

Appendix D

Biological Resources Evaluation



DRAFT BIOLOGICAL RESOURCES REPORT FOR THE

Tuolumne Bioenergy Woody Biomass Pellet Manufacturing Facility Project

Prepared for:

Rural Community Assistance Corporation
3120 Freeboard Drive, Suite 201
West Sacramento, CA 95691

July 2021

DRAFT BIOLOGICAL RESOURCES REPORT FOR THE

Tuolumne Bioenergy Woody Biomass Pellet Manufacturing Facility Project

Prepared for:

Rural Community Assistance Corporation
3120 Freeboard Drive, Suite 201
West Sacramento, CA 95691

Prepared by:



Contact:

Allison Fuller,
Wildlife Biologist

July 2021

20200116.03

TABLE OF CONTENTS

Section	Page
1 EXECUTIVE SUMMARY	1
2 INTRODUCTION AND PROJECT DESCRIPTION	1
3 DATA REVIEW AND SURVEY METHODS.....	3
4 KEY REGULATORY ISSUES.....	3
4.1 Federal Endangered Species Act.....	3
4.2 California Endangered Species Act.....	3
4.3 California Native Plant Protection Act	4
4.4 Clean Water Act	4
4.5 Porter-Cologne Water Quality Control Act.....	4
4.6 California Fish and Game Code	4
4.7 Migratory Bird Treaty Act	5
4.8 California Environmental Quality Act.....	5
4.9 Tuolumne County Biological Resources Review Guide	5
4.10 Tuolumne County General Plan.....	5
4.11 Premature Removal of Oak Trees Ordinance.....	6
4.12 Habitat Conservation Plans or Natural Community Conservation Plans	6
5 RESULTS.....	6
5.1 Land Cover.....	6
5.2 Wetlands and Other Aquatic Habitat.....	9
5.3 Riparian Habitat and Other Sensitive Natural Communities.....	9
5.4 Soils	10
5.5 Special-Status Species	10
5.6 Critical Habitat	20
5.7 Wildlife Movement Corridors.....	20
5.8 Wildlife Nursery Sites.....	20
5.9 Invasive Plants.....	20
6 CONCLUSIONS AND RECOMMENDATIONS.....	20
6.1 Special-Status Plants.....	20
6.2 Special-Status Wildlife and Wildlife Nursery Sites	21
6.3 Other Native Bird Species	21
6.4 Riparian Habitat, Sensitive Natural Communities, and Wetlands.....	21
7 REFERENCES.....	22
 Appendices	
A Site Plan	
B Photographs	

Figures

Figure 1	Project Site and Vicinity	2
Figure 2	Land Cover	8

Tables

Table 1	Land Cover Types on the Project Site.....	7
Table 2	Special-Status Plant Species Known to Occur in the Vicinity of the Project Site and Potential for Occurrence on the Project Site	11
Table 3	Special-Status Wildlife Species Known to Occur in the Vicinity of the Project Site and Potential for Occurrence on the Project Site	14

LIST OF ABBREVIATIONS

BMP	best management practices
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CNDDDB	California Natural Diversity Database
CRPR	California Rare Plant Rank
CWA	Clean Water Act
ECA	Essential Connectivity Areas
NCCP	natural community conservation plan
project	Tuolumne Bioenergy Inc. Woody Biomass Pellet Manufacturing Facility Project
RWQCB	regional water quality control board
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

This page intentionally left blank.

1 EXECUTIVE SUMMARY

The Tuolumne Bioenergy Inc. Woody Biomass Pellet Manufacturing Facility Project would include construction of several buildings, parking areas, roads, and other features including gates and fences. Due to the nature of project activities (e.g., ground disturbance, grading, equipment staging), impacts on biological resources could occur. A review of available biological resources data was conducted and a reconnaissance-level survey for biological resources was conducted on May 27, 2021. Based on the data review and survey, two special-status plant species (i.e., Stanislaus monkeyflower, Tuolumne fawn lily) and five special-status wildlife species (i.e., western pond turtle, San Joaquin roach, ringtail, pallid bat, western mastiff bat), as well as common native birds protected under California Fish and Game Code and the federal Migratory Bird Treaty Act, were determined to have potential to occur on the project site. Several sensitive natural communities may be present within the riparian mixed hardwood habitat on the project site and the segment of Curtis creek on the project site would be considered a water of the United States and a water of the state. All of these resources are associated with Curtis Creek and the riparian vegetation associated with Curtis Creek.

The project site is largely developed and disturbed except for a segment of Curtis Creek and riparian mixed hardwood habitat associated with Curtis Creek. No project activities (i.e., vegetation removal, staging, ground disturbance) are proposed to occur within the riparian mixed hardwood habitat adjacent to Curtis Creek or within the creek itself. As a result, direct impacts (e.g., removal or destruction of habitat, removal of nests, injury or mortality of wildlife species) would not occur. Potential indirect impacts on common nesting birds (e.g., disturbance from heavy equipment noise), riparian mixed hardwood habitat, and Curtis Creek are unlikely, but would be prevented through implementation of a nesting bird survey prior to the start of project construction activities or avoidance of the nesting bird season, installation of fencing between the riparian mixed hardwood habitat and the active construction site, and implementation of best management practices to prevent impacts on Curtis Creek (e.g., introduction of sediment, introduction of invasive aquatic species, discharge of diesel or gasoline). With implementation of these measures and best management practices as part of the project, impacts on biological resources are not expected to occur.

2 INTRODUCTION AND PROJECT DESCRIPTION

This report presents the results of a biological resources analysis for the Tuolumne Bioenergy Inc. Woody Biomass Pellet Manufacturing Facility Project (hereafter, project). The purpose of this report is to review and describe the existing biological resources within and adjacent to the project site, evaluate potential for occurrence of sensitive biological resources, assess the potential impacts to these biological resources associated with the project, and recommend mitigation for impacts that may be considered significant as required under the California Environmental Quality Act (CEQA).

The project site is in an industrial business park in unincorporated Tuolumne County, east of the City of Sonora, in California (Figure 1). The project would involve the development of a woody biomass pellet manufacturing facility. This facility would use approximately 44,000 bone dry tons of biomass annually to produce 30,000 tons of wood pellets for domestic home heating purposes. Wood pellets are densified wood products produced from raw biomass generated by forest thinning and other forestry activities, commercial milling, orchard removals, and urban/industrial tree services. The wood pellets produced by this project would be packaged and sold in 40-pound bags for individual use, and one-ton bulk bags for wholesale distribution to regional and national suppliers that sell to the domestic home heating customer. Such suppliers include hardware stores, home heating equipment dealers, and farm supply centers.

Project components will include a large office building, smaller buildings, covered outdoor storage, chip storage bunkers, asphalt parking areas, asphalt roads, gates, and fences. The project site plan is provided in Appendix A, at the end of this report.

