/San Joaquin flowing waters
<i>Oncorhynchus tshawytscha</i> pop. 6	chinook salmon - Central Valley spring-run ESU	Threatened	Threatened	G5	S1	None	Aquatic Sacramento/San Joaquin flowing waters
<i>Oncorhynchus tshawytscha</i> pop. 7	chinook salmon - Sacramento River winter-run ESU	Endangered	Endangered	G5	S1	None	Aquatic Sacramento/San Joaquin flowing waters
<i>Pekania pennanti</i>	fisher - West Coast DPS	None	Candidate Threatened	G5T2T3Q	S2S3	Special Concern	North coast coniferous forest Oldgrowth Riparian forest

APPENDIX B: SPECIAL-STATUS ANIMAL SPECIES LIST

USGS 9-QUADRANGLE MAPS- Shasta Dam, Schell Mtn., Bohemotash Mtn., O'Brien, Whiskeytown, Project City, Igo, Redding, Enterprise

CNDDDB - May 2018

<u>Scientific Name</u>	<u>Common Name</u>	<u>Federal List</u>	<u>State List</u>	<u>Global Rank</u>	<u>State Rank</u>	<u>Dept. Fish and Wildlife Rank</u>	<u>Habitat</u>
<i>Rana boylei</i>	foothill yellow-legged frog	None	Candidate Threatened	G3	S3	Special Concern	Aquatic Chaparral Cismontane woodland Coastal scrub Klamath/North coast flowing waters Lower montane coniferous forest Meadow & seep Riparian forest Riparian woodland Sacramento/San Joaquin flowing waters
<i>Riparia riparia</i>	bank swallow	None	Threatened	G5	S2	None	Riparian scrub Riparian woodland
<i>Spea hammondi</i>	western spadefoot	None	None	G3	S3	Special Concern	Cismontane woodland Coastal scrub Valley & foothill grassland Vernal pool Wetland
<i>Trilobopsis roperi</i>	Shasta chaparral	None	None	G1	S1	None	* Habitat type not provided by CNDDDB
<i>Vespericola shasta</i>	Shasta hesperian	None	None	G1	S1	None	Riparian forest

APPENDIX C
PLANT SPECIES LIST

APPENDIX C: PLANT INVENTORY LIST

Annual Herb

Acemisson americanus
Agoseris heterophylla
Amsinckia lycospoides
Anthriscus caucalis
Calycadenia fremontii
Centaurea solstitialis *
Centromadia fitchii
Erodium cicutarium *
Galium aparine
Geranium dissectum *
Leontodon saxatilis *
Lupinus bicolor
Mimulus guttata
Plantago coronopus *
Sclerolinon digynum
Trifolium hirtum *
Trifolium microcephalum
Vicia villosa
Xanthium strumarium

Perennial Herb

Achillea millefolium
Artemisia douglasiana
Chlorogalum pomeridianum
Dichelostemma capitatum
Epilobium pallidum
Galium bolanderi
Mentha pulegium *
Plantago lanceolata *
Rumex acetosella *
Typha angustifolia *
Veronica anagallis-aquatica *

Grasses/ Grasslike

Anthoxanthum aristatum *
Avena barbata *
Avena fatua *
Briza maxima *
Bromus carinatus
Bromus diandrus *
Bromus hordeaceus *
Bromus tectorum *
Carex divulsa ssp. divulsa *
Carex feta
Cynosurus echinatus *
Dactylis glomerata *
Elymus caput-medusae *
Festuca perennis *
Hordeum brachyantherum
Juncus effusus
Panicum acuminatum
Poa pratensis *
Polypogon monspeliensis *

Trees/ Shrubs

Arctostaphylos viscida
Malus pumila *
Pinus sabiniana
Populus fremontii
Prunus sp.
Quercus douglasii
Quercus kelloggii
Quercus wislizeni
Sambucus nigra
Toxicodendron diversilobum

Vines

Aristolochia californica
Rubus armeniacus *
Rubus ursinus

*Are none non-native species

APPENDIX D
ARBORIST REPORT AND TREE REMOVAL AND
REPLACEMENT CHECKLIST



TREE REMOVAL AND REPLACEMENT CHECKLIST

09/2004

Shasta Lake Municipal Code Section 12.36.062 requires **Pre-Development Review** for Major Projects where it is proposed to remove more than five protected trees. The purpose of the review is to ensure that tree conservation is considered early in the planning process with respect to placement of buildings, roads and driveways, parking, utilities and other site improvements.

