Appendix B:
Biological Resources Assessment

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Biological Resources Assessment
El Dorado Materials Recovery Facility Renovation
El Dorado County, California

Prepared for:

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Report Date: June 1, 2018

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SECTION 1: EXECUTIVE SUMMARY

At the request of the County of El Dorado, FirstCarbon Solutions (FCS) conducted a Biological Resources Assessment (BRA) to document the existing biological conditions and analyze potential impacts to biological resources within the proposed Western El Dorado Materials Recovery Facility (MRF) Renovation project located in El Dorado County, California.

Analysis of the biological resources associated with the project site began with a thorough review of relevant literature followed by reconnaissance-level field surveys and specialized surveys for oaks and potential waters of the U.S. No listed, sensitive, or rare plant or wildlife species were found within the existing site during the field surveys. The proposed project is not expected to fill or otherwise impact jurisdictional areas, including riparian habitat or other wetland communities. Literature review and field surveys concluded that a majority of the species in the plant and wildlife inventory do not have more than a low potential to exist within the existing site because of a lack of suitable biological and physical features needed to adequately support them. The project would remove two individual oak trees as part of project design and would require mitigation to comply with the County's Oak Resource Management Plant (ORMP).

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SECTION 2: INTRODUCTION

At the request of the County of El Dorado, FCS conducted a BRA for the Western El Dorado Recovery Systems (MRF). The purpose of this BRA is to describe on-site vegetation communities, identify potentially jurisdictional waters of the U.S., and to assess the potential for occurrence of special-status plant and wildlife species within the project area. A Jurisdictional Determination (JD) was also conducted to determine the location and extent of any waters of the U.S. or State within the project site potentially subject to the jurisdiction of the U. S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and/or the California Department of Fish and Wildlife (CDFW).

2.1 - Project Site Location

The MRF site is situated within an area of unincorporated El Dorado County south off the Missouri Flat Road/U. S. 50 Interchange, southwest of the City of Placerville, and north of the town of Diamond Springs (Exhibit 1). The MRF is specifically located at 4100 Throwita Way on a 10.18 acre-parcel identified with Assessor's Parcel Number (APN) 051-250-47. The existing MRF currently occupies approximately 8.0 acres of the 10.18-acre parcel (Exhibit 2a). Access to the MRF is provided by Throwita Way via Bradley Road and Truck Street, which connect to Diamond Road (State Route 49 [SR-49]).

Additionally, a temporary site would be utilized for a portion of the MRF's operations during project construction. The temporary site is situated within unincorporated El Dorado County south of El Dorado Hills and the Latrobe/U.S. 50 Interchange (Exhibit 2b). The temporary site is located on approximately 5 acres within the central portion of a 97.39-acre area consisting of APNs 117-020-08 and 117-020-09. Access to the temporary site is provided by Wetsel-Oviatt Road, via Latrobe Road, which connects to U.S. 50.

2.2 - Project Description

Waste Connections currently operates an existing MRF at the project site. The MRF provides waste transfer services for most of El Dorado County west slope residents and businesses, as part of an October 2014 hauling and transfer agreement between Waste Connections and the County. The permitted volume of waste material that may be processed at the existing MRF is 400 tons per day (tpd) of solid waste, 175 tpd of greenwaste, and 125 tpd of construction and demolition (C&D) waste, for a total of 700 tpd. According to 2017 data, the MRF processes an average of approximately 296.80 tpd. Tonnage processed on weekends is substantially less than that processed during the week (4011.12 tpd weekday average versus 30.30 tpd weekend average). In 2015, a peak of 514.92 tons was processed on December 9. The existing MRF is inspected monthly by Placer County Environmental Health (under contract with El Dorado County Public Health, the Local Enforcement Agency), for compliance with state minimum standards for the handling of solid waste.

The MRF currently operates under an El Dorado County Special Use Permit No. S94-0008 and Solid Waste Facility Permit (SWFP) No. 09-AA-0004. As part of the October 2014 hauling and transfer

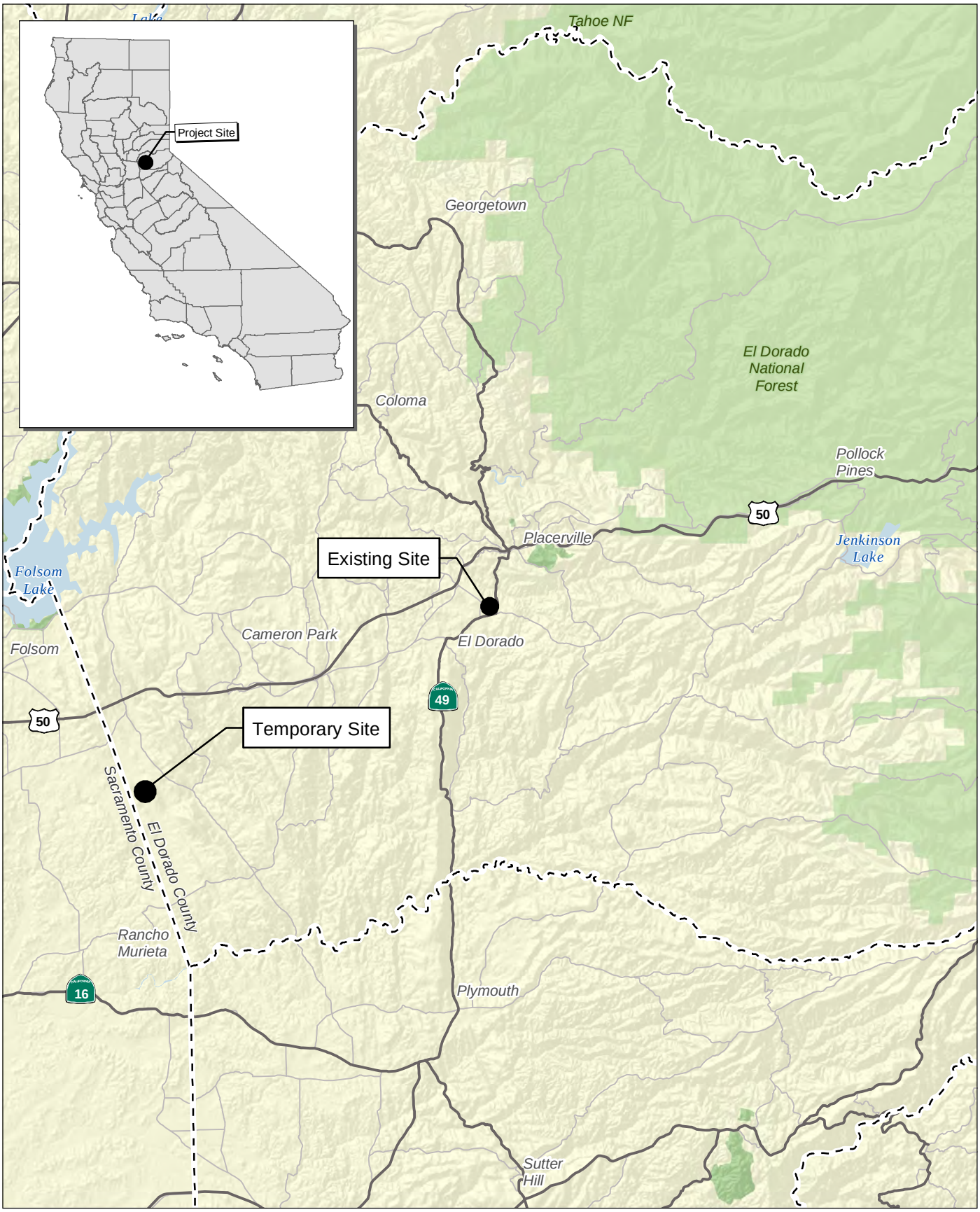
franchise agreement, Waste Connections agreed to complete a renovation of the existing MRF by October 2019. The existing on-site buildings were not designed for the purpose of managing and recycling solid waste, which limits Waste Connection's ability to operate efficiently. The processing of many waste streams, such as yard waste, C&D waste, commingled recyclable materials and source-separated recyclable materials, is conducted outside. This exposes the various wastes to rain and wind, resulting in the potential for debris scatter and contamination of on-site stormwater runoff. To manage stormwater runoff, the site has three detention basins that are closely monitored. To manage wind exposure, MRF staff continuously monitor the site for windblown debris. Moving waste processing activities inside or under cover would reduce or eliminate exposure to rain and wind, along with their related management issues.