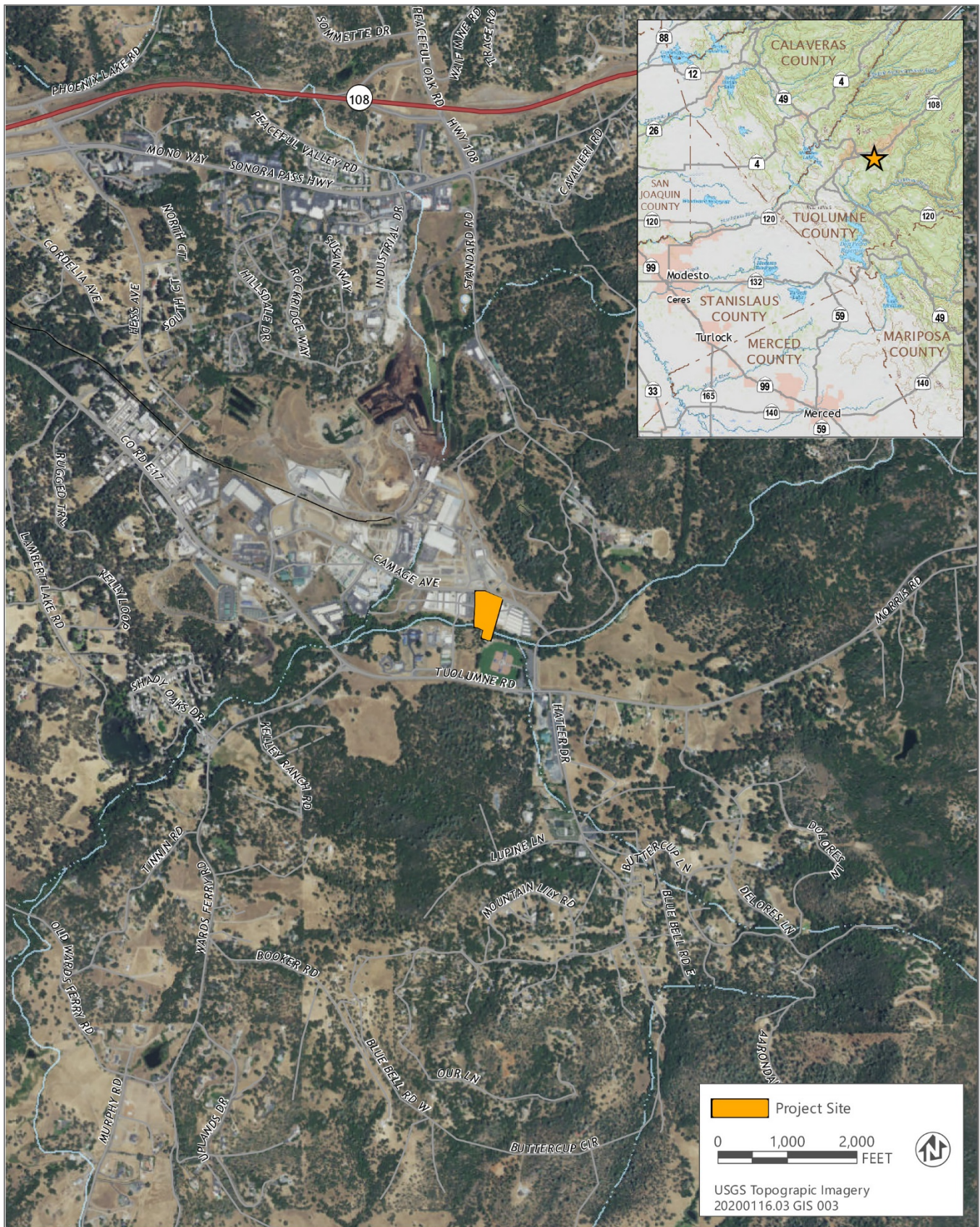


Figure 1 Project Site and Vicinity

3 DATA REVIEW AND SURVEY METHODS

Data reviewed in preparation of this analysis include:

- ▶ Results of California Natural Diversity Database (CNDDDB) records search of the Columbia, Chinese Camp, Columbia SE, Twain Harte, Sonora, Standard, Tuolumne, Moccasin, and Groveland U.S. Geological Survey (USGS) 7.5-minute quadrangles (CNDDDB 2021).
- ▶ Results of California Native Plant Society Inventory of Rare and Endangered Plants records search of the Columbia, Chinese Camp, Columbia SE, Twain Harte, Sonora, Standard, Tuolumne, Moccasin, and Groveland USGS 7.5-minute quadrangles (CNPS 2021).
- ▶ Results of U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) electronic records search (USFWS 2021a).
- ▶ Results of USFWS National Wetlands Inventory mapping (USFWS 2021b).
- ▶ Results of U.S. Department of Agriculture (USDA) Web Soil Survey (USDA 2021).
- ▶ *Tuolumne County Biological Resources Review Guide* (Tuolumne County 2011).
- ▶ Aerial photographs of the project site and vicinity.

A reconnaissance-level survey for biological resources was conducted by an Ascent biologist on May 27, 2021. During the survey, the biologist verified land cover types on the project site as well as the suitability of habitats on the project site for special-status wildlife and plant species. Aquatic habitat and wetlands and potential wetlands were noted and mapped. Representative photos of the project site were taken and are presented in Appendix B of this report.

4 KEY REGULATORY ISSUES

4.1 FEDERAL ENDANGERED SPECIES ACT

Pursuant to the federal Endangered Species Act (ESA; 16 U.S.C. Section 1531 et seq.), USFWS regulates the taking of species listed in ESA as threatened or endangered. In general, persons subject to ESA (including private parties) are prohibited from “taking” endangered or threatened fish and wildlife species on private or government-owned property, and from “taking” endangered or threatened plants in areas under federal jurisdiction or in violation of state law. Under Section 9 of the ESA, the definition of “take” is to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” USFWS has also interpreted the definition of “harm” to include significant habitat modification that could result in take.

Section 10 of ESA applies if a non-federal agency is the lead agency for an action that results in take and no other federal agencies are involved in permitting the action. Section 7 of ESA applies if a federal discretionary action is required (e.g., a federal agency must issue a permit), in which case the involved federal agency consults with USFWS.

4.2 CALIFORNIA ENDANGERED SPECIES ACT

Pursuant to the California Endangered Species Act (CESA), a permit from California Department of Fish and Wildlife (CDFW) is required for projects that could result in the “take” of a plant or animal species that is listed by the state as threatened or endangered. Under CESA, “take” is defined as an activity that would directly or indirectly kill an individual of a species, but the CESA definition of take does not include “harm” or “harass,” like the ESA definition does. As a result, the threshold for take is greater under CESA than under ESA. Authorization for take of state-listed species can be obtained through a California Fish and Game Code Section 2081 incidental take permit.

4.3 CALIFORNIA NATIVE PLANT PROTECTION ACT

The Native Plant Protection Act (NPPA; California Fish and Game Code Section 1900 et seq.) allows the California Fish and Game Commission to designate plants as rare or endangered. Sixty-four species, subspecies, and varieties of plants are protected as rare under the NPPA. The act prohibits take of endangered or rare native plants but includes exceptions for agricultural and nursery operations; for emergencies; and, after proper notification of CDFW, for vegetation removal from canals, roads, and other building sites, changes in land use, and other situations.

4.4 CLEAN WATER ACT

Section 404 of the Clean Water Act (CWA) requires project applicants to obtain a permit from U.S. Army Corps of Engineers (USACE) before performing any activity that involves any discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States include navigable waters of the United States, interstate waters, tidally influenced waters, and all other waters where the use, degradation, or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Many surface waters and wetlands in California meet the criteria for waters of the United States.

In accordance with Section 401 of the CWA, projects that apply for a USACE permit for discharge of dredged or fill material must obtain water quality certification from the appropriate regional water quality control board (RWQCB) indicating that the action would uphold state water quality standards.

4.5 PORTER-COLOGNE WATER QUALITY CONTROL ACT

Under the Porter-Cologne Act, waters of the state fall under the jurisdiction of the appropriate RWQCB. The LRDP area is within the Central Valley RWQCB. The RWQCB must prepare and periodically update water quality control plans (basin plans). Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control point and nonpoint sources of pollution to achieve and maintain these standards. The RWQCB's jurisdiction includes federally protected waters as well as areas that meet the definition of "waters of the state." Waters of the state are defined as any surface water or groundwater, including saline waters, within the boundaries of the state. In addition to water quality certifications under Section 401 of the federal CWA, discharges to waters of the state, including wetlands, must meet the RWQCB waste discharge requirements.

4.6 CALIFORNIA FISH AND GAME CODE

4.6.1 Fully Protected Species

Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code prohibit take of fully protected birds, mammals, reptiles and amphibians, and fish. Species listed under these statutes may not be taken or possessed at any time and no incidental take permits can be issued for these species except for scientific research purposes, for relocation to protect livestock, or as part of a natural community conservation plan (NCCP).

4.6.2 Protection of Nests

Section 3503 of the Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 of the California Fish and Game Code states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders *Falconiformes* and *Strigiformes*), including their nests or eggs. Typical violations include destruction of active nests as a result of tree removal or disturbance caused by project construction or other activities that cause the adults to abandon the nest, resulting in loss of eggs or young.

4.6.3 Streambed Alteration

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports fish or wildlife resources are subject to regulation by CDFW under Section 1602 of the California Fish and Game Code. Under Section 1602, it is unlawful for any person, governmental agency, or public utility to do any of the following without first notifying CDFW:

- ▶ substantially divert or obstruct the natural flow of, or substantially change or use any material from, the bed, channel, or bank of any river, stream, or lake; or
- ▶ deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

The regulatory definition of a stream is a body of water that flows at least periodically or intermittently through a bed or channel that has banks and supports fish or other aquatic life. This definition includes watercourses with a surface or subsurface flow that support or have supported riparian vegetation (California Code of Regulations Title 14, Section 1.72). CDFW jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife. A streambed alteration agreement must be obtained for any diversion or alteration that would substantially adversely affect a fish or wildlife resource in a river, stream, or lake.

4.7 MIGRATORY BIRD TREATY ACT

The Migratory Bird Treaty Act (MBTA), first enacted in 1918, provides for protection of international migratory birds and authorizes the Secretary of the Interior to regulate the taking of migratory birds. The MBTA provides that it is unlawful, except as permitted by regulations, to pursue, take, or kill any migratory bird, or any part, nest, or egg of any such bird. Under the MBTA, "take" is defined as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities." A take does not include habitat destruction or alteration, if there is not a direct taking of birds, nests, eggs, or parts thereof. The current list of species protected by the MBTA can be found in Title 50 of the Code of Federal Regulations (CFR), Section 10.13 (50 CFR 10.13). The list includes nearly all birds that are native to the United States.

4.8 CALIFORNIA ENVIRONMENTAL QUALITY ACT

CEQA applies to projects requiring approval by state and local governmental agencies. If a discretionary action by Sonoma County is required to approve the project, then CEQA compliance would be required. "Projects" are public agency actions with potential to have a physical impact on the environment. If development of the property is only subject to County ministerial action, then CEQA may not be required. Once an activity is determined to be a "project" under CEQA, the lead agency must decide whether it is exempt. If it is not exempt, the lead agency must assess the potential for significant environmental effects using thresholds of significance, which are based on applicable parts of Appendix G and Section 15065 of the State CEQA Guidelines.