The following checklist is intended to identify the standard information and items that are necessary in order for the Planning Division to proceed with Pre-Development Review. Additional information may be required for certain types of projects. Please contact the Planning Division for details on your specific use.

PART 1 – PRE-DEVELOPMENT REVIEW

The following items are required for a complete application for Pre-Development Review:

1. ☐ Completed and Signed **Planning Permit Application Form**.
SEE T1 IN THE BINDER
2. ☐ **Application and Environmental Review Fees** are required at the time the application is submitted to the Planning Division.
SEE T2 IN THE BINDER
3. ☐ **Project Description** that summarizes the proposed use and activity, and the basis for any proposed exceptions to established development standards.
SEE T3 IN THE BINDER
4. ☐ **A tree delineation map** shall be required for the pre-development review meeting with the Development Services Director or his/her designee. This map shall show existing grades, location and size of groups of similar trees (stands), and any trees which may be significant due to their size.
SEE SHEET L2 SHOWING ALL TAGGED TREES WITH DESCRIPTIONS
5. ☐ **A Tree Removal and Replacement Plan** as specified in Part 2 below.
SEE SHEET L3 FOR 61 QUALIFYING TREES TO BE REMOVED AND PLANTING 183
6. ☐ **Conceptual development plans submitted at the pre-development review phase shall show one or more methods of ensuring that tree conservation has been considered in project design. In general, development plans shall consider the following:**
NOTES ADDED TO SHEET L3
 - a. Stands of trees shall be preserved where feasible, rather than individual trees, as they provide better habitat and have a more likely chance of survival than individual trees surrounded by development. Where possible, stands of trees shall be left in place so as to connect with other stands of trees on adjacent properties, rather than separating natural treed areas with developed areas.
 - b. For residential subdivisions, the development shall consider potential neighborhood park areas and subdivision entrance areas in designating set-aside areas for the purpose of preserving trees throughout the project boundaries.

- c. The development shall be designed such that suitable land will be set aside in an open-space easement which will:
 - 1. Retain as many protected trees as are proposed to be removed; or
 - 2. When the preservation of as many protected trees as are proposed to be removed unreasonably restricts the economic potential of the property upon which the trees are situated, the set-aside area is particularly suitable for the planting and/or natural regeneration of replacement trees required to be planted by the developer.

The set-aside area shall be in addition to any area classified as "Open Space" under the policies of the Shasta Lake General Plan.

- d. In evaluating tree preservation with respect to building placement, the development shall consider the relative health and viability of trees. Healthy trees of varying ages should be considered for preservation, rather than removing several younger trees in order to save an older specimen tree, which may be over-mature.
- e. Tree locations shall be reviewed in relation to planned roads, driveways, pavement, structures, overhead utility lines and underground utility trenches, to ensure that trees will not be damaged by construction or development. If the root system of any existing tree will be significantly damaged during construction, or if the tree will conflict with any structure or improvement, the site shall be redesigned or the tree shall be designated for removal. At least forty (40) percent of the critical root zone should remain undisturbed from construction for any tree proposed to remain on site.
- f. The base of a tree shall not be paved over or encased in planters or other enclosures, which could change the grade at the base of the tree.
- g. Grading or landscaping techniques that involve backfilling of soil around trees shall be avoided.
- h. The design of structures, improvements and site grades shall conform to the natural topography of the site to the extent feasible, to ensure survival of remaining trees.
- i. The proposed site drainage plan shall be reviewed for changes to surface water runoff that would affect trees. Final site drainage shall not allow surface water to pond around the base of trees.
SEE DRAINAGE PLANS SHEET C5
- j. Utility trenches shall avoid the critical root zone of any mature tree to be retained on site, or minimize encroachment to the extent feasible. The width or depth of utility trenches is not a consideration, since the cutting of roots for any size trench may damage a tree severely. To the extent feasible, utilities shall be run along the edge of driveways or other paved areas to minimize impacts to trees.