In addition, the current site configuration does not provide for efficient vehicle circulation. The scale/gatehouse at the main entrance is located close to the public right-of-way on Throwita Way. This proximity has previously resulted in vehicle queues exceeding available storage space, although significant queue exceedances have not occurred since June of 2006, when Waste Connections acquired the MRF.

Waste Connections has prepared a new site master plan to enhance operational conditions and offer improved services. The new site master plan would incorporate a more efficient traffic circulation pattern that would reduce customer on-site time and would minimize the amount of materials requiring double handling. Unlike the current MRF, all materials received would be unloaded and processed within buildings or under covered areas. The new site plan proposes 108,927 square feet of building and covered areas, compared with the current 70,079 square feet of building and covered areas. More importantly, the structures would be designed to appropriately handle the different waste streams and recycling materials.

Combined, these conditions have prompted Waste Connections to redesign and redevelop the site in order to provide waste management and recycling services in the most efficient manner, while enhancing the overall environmental, health, and safety conditions

The proposed project plans to develop a new transfer station, recycle processing canopy, gatehouse, entrance and scale system, appliance drop-off area, maintenance center, baler and shipping, and an office and education center.



Source: Census 2000 Data, The CaSIL

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Exhibit 1
Regional Location Map

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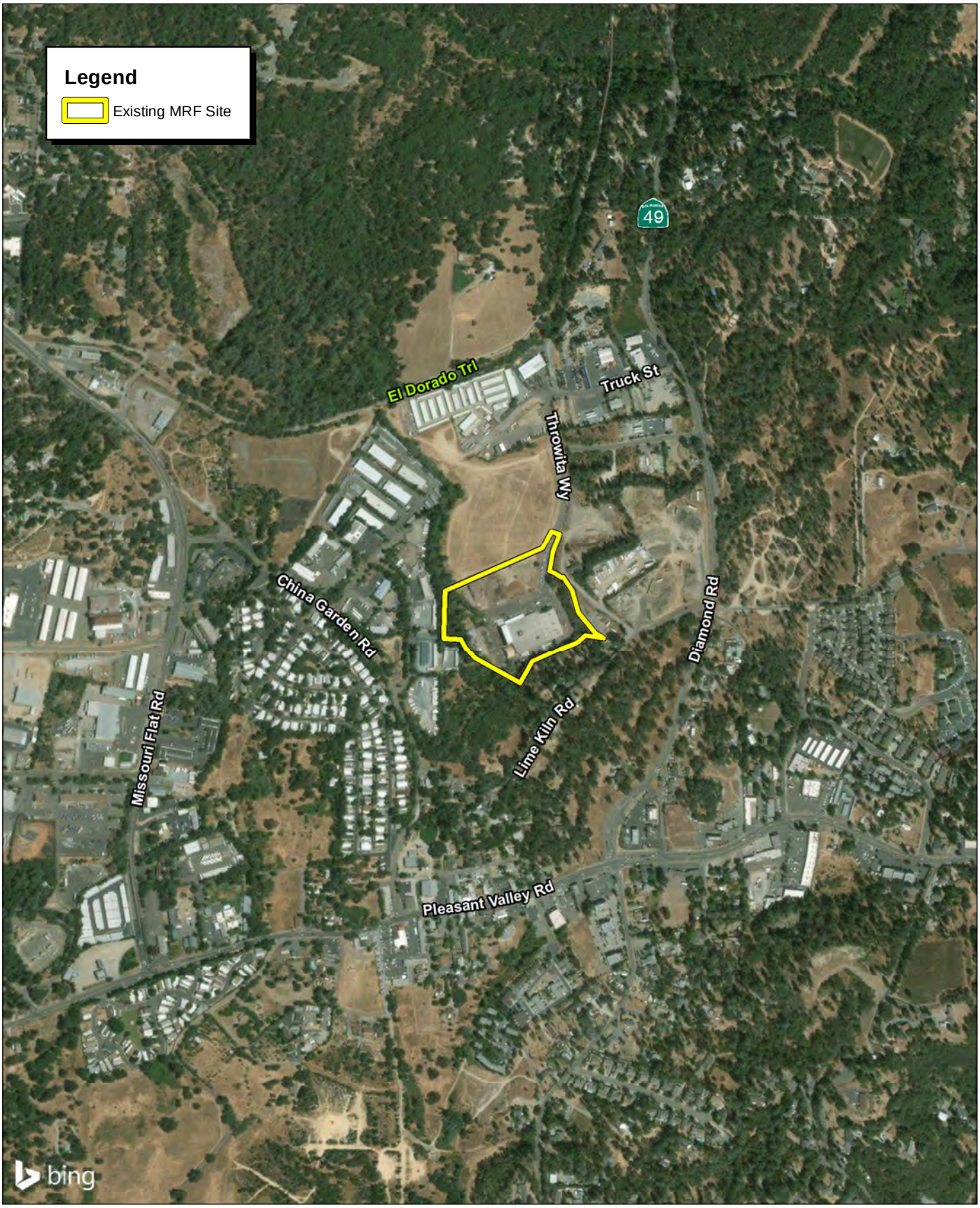

Source: Bing Aerial Imagery.