4.9 TUOLUMNE COUNTY BIOLOGICAL RESOURCES REVIEW GUIDE

The Tuolumne County Biological Resources Review Guide is intended to assist property owners and County staff in evaluating impacts on biological resources and to develop consistent, effective mitigation measures to address these impacts (Tuolumne County 2011). Standard mitigation measures pertain to native oak protection (as described below in Section 3.11), water quality protection, fencing and signage, open space protection, and noxious weeds.

4.10 TUOLUMNE COUNTY GENERAL PLAN

The Natural Resources Element of the Tuolumne County General Plan (Tuolumne County 2018) contains the following policies related to biological resources in the county and that may be relevant to the project:

- ▶ **Policy 16.A.6:** Encourage the protection of clusters of native trees and vegetation and outstanding individual native and nonnative trees which help define the character of Tuolumne County.
- ▶ **Policy 16.B.5:** Evaluate and mitigate impacts to biological resources in accordance with the requirements of State and Federal law.
- ▶ **Policy 16.B.6:** Allow property owners to utilize the Tuolumne County Wildlife Handbook, which may be updated periodically, to assist in designing mitigation for impacts to biological resources resulting from new development.
- ▶ **Policy 16.B.7:** Encourage development in identified communities to minimize impacts to biological resources.
- ▶ **Policy 16.C.2:** Develop incentive programs to encourage private property owners to conserve areas that support high value biological resources.
- ▶ **Policy 16.C.3:** Support efforts to identify and protect high value biological resource areas on private lands from willing owners, especially on land that provides additional public benefits including educational, recreational and scenic opportunities.
- ▶ **Policy 16.C.5:** Encourage the conservation of oak woodlands and the preservation of heritage trees.

4.11 PREMATURE REMOVAL OF OAK TREES ORDINANCE

On April 1, 2009, the Tuolumne County Board of Supervisors adopted Ordinance 2903, which added Chapter 9.24 to the Tuolumne County Ordinance Code. Chapter 9.24 is intended to discourage the premature removal of oak trees by establishing procedures and penalties for such removal. The removal of native oak trees meeting one or more of the criteria listed below from a project site within five years preceding the submittal of an application for a discretionary entitlement from Tuolumne County for a land development project on that site is deemed premature removal of oak trees:

- ▶ Removal of native oak trees resulting in a 10 percent or greater average decrease in native oak canopy cover within an oak woodland;
- ▶ Removal of any old growth oak tree (i.e., any native oak tree greater than 24 inches diameter at breast height [dbh]); or
- ▶ Removal of any valley oak tree measuring five inches or greater in dbh.

The loss of native oak trees or oak canopy due to premature removal shall be mitigated, and mitigation shall be in accordance with the measures provided in the Tuolumne County Biological Resources Conservation Handbook, which includes fee contributions to the Tuolumne County Oak Woodland Conservation Fund, protection of existing oak woodland onsite or offsite through a conservation easement, or fee title dedication to a land conservation group at a 1:1 ratio.

4.12 HABITAT CONSERVATION PLANS OR NATURAL COMMUNITY CONSERVATION PLANS

The project site is not within the plan area of any adopted habitat conservation plan or NCCP.

5 RESULTS

5.1 LAND COVER

Land cover on the project site was verified during the reconnaissance-level survey and was characterized using Classification and Assessment with Landsat of Visible Ecological Groupings (CALVEG) categories. The approximately

3.3-acre project site is mostly developed, and the southern portion of the project site is characterized as annual grasses and forbs and riparian mixed hardwood associated with Curtis Creek (Table 1, Figure 2). These land cover categories are described in more detail below.

All project components will be installed or constructed within the developed portion of the project site and the northern half of the annual grasses and forbs portion of the project site.

5.1.1 Developed

The project site contains approximately 2.2 acres of developed habitat (Table 1, Figure 2). Developed habitat on the project site has been previously graded and is covered in coarse gravel (Appendix B, Photograph 1). Remnant building materials (i.e., cement blocks with rebar) are present in one area in the eastern half of the developed portion of the project site (Appendix B, Photograph 2). A patch of dry, potentially dead willows (*Salix* spp.) is present in the middle of the developed portion of the project site (Appendix B, Photograph 3). Willows are often associated with riparian habitat. The willows are located approximately 180 feet north of the riparian corridor associated with Curtis Creek, and based on review of historical imagery, were established in uplands and have not previously been contiguous with the riparian woodland described below. The developed nature of this portion of the project site is consistent with the surrounding landscape within the industrial park.

5.1.2 Annual Grasses and Forbs

The southern half of the project site contains approximately 0.6 acre of annual grasses and forbs (Table 1, Figure 2; Appendix B, Photograph 4). This habitat is dominated by nonnative species including thistle (*Centaurea* spp.) and nonnative grasses including brome (*Bromus* spp.), and oat (*Avena* spp.), and barbed goatgrass (*Aegilops triuncialis*). A large pile of logs is present on the edge of this habitat and the developed portion of the project site (Appendix B, Photograph 5). The annual grasses and forbs habitat is considered ruderal, is relatively disturbed (e.g., trampled, routinely mowed), and does not provide high-quality natural habitat. No evidence of wildlife activity (e.g., rodent burrows, scat, tracks) was observed within this habitat.

5.1.3 Riparian Mixed Hardwood

Approximately 0.5 acre of riparian mixed hardwood is present in the southern portion of the project site adjacent to Curtis Creek (Table 1, Figure 2). Canopy tree species in this habitat include valley oak (*Quercus lobata*), Oregon ash (*Fraxinus latifolia*), and box elder (*Acer negundo*; Appendix B, Photograph 6). Understory tree species include willow (*Salix* sp.), big leaf maple (*Acer macrophyllum*), and immature canopy trees. Shrub and herbaceous species in the understory include Himalayan blackberry (*Rubus armeniacus*) and mugwort (*Artemisia douglasiana*) (Appendix B, Photograph 7).

Table 1 Land Cover Types on the Project Site

Land Cover/Habitat Type	Acreage
Developed	2.16
Annual Grasses and Forbs	0.60
Riparian Mixed Hardwood	0.53

Ascent Environmental 2021



Source: Mapped by Ascent in 2021

Figure 2 Land Cover

5.2 WETLANDS AND OTHER AQUATIC HABITAT

The upland portions of the project site do not contain wetlands, streams, or other aquatic features. Aquatic habitat on the project site is limited to Curtis Creek, which runs through the southern portion of the project site, east to west. Curtis Creek is a small, slow-moving, perennial stream, and during the reconnaissance-level survey on May 27, 2021, some small, stagnant pools were observed in the creek. It is not likely that these pools persist year-round based on the observed flow of the creek. The banks of the creek are steep and densely vegetated with Himalayan blackberry. Curtis creek would be considered a water of the United States and a water of the state.

5.3 RIPARIAN HABITAT AND OTHER SENSITIVE NATURAL COMMUNITIES

Sensitive natural communities are those native plant communities defined by CDFW as having limited distribution statewide or within a county or region and that are often vulnerable to environmental effects of projects (CDFW 2018). These communities may or may not contain special-status plants or their habitat (CDFW 2018). CDFW designates sensitive natural communities based on their state rarity and threat ranking using NatureServe's Heritage Methodology. Natural communities with rarity ranks of S1 to S3, where S1 is critically imperiled, S2 is imperiled, and S3 is vulnerable, are considered sensitive natural communities to be addressed in the environmental review processes of CEQA and its equivalents (CDFW 2018). Many riparian plant communities qualify as sensitive natural communities based on the plant associations therein. In addition, riparian habitats are protected under section 1602 of California Fish and Game Code.

Sensitive natural communities are generally identified at the alliance level of vegetation classification hierarchy using the Manual of California Vegetation (Sawyer et al. 2009). Known occurrences of sensitive natural communities are included in the CNDDDB; however, no new occurrences have been added to the CNDDDB since the mid-1990s when funding was cut for this portion of the CNDDDB program. One sensitive natural community was identified within the nine USGS 7.5-minute quadrangles surrounding the project site: northern hardpan vernal pool (CNDDDB 2021). The project site does not contain vernal pool habitat. Given the incomplete nature of this information in the CNDDDB, and the presence of riparian mixed hardwood habitat on the project site, several specific sensitive natural communities may occur on the project site, as identified below.

5.3.1 Box Elder Forest and Woodland

Box elder is one of the components of the canopy of the riparian mixed hardwood habitat on the project site. Membership rules for the box elder forest and woodland sensitive natural community include habitats with over 50 percent relative tree canopy cover composed of box elder, often with the remainder of the canopy composed of Oregon ash, Fremont cottonwood (*Populus fremontii*), valley oak, and willow (Sawyer et al. 2009). Portions of the riparian mixed hardwood habitat on the project site may meet these membership rules. This sensitive natural community has a state rarity ranking of S2.2.