NOTE ADDED TO THE LANDSCAPING SHEETS

PART 2: MINIMUM REQUIREMENTS FOR TREE REMOVAL AND REPLACEMENT PLAN:

For major projects on sites containing existing protected trees, a Tree Removal and Replacement Plan shall be submitted concurrently with the formal application. Failure to provide this information will result in a determination that the application is incomplete. The Tree Removal and Replacement Plan shall contain the following information, except as otherwise waived by the Development Services Director or his/her designee, based on inapplicability to the proposed project:

1. ☐ The map shall be 18" X 26" in size, legible, and at a scale of not less than 1" = 400' with a 1" blank margin on all sides. If more than one (1) sheet is required, one (1) composite map shall be submitted along with the other required copies.
OBTAINED AUTHORIZATION FOR 24"X36"
2. ☐ Accurate location map with enough information to allow staff to locate access roads and the property in the field.
SEE SHEET C1.1 FOR VICINITY MAP. USE CHURN CREEK AS SOUTH BOUNDARY.
3. ☐ Project name, if any.
MANZANITA RANCH ESTATES SHOWN IN TITLE BLOCK
4. ☐ North arrow, scale, and date plan was prepared.
SHOWN ON L SHEETS
5. ☐ Names, address, zip code, and phone number of arborist or other qualified professional who prepared the plan.
JOHN ALDERSON'S CONTACT IS SHOWN ON SHEET L1
6. ☐ A plan showing the location of each tree ten (10) inches or greater DBH on the site. In cases where a project site includes a stand or stands of trees closely grouped, having a common and unbroken canopy, the entire stand rather than individual trees may be depicted, provided that the total canopy is accurately delineated.
SEE DELINATION MAP L2
7. ☐ A table keyed to the tree location plan, which indicates species, diameter, condition and health.
SEE DELINATION MAP L2
8. ☐ The location of existing or proposed lot lines, buildings, roads, driveways and other improvements.
SEE L1 LANDSCAPING SHEET
9. ☐ Grading information of sufficient detail to ascertain whether proposed cuts and fills will affect trees proposed to be saved.
SEE GRADING PLAN SET AND DAYLIGHT LINES ON L3
10. ☐ Trees proposed to remain after development, and trees proposed for removal
SEE L3 LANDSCAPING SHEET
11. ☐ Details on the species of trees to be used in replanting or the trees proposed to be transplanted and their proposed location. Include a timing schedule for replanting, any special irrigation or planting requirements, and provisions and responsibility for ongoing maintenance after construction.
12. ☐ Except in cases of residential subdivisions where the information is not known at the time of tentative map submittal, locations of construction equipment staging and materials storage during construction.

13. ☐ Except in cases of residential subdivisions where the information is not known at the time of tentative map submittal, locations of proposed underground utilities or other trenching, including storm drains, sewers, area drains, gas lines, electrical service, cable TV and water mains. All lateral lines serving the site shall be shown and shall be located so as not to damage remaining trees;
14. ☐ Except in cases of residential subdivisions where the information is not known at the time of tentative map submittal, locations of overhead utility lines which could impact existing or proposed trees;
15. ☐ Locations of proposed areas of new landscaping which could impact existing trees, including type of vegetation and irrigation proposed;
SEE L3 LANDSCAPING SHEET
16. ☐ Locations of streams, wetlands or drainage courses, and any proposed changes to drainage patterns, which could impact trees;
SEE L1-3 LANDSCAPING SHEETS
17. ☐ If deemed appropriate by the Development Services Director or his/her designee, a photographic record of trees affected by development may be required.