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860 430 0 860
Feet

Exhibit 2a
Local Vicinity Map
Existing MRF Site

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Source: Bing Aerial Imagery.

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860 430 0 860 Feet

Exhibit 2b
Local Vicinity Map
Temporary Site

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SECTION 3: REGULATORY FRAMEWORK

This section provides an overview of the laws and regulations that influence biological resources. Many of these regulations will not apply to the project if sensitive biological resources are avoided.

3.1 - Federal Endangered Species Act

The United States Fish and Wildlife Service (USFWS) has jurisdiction over species listed as threatened or endangered under the Federal Endangered Species Act (FESA). Section 9 of FESA protects listed species from "take," which is broadly defined as actions taken to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." FESA protects threatened and endangered plants and animals and their critical habitat. Procedures for addressing impacts to federally listed species follow two principal pathways, both of which require consultation with the USFWS, which administers the FESA for all terrestrial species. The first pathway, Section 10(a) incidental take permit, applies to situations where a non-federal government entity must resolve potential adverse impacts to species protected under the FESA. The second pathway, Section 7 consultation, applies to projects directly undertaken by a federal agency or private projects requiring a federal permit or approval.

3.2 - Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties between the U.S. and other nations devised to protect migratory birds, their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. The State of California has incorporated the protection of birds of prey in Sections 3800, 3513, and 3503.5 of the Fish and Game Code (FGC).

All raptors and their nests are protected from take or disturbance under the MBTA (16 United States Code [USC], Section 703, et seq.) and California statute (FGC Section 3503.5). The golden eagle (*Aquila chrysaetos*) and bald eagle (*Haliaeetus leucocephalus*) are also afforded additional protection under the Eagle Protection Act, amended in 1973 (16USC, Section 669, et seq.).

3.3 - Bald and Golden Eagle Protection Act

With few exceptions, this act (16 USC 668–668d) prohibits take of Bald Eagles and Golden Eagles. Unlike the MBTA, which defines "take" to mean only direct killing or taking of birds or their body parts, eggs, and nests, the Bald and Golden Eagle Protection Act defines take in a manner similar to FESA as including "pursuing, shooting, shooting at, poisoning, wounding, killing, capturing, trapping, collecting, molesting, and disturbing," with "disturb" further defined (50 CFR 22.3) as ''to agitate or bother a Bald or Golden Eagle to a degree that causes, or is likely to cause, based on the best scientific information available; (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.''

Therefore, the requirements for guarding against impacts to eagles generally are far more stringent than those required by the MBTA alone.

3.4 - Executive Order 13112—Invasive Species

Executive Order (EO) 13112 directs all federal agencies to refrain from authorizing, funding, or carrying out actions or projects that may spread invasive species. The order further directs federal agencies to prevent the introduction of invasive species, control and monitor existing invasive species populations, restore native species to invaded ecosystems, research and develop prevention and control methods for invasive species, and promote public education on invasive species. As part of the proposed action, the USFWS and USACE would issue permits and therefore would be responsible for ensuring that the proposed action complies with EO 13112 and does not contribute to the spread of invasive species.

3.5 - Clean Water Act Section 404

The USACE and the United States Environmental Protection Agency (EPA) regulate the discharge of dredged or fill material into waters of the U.S., including wetlands, under Section 404 of the Clean Water Act (CWA). Waters of the U.S. include wetlands, lakes, and rivers, streams, and their tributaries. Wetlands that fall under the jurisdiction of the USACE (referred to as jurisdictional wetlands) are defined as areas "inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Areas not considered jurisdictional waters include, for example, non-tidal drainage and irrigation ditches excavated on dry land; artificially irrigated or created bodies such as small ponds, lakes or swimming pools; and water-filled depressions (33 CFR 328.3; 40 CFR 230.3).

Project proponents must obtain a permit from USACE for all discharges of fill material into waters of the U.S., including jurisdictional wetlands, before proceeding with a proposed action. If wetlands are jurisdictional and could be filled as part of the project, USACE may issue either an individual permit or a general permit. Individual permits are prepared on a project-specific basis for projects that are expected to have adverse effects on the aquatic environment. General permits are pre-authorized permits issued to cover similar activities that are expected to cause only minimal individual and cumulative adverse environmental effects.

3.6 - Clean Water Act Section 401

The CWA requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the U.S. to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards. The appropriate Regional Water Quality Control Board (RWQCB) regulates Section 401 requirements.

3.7 - California Fish and Game Code

Under the California Endangered Species Act (CESA), the California Department of Fish and Wildlife (CDFW) has the responsibility for maintaining a list of endangered and threatened species (FGC 2070). Sections 2050 through 2098 of the FGC outline the protection provided to California's rare, endangered, and threatened species. Section 2080 of the FGC prohibits the taking of plants and animals listed under the CESA. Section 2081 established an incidental take permit program for state-listed species. CDFW maintains a list of "candidate species," which it formally notices as being under review for addition to the list of endangered or threatened species.

In addition, the Native Plant Protection Act of 1977 (FGC Section 1900, et seq.) prohibits the taking, possessing, or sale within the State of any plants with a state designation of rare, threatened, or endangered (as defined by CDFW). An exception to this prohibition in the Native Plant Protection Act allows landowners, under specified circumstances, to take listed plant species, provided that the owners first notify CDFW and give that state agency at least 10 days to come and retrieve (and presumably replant) the plants before they are plowed under or otherwise destroyed. (FGC Section 1913 exempts from "take" prohibition "the removal of endangered or rare native plants from a canal, lateral ditch, building site, or road, or other right of way.") Project impacts to these species are not considered significant unless the species are known to have a high potential to occur within the area of disturbance associated with construction of the proposed project.

CDFW also maintains lists of "Species of Special Concern" that serve as species "watch lists." The CDFW has identified many Species of Special Concern. Species with this status have limited distribution or the extent of their habitats has been reduced substantially, such that their populations may be threatened. Thus, their populations are monitored, and they may receive special attention during environmental review. While they do not have statutory protection, they may be considered rare under CEQA and thereby warrant specific protection measures.

Sensitive species that would qualify for listing but are not currently listed are afforded protection under CEQA. CEQA Guidelines Section 15065 (Mandatory Findings of Significance) requires that a substantial reduction in numbers of a rare or endangered species be considered a significant effect. CEQA Guidelines Section 15380 (Rare or Endangered Species) provides for assessment of unlisted species as rare or endangered under CEQA if the species can be shown to meet the criteria for listing. Unlisted plant species on the CNPS's Lists 1A, 1B, and 2 would typically be considered under CEQA.

Sections 3500 to 5500 of the FGC outline protection for fully protected species of mammals, birds, reptiles, amphibians, and fish. Species that are fully protected by these sections may not be taken or possessed at any time. The CDFW cannot issue permits or licenses that authorize the take of any fully protected species, except under certain circumstances such as scientific research and live capture and relocation of such species pursuant to a permit for the protection of livestock.