5.3.2 Oregon Ash Groves

Oregon ash is one of the components of the canopy of the riparian mixed hardwood habitat on the project site. Membership rules for the Oregon ash groves sensitive natural community include habitats with over 5 percent absolute cover and over 30 percent relative tree canopy cover composed of Oregon ash, often with the remainder of the canopy composed of big leaf maple, alder (*Alnus spp.*), incense cedar (*Calocedrus decurrens*), ponderosa pine (*Pinus ponderosa*), black oak (*Quercus kelloggii*), interior live oak (*Quercus wislizeni*), and willow (Sawyer et al. 2009). Portions of the riparian mixed hardwood habitat on the project site may meet these membership rules. This sensitive natural community has a state rarity ranking of S3.2.

5.3.3 Valley Oak Woodland and Forest

Valley oak is one of the components of the canopy of the riparian mixed hardwood habitat on the project site. Membership rules for the valley oak woodland and forest sensitive natural community include habitats with over 35 percent relative tree canopy cover composed of valley oak, often with the remainder of the canopy composed of box elder, alder, Oregon ash, Fremont cottonwood, or California sycamore (*Platanus racemosa*; Sawyer et al. 2009). Portions of the riparian mixed hardwood habitat on the project site may meet these membership rules. This sensitive natural community has a state rarity ranking of S3.

5.4 SOILS

Soils present on the project site were assessed using the USDA Web Soil Survey (USDA 2021). Soils on the project site include Urban land-Sierra-Flanly complex soils in upland areas and Cumulic Humixerepts-Riverwash complex soils associated with Curtis Creek (USDA 2021). No serpentine, gabbro, or ultramafic soils are present on the project site.

5.5 SPECIAL-STATUS SPECIES

Special-status species are defined as species that are legally protected or that are otherwise considered sensitive by federal, state, or local resource agencies. Special-status species are species, subspecies, or varieties that fall into one or more of the following categories, regardless of their legal or protection status:

- ▶ officially listed by California under CESA or the federal government under ESA as endangered, threatened, or rare;
- ▶ a candidate for state or federal listing as endangered, or threatened under CESA or ESA;
- ▶ taxa (i.e., taxonomic category or group) that meet the criteria for listing, even if not currently included on any list, as described in Section 15380 of the State CEQA Guidelines;
- ▶ species identified by CDFW as Species of Special Concern;
- ▶ species listed as Fully Protected under the California Fish and Game Code;
- ▶ species afforded protection under local planning documents; and
- ▶ taxa considered by CDFW to be “rare, threatened, or endangered in California” and assigned a California Rare Plant Rank (CRPR) of 1 or 2. The CDFW system includes rarity and endangerment ranks for categorizing plant species of concern, and ranks 1 and 2 are summarized as follows:
 - CRPR 1A - Plants presumed to be extinct in California;
 - CRPR 1B - Plants that are rare, threatened, or endangered in California and elsewhere;
 - CRPR 2A - Plants presumed to be extinct in California but common elsewhere;
 - CRPR 2B - Plants that are rare, threatened, or endangered in California but more common elsewhere; and

The term “California species of special concern” is applied by CDFW to animals not listed under ESA or CESA, but that are considered to be declining at a rate that could result in listing, or that historically occurred in low numbers and known threats to their persistence currently exist. CDFW’s fully protected status was California’s first attempt to identify and protect animals that were rare or facing extinction. Most species listed as fully protected were eventually listed as threatened or endangered under CESA; however, some species remain listed as fully protected but do not have simultaneous listing under CESA. Fully protected species may not be taken or possessed at any time and no take permits can be issued for these species except for scientific research purposes, for relocation to protect livestock, or as part of an NCCP.

Of the 37 special-status plant species that are known to occur within the nine USGS 7.5-minute quadrangles including and surrounding the project site two species were determined to have potential to occur based on the presence of

habitat suitable for the species (CNDDDB 2021, CNPS 2021, Table 2). Of the 30 special-status wildlife species that could occur within the nine USGS 7.5-minute quadrangles including and surrounding the project site, five species were determined to have potential to occur based on the presence of habitat suitable for the species (CNDDDB 2021, Table 3). The tables describe the species' regulatory status, habitat, and potential for occurrence in the project site.

Table 2 Special-Status Plant Species Known to Occur in the Vicinity of the Project Site and Potential for Occurrence on the Project Site

Species	Listing Status ¹ Federal	Listing Status ¹ State	CRPR	Habitat	Potential for Occurrence
Jepson's onion <i>Allium jepsonii</i>	–	–	1B.2	On serpentine soils in Sierra foothills, volcanic soil on Table Mountain. On slopes and flats; usually in an open area. 1,165–3,710 feet in elevation. Blooms April–August.	Not expected to occur. The project site does not contain serpentine or volcanic soils.
Three-bracted onion <i>Allium tribracteatum</i>	–	–	1B.2	Volcanic slopes and ridges. 2,890–9,300 feet in elevation. Blooms April–August.	Not expected to occur. The project site does not contain volcanic soils.
Rawhide Hill onion <i>Allium tuolumnense</i>	–	–	1B.2	Restricted to serpentine soil, usually in gray pine chaparral. Steep, rocky, south-facing slopes, or small drainages. 985–1,970 feet in elevation. Blooms March–May.	Not expected to occur. The project site does not contain serpentine soils or chaparral habitat.
Nissenan manzanita <i>Arctostaphylos nissenana</i>	–	–	1B.2	Usually on metamorphic soils and associated with other chaparral species. 1,525–5,280 feet in elevation. Blooms February–March.	Not expected to occur. The project site does not contain chaparral habitat and no manzanita species were observed during the reconnaissance-level survey.
Big-scale balsamroot <i>Balsamorhiza macrolepis</i>	–	–	1B.2	Open grassy or rocky slopes. Sometimes on serpentine. 115–4,810 feet in elevation. Blooms March–June.	Not expected to occur. The project site does not contain open grassy or rocky slopes or serpentine soils.
Chinese Camp brodiaea <i>Brodiaea pallida</i>	FT	SE	1B.1	Often in rocky, intermittent streambeds. At least sometimes on serpentine. 540–1,265 feet in elevation. Blooms May–June.	Not expected to occur. The project site does not contain serpentine soils or rocky streambed habitat.
Hoover's calycadenia <i>Calycadenia hooveri</i>	–	–	1B.3	On exposed, rocky, barren soil. 230–855 feet in elevation. Blooms July–September.	Not expected to occur. The project site is outside of the known range of this species.
Red Hills soaproot <i>Chlorogalum grandiflorum</i>	–	–	1B.2	Occurs frequently on serpentine or gabbro, but also on non-ultramafic substrates, often on historically disturbed sites. 805–4,070 feet in elevation. Blooms May–June.	Not expected to occur. The project site is outside of the known range of this species.
Mariposa clarkia <i>Clarkia biloba</i> ssp. <i>australis</i>	–	–	1B.2	Chaparral and woodland. Several sites occur in the foothill woodland/riparian ecotone. 395–4,810 feet in elevation. Blooms April–July.	Not expected to occur. The project site does not contain chaparral or woodland habitat.
Beaked clarkia <i>Clarkia rostrata</i>	–	–	1B.3	Oak and pine woodland. North-facing slopes; sometimes on sandstone. 197–3,002 feet in elevation. Blooms April–May.	Not expected to occur. The project site does not contain woodland habitat.
Mariposa cryptantha <i>Cryptantha mariposae</i>	–	–	1B.3	On serpentine outcrops. 660–2,135 feet in elevation. Blooms April–June.	Not expected to occur. The project site does not contain serpentine soils.
Red Hills cryptantha <i>Cryptantha spithamaea</i>	–	–	1B.3	Serpentinite, sometimes streambeds, sometimes openings. 900–1,510 feet in elevation. Blooms April–May.	Not expected to occur. The project site does not contain serpentine soils.