APPENDIX E
CITY OF SHASTA LAKE, LETTER DATED MAY 10, 2019

May 10, 2019

Trey Sherrell and Jason Vine
Realm Engineering
1767 Market Street Suite C
Redding, Ca 96001

RE: Assessor's Parcel Number: 006-020-056 and 057

Dear Mr. Vine:

The City has finished the initial review of your submittal for approval of a use permit for a commercial cannabis campus and related improvements, Assessor's Parcel Number 006-020-056 and 057. The following is information regarding corrections required by City departments that apply to this property. This project has not received full review from Shasta Lake Fire Protection District, USACE, or CDFW.

If you have any questions, please contact me at (530)275-7416/pbird@cityofshastalake.org. In addition, the Shasta Lake Municipal Code can be viewed online at www.ci.shasta-lake.ca.us **Additional information may be required based on review of the submitted corrections.**

Sincerely,

Peter Bird
Associate Planner

Enclosures: Corrections

Corrections

Public Works/Engineering (Jeff Tedder/Will Bond)

1. We have reviewed the Use Permit application for UP 19-01, consisting of 006-020-056 (abbreviated as -056) and 006-020-057 (abbreviated as -057), and have the following comments. These comments are related to the Use Permit Site Plan C1.0 sheet provided for both parcels. It is my understanding that the intent is that the -056 parcel will be developed first, with the -057 parcel being developed at a later time. I believe it is premature to include conditions on this project, as significant work is required to determine if the project is viable.

General:

2. The scale on the Use Permit Site Plan needs to be increased – 1"=60' is simply too small to be able to adequately examine the drawing. I suggest a minimum scale of 1"=40'.
3. A number of features overlap other features and cause them to clip (for instance, the water line on -057 disappears under the access road, then reappears on the other side).
4. A large number of items are not shown or not labeled – outbuildings, storm drain piping, water system on -057, etc.
5. The easement width for access to 006-040-007 is shown as being 40' wide; however, the paved width on -056 is only 20' in many areas. This needs to be correlated and corrected.
6. To improve clarity it is recommended that the use permit site plans be divided in to a Site Plan (building layout, dimensions & site improvements), Utility plan (water, sewer, electric, etc.), Grading & Drainage (grading & storm drain)
7. It appears information is sprinkled throughout the submittal (e.g. tree removal and replacement is included in the landscape plan). Clean up loose data and ensure relevant information is located in the same document it is related to. (PB)
8. Provide a sign plan if one is proposed. (this may be deferred to building permit submittal)
9. Verify consistency between all sheets (e.g. fire service size) (PB)
10. It is recommended that all corrections that could require changes to site design be resolved before amending any parts of the application that could be affected by said corrections. (PB)

Water:

11. The plans show separate connection to the (E) 6" water main in Ashby Road for both development parcels. The two systems do not appear to be looped together. The water system for -057 is not complete, as it disappears after it enters the manufacturing structure. It is unclear how the smaller buildings on the -057 parcel are provided water service.
12. The water utilization data provided for the cultivation operation show an ADD of 0.497 gal/sf and a MDD of 0.993 gal/sf. The ADD is significantly higher than water usage estimates received from other projects, and is about twice as high as the other operational cultivation operation that we have meter data for (highest

ADD = 0.256 gal/sf). What information are the estimates based on? Is any reuse of water anticipated in the process?