Under Section 3503.5 of the FGC, it is unlawful to take, possess, or destroy any birds in the orders of Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto. To

comply with the requirements of CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the project study area and determine whether the proposed project will have a potentially significant impact on such species. In addition, CDFW encourages informal consultation on any proposed project that may impact a candidate species.

Project-related impacts to species on the CESA endangered or threatened list would be considered significant. State-listed species are fully protected under the mandates of the CESA. "Take" of protected species incidental to otherwise lawful management activities may be authorized under FGC Section 206.591. Authorization from CDFW would be in the form of an Incidental Take Permit.

Section 1602 of the FGC requires any entity to notify CDFW before beginning any activity that "may 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 debris, waste, or other materials that could pass into any river, stream, or lake." "River, stream, or lake" includes waters that are episodic and perennial; and ephemeral streams, desert washes, and watercourses with a subsurface flow. A Lake or Streambed Alteration Agreement will be required if CDFW determines that project activities may substantially adversely affect fish or wildlife resources through alterations to a covered body of water.

3.8 - California Porter-Cologne Water Quality Control Act

The RWQCB has regulatory authority over wetlands and waterways under both the CWA and the State of California's Porter-Cologne Water Quality Control Act (California Water Code, Division 7). Under the CWA, the RWQCB has regulatory authority over actions in waters of the U.S., through the issuance of water quality certifications under Section 401 of the CWA in conjunction with permits issued by the USACE under Section 404 of the CWA. When the RWQCB issues Section 401 certifications, it simultaneously issues general Waste Discharge Requirements for the project under the Porter-Cologne Water Quality Control Act. Activities in areas that are outside of the jurisdiction of the USACE (e.g., isolated wetlands, vernal pools, seasonal streams, intermittent streams, channels that lack a nexus to navigable waters, or stream banks above the ordinary high water mark) are regulated by the RWQCB under the authority of the Porter-Cologne Water Quality Control Act. Activities that lie outside of USACE jurisdiction may require the issuance of either individual or general waste discharge requirements.

3.9 - Local Ordinances

The ORMP updates and revises the Oak Woodland Management Plan adopted by the El Dorado County Board of Supervisors on May 6, 2008 (El Dorado County 2008). It incorporates more recent oak resources mapping data for the County and reflects policy language changes made during the General Plan Biological Policy Review project conducted in 2015. The ORMP incorporates relevant information included in the 2008 Plan, where applicable, and was prepared in coordination with El Dorado County Community Development Agency staff. It also incorporates public input gathered during project-focused hearings and direction given by the El Dorado County Board of Supervisors.

The ORMP goals are guided by two General Plan Objectives: Objective 7.4.2 and Objective 7.4.4. Each is listed below.

General Plan Objective 7.4.2 states: "Identify and Protect Resources: Identification and protection, where feasible, of critical fish and wildlife habitat including deer winter, summer, and fawning ranges; deer migration routes; stream and river riparian habitat; lake shore habitat; fish spawning areas; wetlands; wildlife corridors; and diverse wildlife habitat."

General Plan Objective 7.4.4 states: "Forest, Oak Woodland, and Tree Resources: Protect and conserve forest, oak woodland, and tree resources for their wildlife habitat, recreation, water production, domestic livestock grazing, production of a sustainable flow of wood products, and aesthetic values."

3.9.1 - El Dorado County Oak Resources Regulations

The following guidelines are described within the Updated Guidelines for El Dorado County General Plan Policy 7.4.4.4 (El Dorado County 2017) and ordinance 5061 (Oak Resources Conservation Ordinance), which establishes the standards for implementing the County's ORMP:

- For all new developments projects or actions that result in impacts to oak woodlands and/or individual native oak trees, including Heritage Trees, the County shall require mitigation as outlined in the El Dorado County ORMP. The ORMP functions as the oak resources component of the County's biological resources mitigation program.
- The ORMP identifies standards for oak woodland and native oak tree impact determination, mechanisms to mitigate oak woodland and native oak tree impacts, technical report submittal requirements, minimum qualifications for technical report preparation, mitigation monitoring and reporting requirements, and projects or actions that are exempt from this policy. The ORMP also establishes an in-lieu fee payment option for impacts to oak woodlands and native oak trees, identifies Priority Conservation Areas (PCAs) where oak woodland conservation efforts may be focused, and outlines minimum standards for identification of oak woodland conservation areas outside the PCAs. Requirements for monitoring and maintenance of conserved oak woodland areas and identification of allowable uses within conserved oak woodland areas are also included in the ORMP.

Section 130.39.030—Definitions

- The following Project applicable definitions are defined below in accordance with the ORMP:
  - **Oak Resources**: Collectively, Oak Woodlands, Individual Native Oak Trees, and Heritage Trees.
  - **Heritage Trees**: Any live native oak tree of the genus *Quercus* (including blue oak [*Quercus douglasii*], valley oak [*Quercus lobata*], California black oak [*Quercus kelloggii*], interior live oak [*Quercus wislizeni*], canyon live oak [*Quercus chrysolepis*], Oregon oak [*Quercus garryana*], oracle oak [*Quercus x morehus*], or hybrids thereof) with a single main trunk measuring 36 inches diameter breast height (dbh) or greater, or with a multiple trunk with an aggregate trunk diameter measuring 36 inches or greater.

- **Individual Native Oak Tree**: Any live native oak tree of the genus Quercus (including blue oak, valley oak, California black oak, interior live oak, canyon live oak, Oregon oak, oracle oak, or hybrids thereof with a single main trunk measuring greater than 6 but less than 36 inches dbh, or with a multiple trunk with an aggregate trunk diameter measuring greater than 10 but less than 3ssix dbh.
- **Oak Woodlands:** An oak stand with a greater than 10 percent canopy cover or that may have historically supported greater than 10 percent canopy cover.
- **Oak Woodland Removal Permits**: An oak woodland removal permit shall be required for discretionary or ministerial (e.g., building permits) projects to authorize removal of any trees that are a component of an oak woodland. An oak resources technical report shall accompany any oak woodland removal permit application submitted to the County. The County may impose such reasonable conditions of approval as are necessary to protect the health of existing oak woodlands, the public, and the surrounding property. Oak woodland removal permit review will be integrated into the environmental review process for discretionary projects or may be processed as an administrative permit for ministerial projects. In addition to findings of consistency with the requirements and standards of this ORMP, the County shall make the following findings before approving an oak woodland removal permit application:
  - The proposed action is consistent with the General Plan; and the proposed action is specifically allowed by this ORMP and implementing ordinance (No.5061).