Species	Listing Status ¹ Federal	Listing Status ¹ State	CRPR	Habitat	Potential for Occurrence
Yellow-lip pansy monkeyflower <i>Diplacus pulchellus</i>	–	–	1B.2	Vernally wet depressions or seeps. Soils can be clay, volcanic, or granitic. 2,200–6,400 feet in elevation. Blooms April–July.	Not expected to occur. The project site does not contain vernal wet depressions or seeps.
Dwarf downingia <i>Downingia pusilla</i>	–	–	2B.2	Vernal lake and pool margins with a variety of associates. In several types of vernal pools. 3–1,610 feet in elevation. Blooms March–May.	Not expected to occur. The project site does not contain vernal pool habitat.
Jepson's coyote-thistle <i>Eryngium jepsonii</i>	–	–	1B.2	Vernal pools, valley and foothill grassland. Clay. 10–985 feet in elevation. Blooms April–August.	Not expected to occur. The project site does not contain vernal pool habitat.
Tuolumne button-celery <i>Eryngium pinnatisectum</i>	–	–	1B.2	Volcanic soils; vernal pools and mesic sites within other natural communities. 230–3,000 feet in elevation. Blooms May–August.	Not expected to occur. The project site does not contain volcanic soils or vernal pool habitat.
Delta button-celery <i>Eryngium racemosum</i>	–	SE	1B.1	Seasonally inundated floodplain on clay. 3–1,110 feet in elevation. Blooms June–October.	Not expected to occur. The project site does not contain seasonally inundated floodplain habitat.
Slender-stemmed monkeyflower <i>Erythranthe filicaulis</i>	–	–	1B.2	Meadows. 2,950–5,740 feet in elevation. Blooms April–August.	Not expected to occur. The project site does not contain meadow habitat.
Stanislaus monkeyflower <i>Erythranthe marmorata</i>	–	–	1B.1	Seeps and streambanks. 330–2,950 feet in elevation. Blooms March–May.	May occur. Streambank habitat potentially suitable for this species is present adjacent to Curtis Creek.
Tuolumne fawn lily <i>Erythronium tuolumnense</i>	–	–	1B.2	Open woodlands and shady canyons. Often on clay soils, on cliffs, or near drainages. 1,590–4,610 feet in elevation. Blooms March–June.	May occur. Riparian habitat near Curtis Creek may provide habitat suitable for this species.
Delicate bluecup <i>Githopsis tenella</i>	–	–	1B.3	Chaparral, cismontane woodland. Mesic sites. 3,610–6,230 feet in elevation. Blooms April–June.	Not expected to occur. The project site does not contain chaparral or woodland habitat.
Parry's horkelia <i>Horkelia parryi</i>	–	–	1B.2	Openings in chaparral or woodland; especially known from the lone formation in Amador County. 280–3,660 feet in elevation. Blooms April–September.	Not expected to occur. The project site does not contain chaparral or woodland habitat.
Copper-flowered bird's-foot trefoil <i>Hosackia oblongifolia</i> var. <i>cuprea</i>	–	–	1B.3	Wet meadow borders. 7,875–9,020 feet in elevation. Blooms June–August.	Not expected to occur. The project site does not contain wet meadow habitat.
Tuolumne iris <i>Iris hartwegii</i> ssp. <i>columbiana</i>	–	–	1B.2	Cismontane woodland, lower montane coniferous forest. 1,395–4,595 feet in elevation. Blooms May–June.	Not expected to occur. The project site is outside of the known range of this species and does not contain woodland or forest habitat.
Forked hare-leaf <i>Lagophylla dichotoma</i>	–	–	1B.1	Cismontane woodland, valley and foothill grassland. Sometimes clay. 620–1,100 feet in elevation. Blooms April–May.	Not expected to occur. The project site is outside of the known range of this species.
Congdon's lomatium <i>Lomatium congdonii</i>	–	–	1B.2	Serpentine soils with serpentine chaparral plants and gray pines. 1,100–2,050 feet in elevation. Blooms March–June.	Not expected to occur. The project site does not contain serpentine soils.

Species	Listing Status ¹ Federal	Listing Status ¹ State	CRPR	Habitat	Potential for Occurrence
Stebbins' lomatium <i>Lomatium stebbinsi</i>	–	–	1B.1	Thin, gravelly volcanic clay in open yellow pine forest; lava caps, andesite breccia. Grows where other vegetation is absent. 3,740–7,710 feet in elevation. Blooms March–May.	Not expected to occur. The project site does not contain volcanic clay, lava caps, or andesite breccia, or yellow pine forest.
Shaggyhair lupine <i>Lupinus spectabilis</i>	–	–	1B.2	Mostly on serpentine chaparral surrounded by gray pine woodland. 850–2,710 feet in elevation. Blooms April–May.	Not expected to occur. The project site does not contain serpentine soils.
Veiny monardella <i>Monardella venosa</i>	–	–	1B.1	In heavy clay; mostly with grassland associates. Rediscovered in 1992. 95–1,330 feet in elevation. Blooms May–July.	Not expected to occur. The project site is outside of the known range of this species.
Mi-Wuk navarretia <i>Navarretia miwukensis</i>	–	–	1B.2	Open, sparsely vegetated pyroclastic flows, often gently sloping terrain. 2,625–4,920 feet in elevation. Blooms May–August.	Not expected to occur. The project site does not contain pyroclastic flows or gently sloping (natural) terrain.
Patterson's navarretia <i>Navarretia paradoxiclora</i>	–	–	1B.3	Serpentinite, openings, vernal mesic, often drainages. 490–1,410 feet in elevation. Blooms May–June.	Not expected to occur. The project site does not contain serpentine soils.
Colusa grass <i>Neostapfia colusana</i>	FT	SE	1B.1	Usually in the bottoms of large, or deep vernal pools; adobe soils. 15–410 feet in elevation. Blooms May–August.	Not expected to occur. The project site does not contain vernal pool habitat.
Layne's ragwort <i>Packera layneae</i>	FT	SR	1B.2	Ultramafic soil (serpentine or gabbro); occasionally along streams. 655–3,560 feet in elevation. Blooms April–August.	Not expected to occur. The project site does not contain ultramafic soils.
Hartweg's golden sunburst <i>Pseudobahia bahiifolia</i>	FE	SE	1B.1	Clay soils, often acidic. Predominantly on the northern slopes of knolls, but also along shady creeks or near vernal pools. 195–560 feet in elevation. Blooms March–April.	Not expected to occur. The project site is outside of the known range of this species.
Tongue-leaf copper moss <i>Scopelophila cataractae</i>	–	–	2B.2	Known in CA from only one occurrence near Copperopolis. Moss on metamorphic substrate; on soil in woodlands.	Not expected to occur. The project site does not contain metamorphic substrates.
Red Hills ragwort <i>Senecio clevelandii</i> var. <i>heterophyllus</i>	–	–	1B.2	Drying serpentine soils; often along streams. 850–1,265 feet in elevation. Blooms May–July.	Not expected to occur. The project site does not contain serpentine soils.
Red Hills vervain <i>Verbena californica</i>	FT	ST	1B.1	Mesic sites on serpentine; usually serpentine seeps or creeks. 835–1,150 feet in elevation. Blooms May–September.	Not expected to occur. The project site does not contain serpentine soils.

Notes: CRPR = California Rare Plant Rank; CEQA = California Environmental Quality Act; ESA = Endangered Species Act; NPPA = Native Plant Protection Act

1 Legal Status Definitions

Federal:

FE Federally Listed as Endangered (legally protected by ESA)

FT Federally Listed as Threatened (legally protected by ESA)

State:

SE State Listed as Endangered (legally protected by CESA)

ST State Listed as Threatened (legally protected by CESA)

SR State Listed as Rare (legally protected by NPPA)

California Rare Plant Ranks (CRPR):

1A Plant species that are presumed extirpated or extinct because they have not been seen or collected in the wild in California for many years. A plant is extinct if it no longer occurs anywhere. A plant that is extirpated from California has been eliminated from California but may still occur elsewhere in its range.

1B Plant species considered rare or endangered in California and elsewhere (protected under CEQA, but not legally protected under ESA or CESA).

2B Plant species considered rare or endangered in California but more common elsewhere (protected under CEQA, but not legally protected under ESA or CESA).

CRPR Threat Ranks:

0.1 Seriously threatened in California (over 80% of occurrences threatened; high degree and immediacy of threat)

0.2 Moderately threatened in California (20-80% occurrences threatened; moderate degree and immediacy of threat)

0.3 Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Sources: CNDDDB 2021; CNPS 2021

Table 3 Special-Status Wildlife Species Known to Occur in the Vicinity of the Project Site and Potential for Occurrence on the Project Site

Species	Listing Status ¹ Federal	Listing Status ¹ State	Habitat	Potential for Occurrence
Amphibians and Reptiles				
California red-legged frog <i>Rana draytonii</i>	FT	SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby, or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	Not expected to occur. California red-legged frogs have been historically (1950) documented in Woods Creek, approximately 5.5 miles northwest of the project site (CNDDDB 2021). The portion of Curtis Creek on project site does not contain permanent pools suitable for California red-legged frogs.
Coast horned lizard <i>Phrynosoma blainvillii</i>	-	SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	Not expected to occur. The project site is graded and does not contain open habitat with bushes and patches of loose soil.
Foothill yellow-legged frog <i>Rana boylei</i>	-	SE	Partly shaded shallow streams and riffles with a rocky substrate in a variety of habitats. Need at least some cobble-sized substrate for egg-laying. Need at least 15 weeks to attain metamorphosis.	Not expected to occur. While foothill yellow-legged frogs are known to occur in the Tuolumne River watershed, they have not been documented in Curtis Creek (CNDDDB 2021). The portion of Curtis Creek on the project site does not contain rocky cobble substrate, is slow-moving, and stagnant. The stream habitat in Curtis Creek is not suitable for foothill yellow-legged frog.
Western pond turtle <i>Actinemys marmorata</i>	-	SSC	An aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches, usually with aquatic vegetation, below 6,000 feet elevation. Need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 1,600 feet from water for egg-laying.	May occur. Curtis Creek, which runs through the southern portion of the project site, may provide aquatic habitat suitable for western pond turtle. While the banks immediately adjacent to Curtis Creek may provide upland habitat suitable for this species, the upland areas of the project site are either developed or disturbed and would not provide upland habitat suitable for western pond turtle.