13. I have concerns about the design of the water system shown for the -056 parcel, with the sizing comments likely applying to both parcels. The main in Ashby Road is 6", and the proposed 6" main and 1" service (later noted as a 1 1/2" service) run approximately 1100+ LF to the last building pad. Although the hydrant placements are unclear, based on other similar developments I think it is highly unlikely that required fire flows can be met at the far ends of the main, both due to the main size in Ashby and the service line sizes. Solutions to this will likely include upsizing the main in Ashby Road as well as likely upsizing both the fire and domestic line sizes on both parcels. In order to ensure that proper volumes can be supplied at sufficient pressures, the Developer should model the water system to determine proper sizing of all components. This can be accomplished by a) the Developer running the model (InfoWater) himself using the City's data or b) the Developer paying the costs for the City's modeling engineer (Carollo Engineers) to run the model for them.
14. The water meter and RPP splits are shown well into the parcel. The water meters need to be placed at the Ashby ROW. If individual meters are to be used for individual buildings, some sort of agreement can likely be worked out to allow this.
15. Hydrant placement needs to be clearly shown, and needs to be approved by the SLFPD.
16. The required irrigation flow is very high, and needs to be considered as a part of the modeling noted above.
17. What is the purpose of the 2-10,000 gal storage tanks?

Wastewater:

18. The plans show connections to the City's collection system. The utility data sheet lists a 1500 gallon septic tank that will be connected to the floor drains (with no disposal area or location shown), and then describes a proposed bio filtration system to be constructed in the next three years (for what purpose, and that outlets to what? Will an NPDES permit be required?). The waste flow for both parcels needs to be clarified and fully described.
19. The wastewater connection point to the City's collection system shown on the plans is not located correctly accurate, as there is no sanitary sewer stub extending across Ashby Road. There is an existing service line (believed to be 6") that flows to the K-line approximately 200' easterly of Ashby Road that may be able to be extended to this project by the Developer (a rodhole on this line is exposed along the access road). However, the flows in this line need to be evaluated based on both existing and design flows to ensure that the pipeline does not reach 75% max capacity at any time (which would necessitate line upsizing).
20. All commercial wastewater systems must be broken down into two streams as they leave all buildings that contain processes related to industrial applications - one stream for sanitary purposes (sinks and bathrooms), and one for industrial waste (floor drains, process washout, etc.). The industrial waste line must include an accessible sampling port so that City staff can obtain samples for analysis. The two systems may reconnect downstream of the sampling port.

21. The sewer lines are labeled as 4". This is likely too small for a line that will run for 1100+ feet and still maintain 2' per second velocity. No cleanouts are shown.
22. The location of the proposed SSMH (west of Ashby road) is on the slope above the roadway. Please locate in or near roadway for ease of maintenance and align with existing access road to rodhole. Onsite lateral beyond the manhole will be a privately-maintained utility.

Streets/Traffic:

23. The Traffic Report is not complete (based on the following comments) and needs to be renamed 'Preliminary Traffic Report'. The report also needs to be stamped, and the final version will need to be signed and stamped.
24. The trip generation form contains no traffic analysis and includes numbers for the (-056) parcel only. Additionally, the numbers presented do not appear to me to be believable. This report should be redone under the direction of a traffic engineer to determine actual traffic impact using ITE- or other-referenced industrial uses, and should include realistic traffic volumes, anticipated nearby development traffic, and recommendations for site access (including potentially combining the two onsite roadways into a single roadway) for both parcels. The final report needs to be signed by the traffic engineer.
25. The traffic impact on Ashby Road needs to be completely evaluated. You have two intersections about 250' apart entering onto a 45 MPH collector roadway. It is likely you are going to need to widen Ashby Road to possibly include acceleration and deceleration lanes on the west side for southbound traffic, as well construct a center lane to facilitate left in/left out movements. Site distances need to be evaluated and included in the traffic impact report.
26. Consider eliminating the southernmost driveway. (PB)
27. Confirm consistency with noise study (anticipated daily trips) (PB)
28. Traffic control diagram is not applicable. (PB)

Drainage:

29. The Hydrology Report is for the -057 parcel only. No drainage study for the -056 parcel is included. All comments below are related to the presented report. A hydrology report for -056 must be provided, and if there is any interaction between the two parcels (i.e. culverts, shared basins, etc.), those facilities must be clearly shown. The -056 drainage basin is listed on the Site Plan at 144,000 CF, which seems far, far too large based on the calculations in the -057 report.
30. The Hydrology Report is not complete (based on the following comments) and needs to be renamed 'Preliminary Hydrology Report'. The report also needs to be stamped, and the final version will need to be signed and stamped.
31. -057 does not have a detention basin defined on the Use Permit Site Plan; however, calculations for a detention basin are included in the report. No storm drain facilities appear to be shown for the -057 parcel Site Plan, so no correlation between the report and the Site Plan can be made at this time. "Stormwater detention will be provided either in a pond or in a subsurface stormwater detention system if site restrictions do not allow surface storage." – This needs to be determined and suitable area allowed for one or the other of these structures, as well as the discharge pipeline. How will future access for this pipeline across -056 for the benefit of -057 be accomplished?

32. Figure 1 is missing. This is indexed as a Site Plan/Hydrology figure, and should include not only the Site Plan, but the extent of the drainage basin affecting the parcel.
33. The smaller buildings are mis-sized (5000 SF vs 5040 SF shown on the Plan). Why is the pesticide storage building located adjacent to Ashby Road?
34. The report does not contain an exhibit showing the extent of the drainage basin; thus, it is impossible to account for run-on from offsite areas.
35. The contours on the Site Plan are unlabeled for the most part, and there is no exhibit included in the report that expands on this information.
36. The report describes an outlet and culvert to Churn Creek that is not designed or shown anywhere. At the very least, a schematic representation needs to be shown on the Site Plan and in the report.
37. Proposed grading may change the drainage layout/direction/volume as flow is channelized. Has this been taken into account? There should be multiple post-construction drainage basins to consider.
38. The roadway for -056 is shown as being crowned in the grading plan. Assuming this is the same case for -057; this will result in a break in drainage areas and needs to be addressed.
39. It appears that the natural southwesterly drainage pattern drains to the north branch of Churn Creek per the FEMA DFIRM, not an unnamed tributary of Church Creek as stated in the report.
40. Address storm drain leach fields in landscape area. How does this impact drainage. (PB)

Geotechnical:

41. The Geotechnical Report is for -056. The soils on -057 need to be addressed as well.
42. The report needs to be stamped. The final version will need to be signed and stamped.
43. Please label all Attachments in the index.
44. Attachment F has nothing in it. Is the title sheet inserted in the wrong place?
45. It appears that the "unnamed drainage" is the north branch of Churn Creek.
46. It is unclear what, if any, items the Engineer believes are 'not applicable with a given explanation', as states on Page 4 under 'Shasta Lake City Requirements'.
47. The recommendations appear to be missing several items we normally see. What depth of stripping will be required to fully remove surface vegetation and contaminated topsoil? What is the maximum allowable cut and fill slope rates, given the soil present onsite? What are the allowable values for lateral resistance and estimated expected settlement? Are there any seismic recommendations? What is the procedure if existing wells, utilities, and/or foundations are encountered? Do you anticipate keying or benching for this project? Are there any setback recommendations?
48. The site drainage section states that the drainage is to the northeast – the drainage report states otherwise.
49. The proposed specification doesn't need to be included in the report.
50. If storm drain leach fields are going to be implemented, testing of soil to develop infiltration rate of soil is needed before sizing can occur.
51. Additional test pits should be dug on parcel 057. (PB)

52. The large area of surface-level rock on parcel 056 appears to be in direct conflict with the construction of structures and parking. How is this addressed in the geotechnical report? (PB)

Electric Department (Jason Crowell)