3.9.2 - Oak Woodland Mitigation Requirement as Specified by the ORMP (Ordinance 5061)

A. **Mitigation Options—**Mitigation for the impacted oak woodlands can be choose from one or more of the following options:
   1. Off-site deed restriction or conservation easement acquisition and/or acquisition in fee title by a land conservation organization for purposes of off-site oak woodland conservation;
   2. In-lieu fee payment to be either used by the County to acquire off-site deed restrictions and/or conservation easements or to be given by the County to a land conservation organization to acquire off-site deed restrictions and/or conservation easements;
   3. Replacement planting on-site within an area subject to a deed restriction or conservation easement;
   4. Replacement planting off-site within an area subject to a conservation easement; or
   5. A combination of numbers 1 through 4 above.

B. **Individual Native Oak Tree Removal—**If Individual Native Oak Trees, including Heritage Trees, regardless of location within or outside of an oak woodland, will be impacted as part of the permit, the applicant shall mitigate for loss of individual tree(s) by In-lieu Fee payment to the Oak Woodland Conservation Fund. In Lieu Fee payment for individual oak tree removal shall be as shown in Table 1, pursuant to the ORMP.

Table 1: Individual Oak Tree In-Lieu Fee

Activity	Cost per Inch
Acquisition	$31.90
Initial Management and Monitoring	$113.40
Administration	$7.27
Total Cost per Inch (non-Heritage Trees)	**$153**

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SECTION 4: METHODOLOGY

Analysis of the biological resources associated with the project site began with a thorough review of relevant literature followed by a reconnaissance-level field survey. The survey area included the entire project site as well as the survey buffer area that extended 100 feet from the project site boundary to accommodate any changes to project limits and project design that may occur during project development.

The primary objective of the survey was to document existing site conditions and determine the potential presence of special-status biological resources.

For the purpose of this report, special-status species refers to all species formally listed as threatened and/or endangered under FESA or CESA; California Species of Special Concern; designated as Fully Protected by CDFW; given a status of 1A, 1B, or 2 by California Native Plant Society (CNPS); or designated as special-status by city, county, or other regional planning documents. Federal and State listed threatened and/or endangered species are legally protected under FESA/CESA. The designated special-status species listed by CNPS have no direct legal protection, but require an analysis of the significance of potential impacts under CEQA guidelines.

4.1 - Literature Review

The literature review provides a baseline from which to evaluate the biological resources potentially occurring on the project site as well as the surrounding area.

4.1.1 - Existing Environmental Documentation

As part of the literature review, an FCS biologist examined existing environmental documentation for the project site and local vicinity. This documentation included biological studies for the area; literature pertaining to habitat requirements of special-status species potentially occurring in the vicinity of the site; and federal register listings, protocols, and species data provided by the USFWS and CDFW. These and other documents are listed in the references section of this report.

4.1.2 - Topographic Maps and Aerial Photographs

An FCS biologist reviewed current USGS 7.5-minute topographic quadrangle map(s) and aerial photographs as a preliminary analysis of the existing conditions within the project site and immediate vicinity. Information obtained from the review of the topographic maps included elevation range, general watershed information, and potential drainage feature locations (USGS 1986). Aerial photographs provide a perspective of the most current site conditions relative to on-site and off-site land use, plant community locations, and potential locations of wildlife movement corridors.

4.1.3 - Soil Surveys

The United States Department of Agriculture (USDA) has published soil surveys that describe the soil series (a group of soils with similar profiles) occurring within a particular area (USDA 1980). These

profiles include major horizons with similar thickness, arrangement, and other important characteristics. These series are further subdivided into soil mapping units that provide specific information regarding soil characteristics. Many special-status plant species have a limited distribution based exclusively on soil type. Therefore, pertinent USDA soil survey maps were reviewed to determine the existing soil mapping units within the project site and to establish if soil conditions on-site are suitable for any special-status plant species (Soil Survey Staff 2016).

4.1.4 - Special-Status Species Database Search

An FCS biologist compiled a list of threatened, endangered, and otherwise special-status species previously recorded within the general project vicinity. The list was based on a search of the CDFW's California Natural Diversity Database (CNDDB; CDFW 2018), a special-status species and plant community account database, and the CNPS's Electronic Inventory (CNPSEI) of Rare and Endangered Vascular Plants of California database (CNPS 2018a and 2018b) for the Placerville and Folsom Southeast California USGS 7.5-minute topographic quadrangle maps. The database searches results can be found in Appendix A.

The CNDDB Biogeographic Information and Observation System (BIOS 5; CDFW 2005) database was used to determine the distance between known recorded occurrences of special-status species and the project site.

4.1.5 - Jurisdictional Waters and Wetlands

Prior to conducting the reconnaissance-level survey and jurisdictional delineation, FCS's biologists reviewed USGS topographic maps and aerial photography to identify any potential natural drainage features and water bodies. In general, all surface drainage features identified as blue-line streams on USGS maps and linear patches of vegetation are expected to exhibit evidence of flows and considered potentially subject to state and federal regulatory authority as "waters of the U.S. and/or State." The National Wetland Inventory was also reviewed to determine whether any wetland areas had been documented within the vicinity of the site. The United States Department of Agriculture (USDA) Soil Survey Map was reviewed to identify the soil series that occur on the site.

4.2 - Field Surveys and Delineation

FCS's biologists conducted biological surveys on the existing site on January 12 and 13, 2016 and the temporary site on February 22, 2018. The reconnaissance-level survey was conducted on foot during daylight hours. The purpose of the survey was not to extensively search for every species occurring within the project site, but to ascertain general site conditions and identify potentially suitable habitat areas for various special-status plant and wildlife species. Special-status or unusual biological resources identified during the literature review were ground-truthed during the reconnaissance-level survey for mapping accuracy. Special attention was paid to sensitive habitats and areas potentially supporting special-status floral and faunal species.

4.2.1 - Wetland and Waters Delineation Methodology

The USACE developed field methods for identifying the location and extent of jurisdictional wetlands (a subset of Waters of the U.S.) using the USACE Wetland Delineation Manual (Environmental Laboratory 1987). The USACE issued the Arid West Regional Supplements to the Wetland Delineation Manual (USACE 2008).

According to the USACE wetland delineation methodology, a wetland must exhibit the following: (1) a prevalence or dominance of hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. These characteristics are defined and described in further detail below. Appendix A contains field data forms documenting the three-parameter test.

For non-wetland, "other water" features, the extent of the USACE jurisdiction is defined by the OWHM. Delineation of other waters was based on observing indicators for the OHWM (33 CFR 328.3), following established USACE criteria and considering hydrological connectivity or isolation. In general, the OHWM for a stream is usually determined through an examination of the recent physical evidence of surface flow. Common physical characteristics that indicate the presence of an OHWM include, but are not limited to, a clear natural line impressed on the bank, evidence of scour, recent bank erosion, destruction of native terrestrial vegetation, sediment deposition, and the presence of litter and debris.