Species	Listing Status ¹ Federal	Listing Status ¹ State	Habitat	Potential for Occurrence
Western spadefoot <i>Spea hammondi</i>	-	SSC	Occurs primarily in grassland habitats but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	Not expected to occur. The project site does not contain grassland habitat with vernal pools.
Birds				
Bald eagle <i>Haliaeetus leucocephalus</i>	FD	SE FP	Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water. Nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter.	Not expected to occur. Nesting habitat suitable for bald eagle (i.e., large trees) is not present on or adjacent to the project site.
Burrowing owl <i>Athene cucularia</i>	-	SSC	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Not expected to occur. The project site is graded and does not contain grassland habitat suitable for burrowing owl. No large burrows or California ground squirrel activity was observed during the reconnaissance-level survey.
California spotted owl <i>Strix occidentalis</i>	-	SSC	Mixed conifer forest, often with an understory of black oaks and other deciduous hardwoods. Canopy closure greater than 40 percent. Most often found in deep-shaded canyons, on north-facing slopes, and within 1,000 feet of water.	Not expected to occur. Forest habitat suitable for California spotted owl is not present on or adjacent to the project site.
Golden eagle <i>Aquila chrysaetos</i>	-	FP	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	Not expected to occur. Nesting habitat suitable for golden eagle (i.e., large trees, cliffs) is not present on or adjacent to the project site.
Grasshopper sparrow <i>Ammodramus savannarum</i>	-	SSC	Dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes. Favors native grasslands with a mix of grasses, forbs, and scattered shrubs. Loosely colonial when nesting.	Not expected to occur. The project site does not contain dense native grassland habitat.
Great gray owl <i>Strix nebulosa</i>	-	SE	Resident of mixed conifer or red fir forest habitat, in or on edge of meadows. Requires large diameter snags in a forest with high canopy closure, which provide a cool sub-canopy microclimate.	Not expected to occur. Nesting habitat suitable for great gray owl (i.e., large trees, adjacent meadows) is not present on or adjacent to the project site.
Tricolored blackbird <i>Agelaius tricolor</i>	-	ST	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	Not expected to occur. Nesting habitat suitable for tricolored blackbirds is not present on the project site. While this species is known to nest in Himalayan blackberry, the blackberry adjacent to Curtis Creek does not provide enough structure and is subject to disturbance from surrounding development.

Species	Listing Status ¹ Federal	Listing Status ¹ State	Habitat	Potential for Occurrence
Fish				
Chinook salmon - Central Valley fall / late fall-run ESU <i>Oncorhynchus tshawytscha</i> pop. 13	-	SSC	Populations spawning in the Sacramento and San Joaquin rivers and their tributaries.	Not expected to occur. The project site is outside of the known range of this species.
Delta smelt <i>Hypomesus transpacificus</i>	FT	SE	Seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay. Seldom found at salinities less than 10 ppt. Most often at salinities greater than 2 ppt.	Not expected to occur. The project site is outside of the known range of this species.
Green sturgeon <i>Acipenser medirostris</i>	FT	SSC	Spawns in the Sacramento, Klamath, and Trinity Rivers. Spawns at temperatures between 8-14 degrees Celsius. Preferred spawning substrate is large cobble but can range from clean sand to bedrock.	Not expected to occur. The project site is outside of the known range of this species.
Hardhead <i>Mylopharodon conocephalus</i>	-	SSC	Low to mid-elevation streams in the Sacramento-San Joaquin drainage. Also present in the Russian River. Clear, deep pools with sand-gravel-boulder bottoms and slow water velocity. Not found where exotic centrarchids predominate.	Not expected to occur. The project site is outside of the known range of this species.
Red Hills roach <i>Lavinia symmetricus</i> ssp. 3	-	SSC	Small streams near Sonora. Found in areas with serpentine soil.	Not expected to occur. The project site is outside of the known range of this species.
Sacramento hitch <i>Lavinia exilicauda</i>	-	SSC	Most often found in slow warm water, including lakes and quiet stretches of rivers.	Not expected to occur. The project site is outside of the known range of this species.
San Joaquin roach <i>Lavinia symmetricus</i> ssp. 1	-	SSC	Tributaries to the San Joaquin River from the Cosumnes River south.	May occur. San Joaquin roach has been documented in Curtis Creek approximately 2 miles west of the project site (CNDDDB 2021). The portion of Curtis Creek on the project site may provide habitat suitable for this species.
Steelhead - Central Valley DPS <i>Oncorhynchus mykiss irideus</i> pop. 11	FT	-	Populations in the Sacramento and San Joaquin rivers and their tributaries.	Not expected to occur. The project site is outside of the known range of this species.

Species	Listing Status ¹ Federal	Listing Status ¹ State	Habitat	Potential for Occurrence
Invertebrates				
Crotch bumble bee <i>Bombus crotchii</i>	–	–	Bumble bees have three basic habitat requirements: suitable nesting sites for the colonies, availability of nectar and pollen from floral resources throughout the duration of the colony period (spring, summer, and fall), and suitable overwintering sites for the queens. Crotch bumble bee historically ranged from coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include <i>Antirrhinum</i> , <i>Phacelia</i> , <i>Clarkia</i> , <i>Dendromecon</i> , <i>Eschscholzia</i> , and <i>Eriogonum</i> .	Not expected to occur. There is one historic (1919) documented occurrence of crotch bumble bee in the vicinity of the project site (CNDDDB 2021). The extent of the range of this species has been significantly reduced and it is no longer present throughout most of its historic range (Xerces 2018). Further, habitat present on the project site is marginal as it is mostly developed, and floral resources are limited to the disturbed ruderal areas and Himalayan blackberry. Based on the marginal habitat and lack of recent documented occurrences of this species in Tuolumne County, the species is unlikely to occur on the project site.
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	FT	–	Riparian scrub. Occurs only in the Central Valley of California, in association with blue elderberry (<i>Sambucus nigra</i> ssp. <i>caerulea</i>). Prefers to lay eggs in elderberries 2-8 inches in diameter; some preference shown for "stressed" elderberry shrubs.	Not expected to occur. The project site does not contain blue elderberry shrubs; thus, habitat suitable for this species is not present.
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FT	–	Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	Not expected to occur. The project site does not contain vernal pool habitat suitable for this species.
Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	FE	–	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in grass bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.	Not expected to occur. The project site does not contain vernal pool habitat suitable for this species.
Western bumble bee <i>Bombus occidentalis</i>	–	–	Western bumble bee is currently largely restricted to high elevation areas in the Sierra Nevada (Xerces 2018). Bumble bees have three basic habitat requirements: suitable nesting sites for the colonies, availability of nectar and pollen from floral resources throughout the duration of the colony period (spring, summer, and fall), and suitable overwintering sites for the queens.	Not expected to occur. There is one historic (1961) documented occurrence of western bumble bee in the vicinity of the project site (i.e., near Murphy's CA; CNDDDB 2021). The extent of the range of this species has been significantly reduced and it is no longer present throughout most of its historic range (Xerces 2018). Further, habitat present on the project site is marginal as it is mostly developed, and floral resources are limited to the disturbed ruderal areas and Himalayan blackberry. Based on the marginal habitat and lack of recent documented occurrences of this species in Tuolumne County, the species is unlikely to occur on the project site.

Species	Listing Status ¹ Federal	Listing Status ¹ State	Habitat	Potential for Occurrence
Mammals				
American badger <i>Taxidea taxus</i>	-	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils, and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	Not expected to occur. The project site is almost completely developed, and the small area of ruderal grassland habitat is not large enough or contiguous with other surrounding habitat to provide habitat suitable for American badger.
Pallid bat <i>Antrozous pallidus</i>	-	SSC	Deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	May occur. The riparian mixed hardwood habitat on the project site may provide roosting habitat suitable for pallid bats.
Ringtail <i>Bassariscus astutus</i>	-	FP	Riparian habitats, forest habitats, and shrub habitats in lower to middle elevations. Usually found within 0.6 mile of a permanent water source.	May occur. The project site contains riparian habitat potentially suitable for this species. However, the riparian corridor along Curtis creek is narrow and is surrounded by development. As a result, this habitat would likely only function as a movement corridor for ringtail, and does not provide breeding habitat (i.e., large trees with hollows, rocky areas) suitable for the species.
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	-	SSC	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	Not expected to occur. Roost habitat suitable for Townsend's big-eared bat is not present on the project site.
Western mastiff bat <i>Eumops perotis californicus</i>	-	SSC	Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, and chaparral. Roosts in crevices in cliff faces, high buildings, trees, and tunnels.	May occur. The riparian mixed hardwood habitat on the project site may provide roosting habitat suitable for western mastiff bats.

Notes: CNDDDB = California Natural Diversity Database; CEQA = California Environmental Quality Act

1 Legal Status Definitions

Federal:

- FE Federally Listed as Endangered (legally protected)
- FT Federally Listed as Threatened (legally protected)
- FD Federally Delisted

State:

- FP Fully protected (legally protected)
- SSC Species of special concern (no formal protection other than CEQA consideration)
- SE State Listed as Endangered (legally protected)
- ST State Listed as Threatened (legally protected)
- SC State Candidate for listing (legally protected)
- SD State Delisted

Sources: CNDDDB 2021; USFWS 2021a; Xerces 2018

5.5.1 Special-Status Plants

Two special status plants were determined to have potential to occur on the project site: Stanislaus monkeyflower and Tuolumne fawn lily (Table 2). Stanislaus monkeyflower has a CRPR of 1B.1 and Tuolumne fawn lily has a CRPR of 1B.2 (Table 2). Habitat potentially suitable for both species is limited on the project site to streambank habitat immediately adjacent to Curtis Creek.