53. Requesting for a 1200 Amp 277/480 service for each APN.
Electric services which are 800 amps or greater must be designed and stamped by a licensed electrical engineer registered in the State of California or qualified and experienced licensed electrical contractors if they perform the actual installations (Design – Build)
54. Location of Main Circuit Breaker for each APN.
The electric utility has attached a proposed layout for the Primary Underground conduits, transformer locations and riser locations. Confirm with your electrical contractor that this will meet your needs.
55. Looping of the Primary electric circuit.
Looping the Primary circuit will increase the reliability of service for each APN, but will require a utility easement or R.O.W. for the facilities to be installed in. This is the responsibility of the applicant to complete. If phasing of the Development is done, the first APN to develop will not be looped until the second APN is developed.
56. The cost of service will be determined when all parties are satisfied with service type, location of equipment and easements / R.O.W.s are recorded. The Electric Utility will supply and bill for Primary conductor, Transformers, Cutouts, and utility labor. The applicant is responsible for and will install all Conduits, Boxes, Transformer Pads and all underground labor (see Electric Service Requirements).
57. Guarantee of service cannot be committed to at this time from the Electric utility.
The Guarantee of service can only be committed to once the applicant has finalized all plans and applied for a permit. The Applicant will then have 30 Days to pay the required service fees and pull the permit; if this requirement is not met the applicant will have to reapply for service.
58. See attached Electric Service Construction Requirements, service confirmation letters and preliminary design.

Planning (Peter Bird)

SWPPP

59. Update construction start time.
60. Sign and date page 4

Environmental Information Form

61. #5- Property size should include both parcels 056 and 057.
62. #22- Indicate extension of sewer line
63. #23- This total should include both structures
64. #27- Verify numbers and include both parcels
65. #36- Vehicle trips are not accurate- see PW comments
66. The form needs to be signed

Biological Assessment

- 67. The title sheet should state "City of Shasta Lake"
- 68. The project description must include both parcels
- 69. Correct the APN
- 70. Appendices are to be out of order and title sheets are printed back to back with each other. Resubmit properly labeled appendices.
- 71. 6.1 references "Appendix C"- this is not included. Correct reference and appendix title
- 72. 6.2 There is no "Appendix D"
- 73. 7.2.3.1- This section is out of order.
- 74. 7.2.3.1- Location of bushes should be delineated on an exhibit
- 75. 8.4.1 Mitigation Measures- change "should" to shall in first sentence.
- 76. 8.4.2.4- Provide an exhibit showing total number and location of bat houses
- 77. 8.4.2- This section appears to create a dramatic hurdle for the development. Consider bat surveys to identify actual impact to protected species.

Arborist Report

- 78. Generally- Tree removal and replacement will be looked at more thoroughly with SLFPD and CDFW. We will explore a balance between preservation, replanting, and fire safety.
- 79. It is critical that we have an accurate number of protected trees to be removed on both parcels. This will assist us in settling on an acceptable plan for all parties involved. This number should only include protected trees.
- 80. If alterations in site design affect tree counts, the study should be updated to reflect those changes. For this reason I advise that you finalize the site plan before changing the arborist report.
- 81. P.5- Under "Stand D" it is noted that this stand will not be affected by the construction and was not surveyed. It appears that this stand will be completely removed. Please verify and correct all counts.
- 82. P.7- If thinning stands A, B, and C results in the removal of a protected, tree such removal must be accounted for.

Noise Analysis

- 83. Number the pages of the noise analysis.
- 84. Existing conditions should include noise from SPI mill.
- 85. Substantiate the claim that trees lower GA/100ft by 6dB
- 86. Determine noise level at property line during operations

Air Quality

- 87. The "Air Quality" section is completely void of any analysis or study. Provide an air quality analysis/study.

Wetland Delineation

- 88. It is not apparent how you have addressed the wetlands. Please provide a wetland delineation for the project area.