The limits of other water features were mapped in the field using a Trimble GeoXT® sub-meter accurate global positioning system (GPS) and aerial photography. The limits of natural (e.g., not a concrete-lined or an excavated canal or ditch) features were recorded with the Trimble GeoXT® GPS by walking the boundary while collecting data points. These data were exported into ArcMap 10® and corrected, then used to produce the map of waters of the U.S. and to calculate the area and linear feet of other waters.

4.2.2 - CDFW Jurisdictional Streambeds and Waters of the State Delineation Methodology

This section provides the methods for collecting data for state streambeds and waters under the FGC and Porter-Cologne Act, respectively.

CDFW Jurisdictional Streambeds

According to the CDFW, streams are generally defined by the presence of bed and bank or channelized topography, shorelines, and similar features. In addition, CDFW has discretion to assert jurisdiction over ecological systems (i.e., riparian communities) associated with streams and water bodies, as well as isolated water bodies that are outside of the USACE jurisdiction. Delineation of the limits of CDFW jurisdiction was accomplished through both on-site and remote analysis. State jurisdiction was delineated by measuring outer width and length boundaries of state jurisdiction ("lakes or streambeds"), consisting of the greater of either the "top of bank" measurement ("bankfull" width) or the extent of associated riparian or wetland vegetation. Additionally, remote or off-site analysis included a review of aerial photography, analysis of available topographic maps, and calculation of preliminary jurisdictional area using ArcView® GIS software.

RWQCB Jurisdictional Waters of the State

Evaluation of the waters of the State followed the same methods for collection of data as described above under the USACE Delineation Methodology. Isolated features were not identified within the project study area, and, therefore, all features mapped as potentially jurisdictional to the USACE are also mapped as potentially jurisdictional to the RWQCB.

4.2.3 - Oak Resources Technical Report

Certified Arborist Gordon Mann surveyed the project site for impacts to oak woodlands on April 4 and 18, 2018. This oak resources technical report summarizes the methods and results of Mr. Mann's field survey. The report also summarizes the existing oak resources and conditions within the project site and project vicinity and provides an analysis of the potential impacts on those resources from project implementation. The report also identifies and analyzes the potential significance of site construction and development in view of local regulations. Finally, it recommends, as appropriate, tree protection measures (best management practices, avoidance and protection measures, and mitigation measures) to avoid, eliminate, and reduce impacts on oak resources that may be significantly impacted; and it provides an identification of plans and tree permits that the project may need. The report can be found in its entirety in Appendix A.

4.2.4 - Plant Species

Common plant species observed during the reconnaissance-level survey were identified by visual characteristics and morphology in the field and recorded in a field notebook. Uncommon and less familiar plants were identified off-site with the use of taxonomical guides, such as Clarke et al. (2007), Hitchcock (1971), McAuley (1996), and Munz (1974). Taxonomic nomenclature used in this study follows Baldwin et al. (2012). Common plant names, when not available from Baldwin et al. (2012), were taken from other regionally specific references. All plant species observed on-site include non-native invasive weeds and grasses.

4.2.5 - Wildlife Species

Wildlife species detected during the reconnaissance-level survey by sight, calls, tracks, scat, or other signs were recorded in a field notebook. Notations were made regarding suitable habitat for those special-status species determined to potentially occur within the project site (CDFW 2016). Appropriate field guides were used to assist with species identification during surveys, such as Peterson (2010), Reid (2006), and Stebbins (2003).

4.2.6 - Wildlife Movement Corridors

Wildlife movement corridors link areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. Urbanization and the resulting fragmentation of open space areas create isolated "islands" of wildlife habitat, forming separated populations. Corridors act as an effective link between populations.

The project site was evaluated for evidence of a wildlife movement corridor during the reconnaissance-level survey. However, the scope of the biological resources study did not include a formal wildlife

movement corridor study utilizing track plates, camera stations, scent stations, or snares. Therefore, the focus of this study was to determine if the change of current land use of the project site may have significant impacts on the regional movement of wildlife. These conclusions are made based on the information compiled during the literature review, including aerial photographs, USGS topographic maps and resource maps for the vicinity, the field survey conducted, and professional knowledge of desired topography and resource requirements for wildlife potentially utilizing the project site and vicinity.

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SECTION 5: EXISTING CONDITIONS

FCS's biologists conducted biological surveys on the existing site on January 12 and 13, 2016. FCS biologists also conducted a field survey of the temporary site on February 22, 2018. The following sections provide information regarding existing conditions of the existing site and temporary site.

5.1 - Environmental Setting

5.1.1 - Existing Site

The existing MRF currently occupies approximately 8.0 acres of its 10.18-acre parcel. Chain-link fencing encloses MRF operations, including the on-site stormwater ponds located in the northeastern, northwestern, and southwestern corners of the project site. Areas outside the chain-link fencing consist primarily of thick vegetation on slopes. These areas are located along the site's eastern, southern, and western boundaries. The project site is zoned Industrial on the El Dorado County zoning map and designated as Industrial by the El Dorado County General Plan. Topography of the MRF is relatively level with approximate elevations of 1,830 to 1,857 feet above mean sea level.

Three land cover types were determined to be present within the existing site as determined by the literature review and field surveys (Exhibit 3):

- Developed lands
- Ruderal/disturbed habitat
- Woodlands (oak woodlands, riparian woodlands, and foothill pine woodlands)

5.1.2 - Temporary Site

The temporary site is located within an industrial parcel within a rural area of western El Dorado County. The temporary site would be located on a portion of land that consists of previously disturbed ground that shows evidence of past fill and leveling efforts. There are no trees located within the temporary site, and vegetation consists of mostly overgrown ruderal weedy species. Because of the current condition of the temporary site, there is low potential for the presence of special-status plant and/or wildlife species and no potential for jurisdictional features. The temporary site consists primarily of ruderal/disturbed habitat.

5.1.3 - Soils

Existing Site

The MRF project site consists mainly of diggings with less than 10 percent of the site consisting of fine, sandy loam. Because of this, the site does not offer suitable habitat for many types of vegetative communities and is made up mainly of develop lands and disturbed habitat.

Temporary Site

The temporary site contains whiterock gravely silt loam, which consists of very shallow well drained soils found in foothill areas. Additionally, the temporary site shows evidence of engineered fill from past construction efforts, which precludes suitable habitat for sensitive or rare plant communities.

5.2 - Vegetation Communities

The Western El Dorado Recovery Systems (MRF) is located in a rural part of the County with a mixture of development and open space surrounding the site. Vegetation communities found on both sites are explained in detail below.

5.2.1 - Developed Lands

Developed lands are non-vegetated features that describe areas occupied by man-made structures, paving, and other impermeable surfaces that cannot support vegetation. On-site developed lands consist of MRF buildings, paved streets, paved access roads, parking lots, driveways, sidewalks, and other permanent structures. Landscaping associated with the developed lands is also included within this category. The developed areas provide virtually no habitat for wildlife species. Developed lands are not considered a sensitive plant community.