5.5.2 Western Pond Turtle

Western pond turtle is a CDFW species of special concern. This species can be found in many different aquatic habitats, including ponds (natural or human-made), marshes, rivers, and irrigation ditches. Western pond turtle uses upland habitat for basking and egg-laying. Upland habitat may include grasslands, scrub, or woodland habitats. Western pond turtles are known to travel into uplands up to 0.3 mile (approximately 1,600 feet) from aquatic habitat (Reese and Welsh 1997). The portion of Curtis Creek in the southern portion of the project site may provide aquatic habitat suitable for western pond turtle.

5.5.3 San Joaquin Roach

San Joaquin roach is a subspecies of the California roach, and is a CDFW species of special concern. This species is generally found in small, warm intermittent streams, and dense populations are frequently found in isolated pools. This species is known to occur within tributaries to the San Joaquin River from the Cosumnes River south, and has been documented within Curtis Creek, approximately 2 miles upstream of the project site (CNDDDB 2021). The portion of Curtis Creek in the southern portion of the project site likely provides habitat suitable for San Joaquin roach.

5.5.4 Ringtail

Ringtail is a fully protected species under California Fish and Game Code. Ringtail occurrences are not tracked in the CNDDDB; however, the range of the species in California includes most of the state. Ringtails are typically associated with riparian, forest, and shrub habitats. Ringtails use a variety of habitats for denning, including rock crevices, snags, and tree hollows. Habitat potentially suitable for ringtail is present within the riparian mixed hardwood habitat in the southern portion of the project site. However, the riparian corridor along Curtis creek is narrow and is surrounded by development. As a result, this habitat would likely only function as a movement corridor for ringtail, and does not provide breeding habitat (i.e., large trees with hollows, rocky areas) suitable for the species.

5.5.5 Pallid Bat and Western Mastiff Bat

Two special-status bat species could occur on the project site: pallid bat and western mastiff bat. Both species are CDFW species of special concern. These species use a variety of habitats to roost, including caves, crevices, mines, hollow trees, and buildings. Roosting habitat potentially suitable for these species is present within large trees (i.e., in cavities, crevices) in the riparian mixed hardwood habitat in the southern portion of the project site.

5.5.6 Other Native Bird Species

While other native bird species may not be considered special-status species, all native bird nests are protected by California Fish and Game Code and MBTA, as described above in Section 3. Trees and brush (i.e., Himalayan blackberry) in the riparian mixed hardwood habitat in the southern portion of the project site likely provide nesting habitat for various common native birds, including red-shouldered hawk (*Buteo lineatus*), northern mockingbird (*Mimus polyglottos*), American robin (*Turdus migratorius*), California scrub jay (*Aphelocoma californica*), or acorn woodpeckers (*Melanerpes formicivorus*).

5.6 CRITICAL HABITAT

Critical habitat is mapped by USFWS and is defined in ESA as specific geographic areas that contain features essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical habitat may include an area that is not currently occupied by the species but that may be needed for its recovery. Given the large scale at which critical habitat is mapped, it may also include areas that are not suitable for a species and would not be occupied. The project site does not contain any designated critical habitat for any federally listed species.

5.7 WILDLIFE MOVEMENT CORRIDORS

Some of the important areas for habitat connectivity in California were mapped as Essential Connectivity Areas (ECA) for the California Essential Habitat Connectivity Project, which was commissioned by the California Department of Transportation and CDFW with the purpose of making transportation and land-use planning more efficient and less costly, while helping reduce dangerous wildlife-vehicle collisions (Spencer et al. 2010). The ECAs were not developed for the purposes of defining areas subject to specific regulations by CDFW or other agencies. The project site is not included in any modeled ECA, and the project site is not considered to be a natural landscape block. Curtis Creek and the riparian mixed hardwood habitat associated with the creek likely function as wildlife movement corridors for fish, amphibians, birds, and small mammals. However, the project site likely does not facilitate wildlife movement, because it is mostly developed and is surrounded by other development.

5.8 WILDLIFE NURSERY SITES

Nursery sites are locations where fish or wildlife concentrate for hatching and/or raising young, such as nesting rookeries for birds (e.g., herons, egrets), spawning areas for native fish, fawning areas for mule deer (*Odocoileus hemionus*), and maternal roosts for bats. The riparian mixed hardwood habitat in the southern portion of the project site provides roosting habitat potentially suitable for common bat species (e.g., big brown bat [*Eptesicus fuscus*], silver-haired bat [*Lasionycteris noctivagans*]) to use as nursery sites.

5.9 INVASIVE PLANTS

An invasive plant is one that is not native to a region, but rather is introduced, and tends to crowd out native vegetation and thereby adversely affect the wildlife that feeds on it. The ruderal, annual grasses and forbs habitat in the southern portion of the project site was dominated by invasive starthistle and the understory of the riparian mixed hardwood habitat was dominated by invasive Himalayan blackberry. Invasive plant species such yellow starthistle (*Centaurea solstitialis*) and Maltese starthistle (*Centaurea melitensis*) can invade grassland habitat and exclude native grasses and forbs and Himalayan blackberry can invade forest or riparian habitats and exclude native understory species.

6 CONCLUSIONS AND RECOMMENDATIONS

6.1 SPECIAL-STATUS PLANTS

The two special-status species with potential to occur on the project site, Stanislaus monkeyflower and Tuolumne fawn lily, would be limited to the streambanks immediately adjacent to Curtis Creek. No project activities (i.e., vegetation removal, staging, ground disturbance) are proposed to occur within the riparian mixed hardwood habitat adjacent to Curtis Creek or within the creek itself. Thus, direct and indirect impacts on these species, if present, are not expected to occur.

6.2 SPECIAL-STATUS WILDLIFE AND WILDLIFE NURSERY SITES

The five special-status species with potential to occur on the project site would be limited to Curtis Creek (i.e., San Joaquin roach), Curtis Creek and its streambanks (i.e., western pond turtle), or the riparian mixed hardwood habitat adjacent to Curtis Creek (i.e., ringtail, pallid bat, western mastiff bat). The riparian mixed hardwood habitat may also provide roosting habitat for common bat species. No project activities (i.e., vegetation removal, staging, ground disturbance) are proposed to occur within the riparian mixed hardwood habitat adjacent to Curtis Creek or within the creek itself. Thus, direct and indirect impacts on these species, if present, are not expected to occur.

6.3 OTHER NATIVE BIRD SPECIES

Habitat potentially suitable for nesting common native bird species protected by California Fish and Game Code and the federal MBTA is present in the riparian mixed hardwood habitat on the project site. While no project activities (i.e., tree removal, staging, ground disturbance) are proposed to occur within this habitat, project activities, including the use of heavy equipment, could result in visual or auditory disturbance to nesting birds, including raptors, if present. The following measure would ensure that disturbance to nesting birds, if present, would not occur:

- ▶ Prior to project construction activities, including ground disturbance, grading, and staging, the project site will be surveyed for active nesting activity. If nesting birds are present on the project site, project construction activities will be scheduled to avoid the nesting bird season for the detected species, which would occur between approximately February 1 through August 31.

6.4 RIPARIAN HABITAT, SENSITIVE NATURAL COMMUNITIES, AND WETLANDS

The riparian mixed hardwood habitat on the project site is a sensitive habitat and portions of this habitat may meet the membership rules of three sensitive natural communities: box elder forest and woodland, Oregon ash groves, and valley oak woodland and forest. The portion of Curtis Creek on the project site would be considered a water of the United States and a water of the state. No project activities (i.e., vegetation removal, staging, ground disturbance) are proposed to occur within the riparian mixed hardwood habitat adjacent to Curtis Creek or within the creek itself. Thus, direct removal of these resources is not expected to occur. However, indirect impacts on riparian mixed hardwood habitat or Curtis Creek, including inadvertent damage to riparian vegetation during vehicle or equipment operation or staging or inadvertent discharge of or chemicals into Curtis Creek could occur during project construction. The following measure would ensure that indirect impacts on riparian mixed hardwood habitat and Curtis Creek would not occur.

- ▶ Permanent fencing or temporary high-visibility construction fencing should be installed between the riparian mixed hardwood habitat, outside of the dripline of the riparian tree canopy, and the active construction site to prevent entry by vehicles, equipment, or construction personnel.
- ▶ The project applicant should implement construction best management practices (BMPs) when operating in the southern portion of the project site adjacent to the riparian mixed hardwood habitat and Curtis Creek. BMPs will include those required by the project Stormwater Pollution Prevention Plan and the Tuolumne County Biological Resources Review Guide, and may include the following:
 - Install fiber rolls, a sandbag barrier, or a straw bale barrier between the active construction site and the riparian mixed hardwood habitat/Curtis Creek to intercept runoff and remove sediment from runoff.
 - Maintain all diesel- and gasoline-powered equipment per manufacturer's specifications, and in compliance with all state and federal emissions requirements. Prior to the start of project activities, inspect all equipment for leaks and inspect everyday thereafter until equipment is removed from the site. Any equipment found leaking will be promptly removed to prevent inadvertent discharge into Curtis Creek.
 - Equipment storage, working areas, and spoils should be limited to project staging areas.