Site Plan-Sheets C1.0 and T1

89. Consolidate sheets C1.0 (combined site plan) and T1
90. Update all calculations to include both parcels (parking, landscape, building sf)
91. Remove note A-F, H-N, and W-Y (these notes can be addressed on the floor plans)
92. Give an elevation of the dumpster if it will be located outdoors. Locate this detail in a logical place in the plan set.
93. How are J, A, E, and D accessed at the south side of the cultivation building on 057?
94. Where is the landscaping for the manufacturing building?
95. Why is the (J) pesticide storage located near Ashby Road?
96. Is (M) a building near Ashby Road
97. The "8' Chain Link Fence" note toward the south part of the project area appears to be improperly placed
98. Double check property dimensions and bearings. One P/L is missing at Ashby
99. Remove cut/fill and place on preliminary grading sheet
100. Remove "please see report by Sean Jensen"
101. Add parking calculations and dimensions
102. Verify correct number of parking spaces for 057
103. Add the name of the property owners
104. Add a note indicating phasing
105. Clarify rear fence note. Clearly delineate fence for entire property
106. What is the dark, dashed line behind the buildings on 056? Why is it on both sides of the driveway on 056?
107. Add all line types to the legend
108. Show easements
109. Remove "Typical Building Drainage Plan" from this sheet and add to appropriate sheet

Sheet D1

110. Remove sheet D1 and add fence elevation to A4.0
111. Move notes A-I to appropriate sheets

Sheet I1

112. Remove sheet I. this will be addressed with the water efficient landscape application at the building permit phase

Sheets A2.0-2.3

113. Ensure all items from "Section 2" of the commercial cannabis license application are included on these sheets
114. Add a floor plan for manufacturing
115. Add locations of carbon filters

Sheets A3.0-3.3

116. Remove these sheets

Sheets A4.2-4.4

117. Remove these sheets

Landscape Sheets L1-L3

118. The landscape plan should be general at this point. The L sheets should demonstrate the ability to comply with the municipal code. Full LS plans can be deferred to submittal of the building permit.
119. All L sheets must include both parcels.
120. Separate the landscape and tree removal and replacement plan. Specific landscape plans should be deferred to the building permit stage.
121. Verify and calculate parking areas of both parcels for compliance with MC §17.84.040.A.2, *"Large Parking Areas. Open parking areas, excluding underground or structural parking, which contain twenty (20) or more spaces, shall landscape a minimum of five percent of the gross lot area used for offstreet parking and access thereto, exclusive of any landscaped strip abutting the street right-of-way or area used for walkways or driveways. This required landscaping shall include one tree, of a species suited to the area climate zone, for every eight parking spaces."*
122. Include a note indicating the calculation and compliance with tree planting standards in MC §12.36.070, *"One 15-gallon tree shall be planted for each 2,000 square feet of gross floor area or covered space."*
123. The tree replacement plan must match the arborist report.

California Department of Fish and Wildlife

CDFW submitted the following informal comments. Please consider these when making any corrections to the project.

Tree Removal

124. They assume the presence of many bat species (including 2 SSC) and therefore propose the 2-phase tree removal process to ensure that volant bats are not harmed. But it does not address impacts to bat habitat. I would suggest they still need a qualified bat biologist to survey for special status bat species and provide a thorough habitat assessment to determine if the habitat that supports those species is being permanently impacted. It would also help support enhanced onsite or nearby in-kind tree mitigation despite fear of fire. CDFW is supportive of the 2-phase removal on trees that have confirmed habitat i.e. cracks, crevices, caverns, etc.

Mixed-Light

125. The structures are all labeled "Mixed Light". Artificial lighting escaping buildings/greenhouses may impact wildlife in several ways including impacts to navigation, changes in foraging behavior, changes in circadian rhythms (both physiological and behavioral), predator-prey relationships, and suppressed immune response. Impacts have been observed in birds, insects, mammals (including bats), reptiles, amphibians, and fish. The mixed-light structures should have a mechanism to prevent artificial lights from escaping the building.

Low Impact Development

126. CDFW encourages low impact development and if habitat can be incorporated into the detention basin, we would support it.

Riparian Setback and Tree Mitigation

127. Indoor commercial cultivation activities are conditionally exempt under the State Board's Cannabis Cultivation General Order, so we can't necessarily argue that their setback must be 100' instead of 50'. I would encourage the development of a riparian restoration plan and would propose an increased riparian setback as possible onsite mitigation for tree loss. I'm in favor of them using in lieu fees or Shasta Land Trust to some extent but if we can improve onsite habitat in a fire safe way that may be something good to start looking into