5.2.2 - Ruderal/Disturbed Habitats

Ruderal/disturbed habitats contain areas that are heavily to sparsely vegetated by non-native ruderal (weedy) species or lack vegetation completely and provide little to no habitat value for wildlife. Ruderal habitats are persistent in California where habitat has been affected by human activities, resulting in a dominance of weedy annual, non-native species. The temporary site consists primarily of ruderal/disturbed habitat.

5.2.3 - Woodlands

Trees and mixed oak woodland are located within the existing site's parcel, but outside the MRF's active use area. Woodland canopy coverage is continuous from the northeastern corner continuing south and then west into a wooded drainage that continues north to Weber Creek approximately 0.73 mile from the project boundary. The oak woodlands consist of valley oak (*Quercus lobata*), blue oak (*Quercus douglasii*), California black oak (*Quercus kelloggii*), interior live oak (*Quercus wislizeni*); and foothill pine (*Pinus sabiniana*). Fremont's cottonwood (*Populus fremontii* ssp. *fremontii*); cottonwood, and various willows (*Salix* spp.) are also present within the vicinity of the existing site's parcel. The total area of oak woodlands is approximately 1.3 acres, resulting in 13 percent of the entire existing project site. There are no trees located within the temporary site.

Source: ESRI World Aerial Imagery.

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Exhibit 3
Vegetation Communities

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5.3 - Wildlife

5.3.1 - Existing Site

No listed, sensitive, or rare plant or wildlife species were found within the existing site during the field surveys. In addition, the literature review and field surveys concluded that a majority of the species in the plant and wildlife inventory do not have more than a low potential to exist within the existing site because of a lack of suitable biological and physical features needed to adequately support them; however, habitat conditions within the woodland habitats within and immediately adjacent to the project site create a moderate to high potential for sensitive wildlife species such as red-tailed hawk to occur for roosting, foraging, shelter, and/or breeding.

5.3.2 - Temporary Site

No listed, sensitive, or rare plant or wildlife species were found within the temporary site during the field survey. As noted above, the temporary site lacks suitable habitat features needed to support special-status plant and/or wildlife species.

5.4 - Trees

5.4.1 - Existing Site

The existing site is approximately 10.18 acres and contains areas of oak woodland and individual oak trees outside the active use area. The total area of oak woodlands is approximately 1.3 acres, resulting in 13 percent of the entire existing project site.

5.4.2 - Temporary Site

The temporary site would be located on a portion of land that consists of previously disturbed ground that shows evidence of past fill and leveling efforts. There are no trees located within the temporary site and vegetation consists of mostly overgrown ruderal weedy species.

5.5 - Jurisdictional Waters and Wetlands

5.5.1 - Existing Site

Jurisdictional areas are located adjacent to the existing site.

5.5.2 - Temporary Site

The temporary project site lacks depression features and shows evidence of having been previously filled. The temporary site is located in an area that has been previously cleared and disturbed; furthermore, the site lacks hydrology and hydrophytic vegetation. Lastly, there are no streams or riparian features within the temporary site.

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SECTION 6: SENSITIVE BIOLOGICAL RESOURCES

The following section discusses the existing site conditions and potential for special-status biological resources to occur within the project site.

6.1 - Special-Status Plant Communities

Special-status plant communities are considered sensitive biological resources based on federal, state, or local laws regulating their development, limited distributions, and habitat requirements of special-status plant or wildlife species that occur within them.

6.1.1 - Existing and Temporary Site

Based on the information outlined above, there are no special-status plant communities within either the existing or temporary site. Neither site contains soils that would support rare plant communities such as alkaline and serpentine soils, or rock outcroppings.

6.2 - Special-Status Plant Species

6.2.1 - Existing & Temporary Site

The Special-Status Plant Species Table (Appendix B) identifies seven special-status plant species and CNPS sensitive species that have been recorded to occur within the Placerville and Folsom Southeast, California topographic quadrangles (USGS 1986), as recorded by the CNDDB and CNPSEI (CDFW 2018; CRPR 2018). Two quadrangles were included to cover both the existing site and temporary site where development would occur. The table also includes the species' status, required habitat, and potential to occur within the project site. All special-status plant species that have been determined unlikely to occur on-site, primarily based on the absence of suitable habitat have also been included in the table, in order to justify their exclusion from further discussion.

The existing site appears to be within the Rare Plant Mitigation Area 2 according to the County Parcel Data Information (County of El Dorado 2018b). The rare plant species that are included within the Rare Plant Mitigation Area (Gabbrodiorite endemics) are highly specialized on these derived soils and the MRF site does not support habitat for these species.

6.3 - Special-Status Wildlife Species

6.3.1 - Existing & Temporary Site

The Special-Status Wildlife Species (Appendix B) identifies 15 special-status wildlife species that have been recorded in the CNDDB (CDFW 2018) as occurring within Placerville and Folsom Southeast, California topographic quadrangles (USGS 1986), as recorded by the CNDDB and CNPSEI (CDFW 2018; CRPR 2018). Two quadrangles were included to cover both the existing site and temporary site where development will occur. The table also includes the species' status, required habitat, and potential to occur within the project site. All special-status wildlife species that have been

determined unlikely to occur on-site, primarily based on the absence of suitable habitat, have also been included in the table to justify their exclusion from further discussion.

6.4 - Nesting Birds

6.4.1 - Existing Site

The woodland habitats within the existing site provides cover, foraging, and/or nesting habitat for resident and migratory birds protected by the MBTA and/or the FGC (Sections 3503, 3503.5, 3513, and 3800), which render it unlawful to take native breeding birds, and their nests, eggs, and young. The project has the potential to result in direct impacts on nesting birds.

6.4.2 - Temporary Site

The temporary site is located on a portion of land that consists of previously disturbed ground that shows evidence of past fill and leveling efforts. There are no trees located within the temporary site and, as such, the project is not expected to impact nesting birds.

6.5 - Wildlife Movement Corridors

6.5.1 - Existing Site

The literature review determined that the existing site is not located within a CDFW-designated Essential Habitat Connectivity Area or a Natural Landscape Block. In addition, the project site is not located within areas designated by El Dorado County as Important Habitat for Migratory Deer Herds (Source Code 6) or Important Biological Corridors (Source Code 9). Field surveys determined that the site is not expected to function as a wildlife movement corridor; however, the drainage located to the west of the site potentially functions as a small local corridor for common species.

6.5.2 - Temporary Site

The literature review determined that the temporary site is not located within a CDFW-designated Essential Habitat Connectivity Area or a Natural Landscape Block. In addition, the project site is not located within areas designated by El Dorado County as Important Habitat for Migratory Deer Herds (Source Code 6) or Important Biological Corridors (Source Code 9). Field surveys determined that the site is not expected to function as a wildlife movement corridor.