- Equipment should not be serviced within areas within 100 feet of riparian mixed hardwood habitat and Curtis Creek, or in any locations that would allow grease, oil, or fuel to pass into Curtis Creek.
- Disturbed soils and all other disturbed areas should be stabilized as soon as possible and before the rainy season begins (but no later than October 15th of the construction year) in accordance with the County and Caltrans landscape guidelines and specifications.
- Prior to working in or near any stream, equipment should be thoroughly cleaned to prevent introduction of invasive aquatic species.

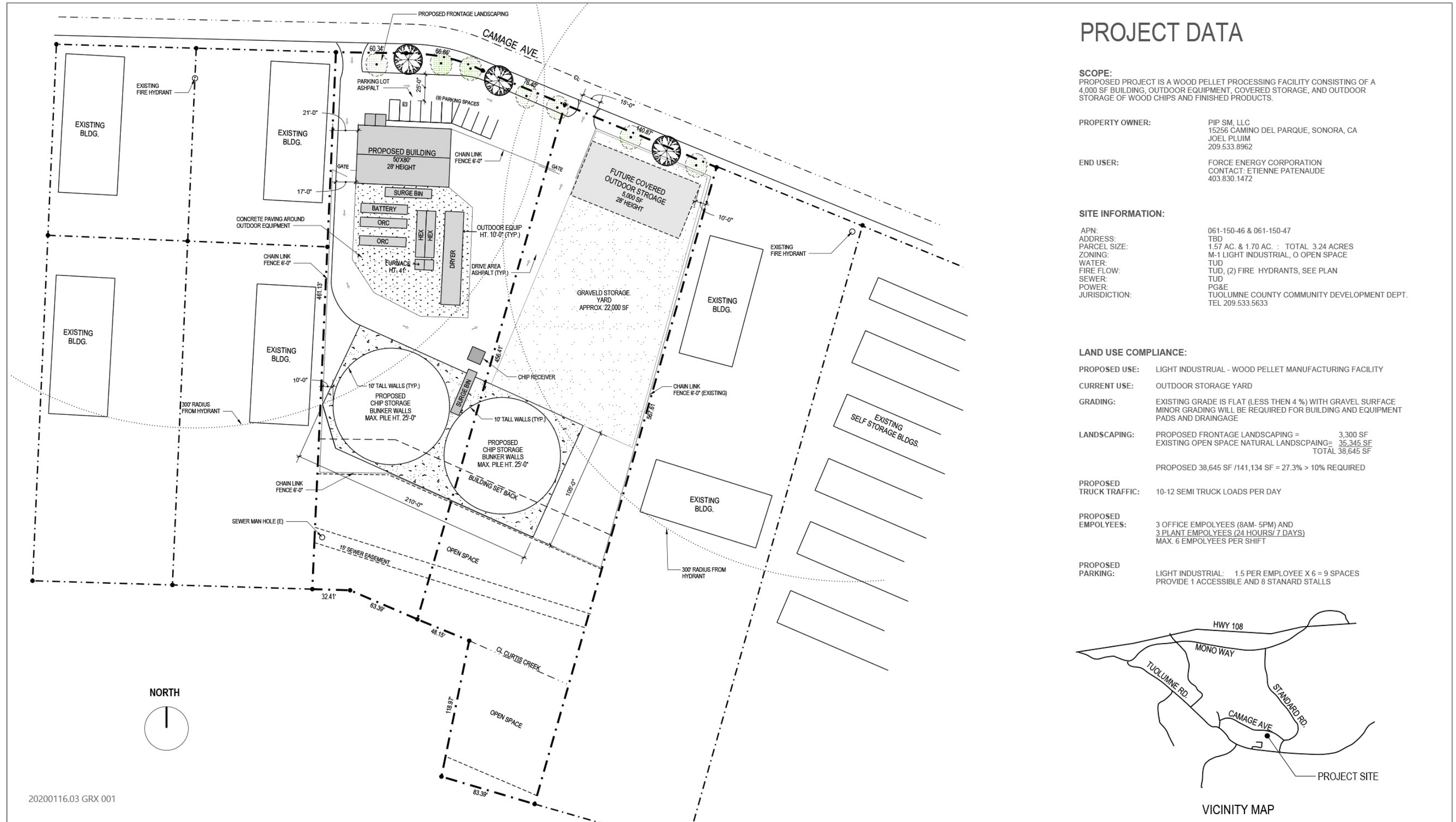
7 REFERENCES

- California Department of Fish and Wildlife. 2018. *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities*. Available: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline>. Accessed June 8, 2021.
- California Native Plant Society. 2021. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Available: <http://www.rareplants.cnps.org>. Accessed May 5, 2021.
- California Natural Diversity Database. 2021. Results of electronic records search. Sacramento: California Department of Fish and Wildlife, Biogeographic Data Branch. Accessed May 5, 2021.
- CNDDDB. See California Natural Diversity Database.
- CNPS. See California Native Plant Society.
- Reese, D. A. and H. H. Welsh. 1997. Use of Terrestrial Habitat by Western Pond Turtles, *Clemmys marmorata*: Implications for Management. *Proceedings: Conservation, Restoration, and Management of Tortoises and Turtles*. An International Conference held by the New York Turtle and Tortoise Society, pp. 352-357.
- Sawyer, J. O., T. Keeler-Wolf, and J. M. Evens. 2009. *A Manual of California Vegetation*. Second edition. California Native Plant Society Press, Sacramento, California, USA.
- Spencer, W.D., P. Beier, K. Penrod, K. Winters, C. Paulman, H. Rustigian-Romsos, J. Strittholt, M. Parisi, and A. Pettler. 2010. *California Essential Habitat Connectivity Project: A Strategy for Conserving a Connected California*. Available: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18366>. Accessed June 8, 2021.
- Tuolumne County. 2011 (November). *Tuolumne County Biological Resources Review Guide*. Available: <https://www.tuolumnecounty.ca.gov/DocumentCenter/View/198/Draft-Biological-Reserve-Review-Guide>. Accessed June 4, 2021.
- Tuolumne County 2018. *Tuolumne County General Plan*. Available: <https://www.tuolumnecounty.ca.gov/889/General-Plan-Update>
- USDA. See U.S. Department of Agriculture.
- U.S. Department of Agriculture. 2021. Web Soil Survey. Available: <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>. Accessed June 2, 2021.
- U.S. Fish and Wildlife Service. 2021a. Information for Planning and Consultation electronic records search. Available: <https://ecos.fws.gov/ipac/>. Accessed May 5, 2020.
- . 2021b. National Wetlands Inventory. Available: <https://www.fws.gov/wetlands/>. Accessed. May 5, 2021.
- USFWS. See U.S. Fish and Wildlife Service.
- Xerces Society for Invertebrate Conservation. 2018. *A Petition to the State of California Fish and Game Commission to List the Crotch Bumble Bee (*Bombus crotchii*), Franklin's Bumble Bee (*Bombus franklini*), Suckley Cuckoo Bumble Bee (*Bombus suckleyi*), and Western Bumble Bee (*Bombus occidentalis occidentalis*) as Endangered*

Under the California Endangered Species Act. Available:
<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=161902&inline>. Accessed June 8, 2021.

Appendix A

Biological Resources Report Site Plan



Site Plan

Appendix B

Biological Resources Report
Photographs



Source: Ascent Environmental in 2021

Photograph 1. Developed Portion of the Project Site. Photograph Taken from Western Edge of Project site Facing East.



Source: Ascent Environmental in 2021

Photograph 2. Remnant Building Materials within the Developed Portion of the Project Site. Photograph Taken from the Eastern Side of the Project Site Facing South.



Source: Ascent Environmental in 2021

Photograph 3. Willows within the Developed Portion of the Project Site. Photograph Taken from the Center of the Project Site Facing West.



Source: Ascent Environmental in 2021

Photograph 4. Pile of Logs within Annual Grasses and Forbs (Ruderal) Habitat on the Project Site. Photograph Taken from Southern Half of the Project Site Facing Southwest.



Source: Ascent Environmental in 2021

Photograph 5. Annual Grasses and Forbs (Ruderal) on the Project Site. Photograph Taken from Southern Half of the Project Site Facing South.



Source: Ascent Environmental in 2021

Photograph 6. Riparian Woodland Habitat in the Southern Portion of the Project Site. Photograph Taken from Northern Edge of Riparian Woodland Facing Southwest.



Source: Ascent Environmental in 2021

Photograph 7. Himalayan Blackberry and Mugwort within the Understory of the Riparian Woodland on the Project Site. Photograph Taken from Northern Edge of Riparian Woodland in the Southern Portion of the Project Site Facing South.