6.6 - Trees

6.6.1 - Existing Site

As noted above, the existing site contains 1.3 acres of oak woodland habitat and individual oak trees throughout the site, resulting in 13 percent of the entire existing site. Impacts to oak woodland habitat and/or individual oak trees would be considered significant.

6.6.2 - Temporary Site

There are no trees located within the temporary site and therefore no impacts would occur.

6.7 - Jurisdictional Waters and Wetlands Results

6.7.1 - Existing Site

Jurisdictional areas are located adjacent to the existing site and are not expected to be filled or otherwise impacted by the project design, including riparian habitat or other sensitive natural communities.

6.7.2 - Temporary Site

The temporary site lacks jurisdictional areas and shows evidence of having been previously filled. Jurisdictional areas are not expected to be filled or otherwise impacted by project design.

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SECTION 7: IMPACT ANALYSIS AND RECOMMENDATIONS

The following discussion addresses potential impacts to special-status biological resources resulting from the proposed project and recommends mitigation measures where appropriate to minimize those impacts to a level of less than significant under CEQA.

7.1 - Special-Status Plant Species and Communities

7.1.1 - Existing & Temporary Site

There is no suitable or potential habitat for special-status plants or communities within either the existing or temporary project site. Suitable habitat requirements for special-status species analyzed include vernal pools, meadows and seeps, foothill grasslands, other vernally mesic sites, volcanic substrates, and serpentines soils. All of these features are absent from both project sites. As such, no mitigation measures would be necessary.

7.2 - Special-Status Wildlife Species

7.2.1 - Existing Site

No special-status wildlife species were observed within the existing site during the field surveys. In addition, the literature review and field surveys concluded that a majority of the species in the wildlife inventory do not have more than a low potential to exist within the existing site, due to a lack of suitable biological and physical features that are needed to support them adequately; however, habitat conditions within the woodland habitats within and immediately adjacent to the project site create a moderate to high potential for sensitive wildlife species, such as red-tailed hawk, to occur for roosting, foraging, shelter, and/or breeding. However, implementation of MM BIO-1 would reduce impacts to less than significant.

In addition, the woodland habitats within the existing site provides cover, foraging, and/or nesting habitat for resident and migratory birds protected by the MBTA and/or the FGC (Sections 3503, 3503.5, 3513, and 3800), which render it unlawful to take native breeding birds, and their nests, eggs, and young. The project has the potential to result in direct impacts on breeding birds, if project activities occur during the breeding bird season and birds are nesting within the project site and/or immediate vicinity at that time. Temporary direct impacts on breeding birds could occur from increased noise, vibration, and dust during construction, which could adversely affect the breeding behavior of some birds, and lead to the loss (take) of eggs and chicks, or nest abandonment. Impacts on nesting birds would be considered significant; however, implementation of MM BIO-1 would reduce impacts to less than significant.

MM BIO-1 **Pre-Construction Breeding Bird Surveys**

To comply with the Migratory Bird Treaty Act and the California Fish and Game Code, and to avoid and reduce direct and indirect impacts on migratory, non-game

breeding birds and their nests, young, and eggs to less than significant levels, the following measures would be implemented:

a. Project activities that would remove or disturb potential nest sites shall be scheduled outside the breeding bird season, if feasible. The breeding bird nesting season is typically from February 15 through September 15, but can vary slightly from year to year, usually depending on weather conditions.
b. If project activities that would remove or disturb potential nest sites cannot be avoided during February 15 through September 15, a qualified biologist shall conduct a pre-construction clearance and nesting bird survey to search for all potential nesting areas, breeding birds, and active nests or nest sites within the limits of project disturbance up to 30 days prior to mobilization, staging, and other disturbances.
c. If no breeding birds or active nests are observed during the pre-construction survey(s), or if they are observed and would not be disturbed, then project activities may begin and no further mitigation would be required.
d. If a breeding bird territory or active bird nest is located during the pre-construction survey and potentially would be disturbed, a no-activity buffer zone shall be delineated on maps and marked (flagging or other means) up to 500 feet for special-status avian species and raptors, or 100 feet for non-special-status avian species. The limits of the buffer shall be demarcated so as not to provide a specific indicator of the location of the nest to predators or people. Materials used to demarcate the nests shall be removed as soon as work is complete or the fledglings have left the nest. The biologist shall determine the appropriate size of the buffer zone based on the type of activities planned near the nest and bird species because some bird species are more tolerant than others to noise and other disturbances. The nest and buffer zone shall be field-checked weekly by a qualified biologist. The nest and buffer zone shall not be disturbed until the biologist has determined that the young have fledged, the young are no longer being fed by the parents, the young have left the area, or the young would no longer be impacted by project activities

7.2.2 - Temporary Site

No special-status wildlife species are expected to occur on the temporary site because of the lack of suitable biological and physical features that are needed to support them. Furthermore, the temporary site is previously disturbed, shows evidence of fill, and is devoid of woodland habitat. The project design at the temporary site would not result in impacts to special-status wildlife species, and, therefore, impacts would be less than significant.

7.3 - Wildlife Movement Corridors

7.3.1 - Existing Site

As stated in Section 6.5, a potential wildlife corridor is located west of the MRF site associated with an unnamed drainage. Given the proximity and nature of project activities, implementation of the project is not expected to result in impedance or blockage of wildlife movement through this area. As such, impacts would be less than significant.

7.3.2 - Temporary Site

Off-site wildlife corridors potentially exist in the vicinity of the temporary site; however, the temporary site is not expected to support migrating wildlife, and, therefore, the project would not result in impedance or blockage of wildlife movement through this area. Given the disturbed nature of the temporary site, impacts would be considered less than significant.

7.4 - Potential Constraints to Development Due to Local Ordinances

7.4.1 - Existing Site

The proposed project would not remove any existing oak woodlands; however, two individual oak trees within the current project site would be removed as part of project design (Exhibit 4). The first tree, a Valley Oak Tree (#901), is in poor condition and pursuant to the County's Oak Resource is scheduled to be removed and, as indicated in the Arborist Report, requires mitigation to comply with the County's ORMP (Appendix A). Neither tree to be removed is considered a heritage tree.

The ORMP requires mitigation for the following categories of oaks:

a) Total acreage of oak woodland impacted
b) Individual Oak Trees with a 6-inch diameter or greater growing outside the oak woodland.
c) Heritage trees 36-inch diameter and greater in the project area.

As noted above, one of the two oak trees to be removed qualifies for individual oak tree impact mitigation. The Interior Live Oak's (tree A) diameter was measured by the certified arborist for the project at 13 inches. Pursuant to the County's ORMP, the mitigation fee is $153 per diameter inch for a total mitigation fee of $1,989.00 ($153 x 13 inches). Therefore, with the implementation of MM BIO-2, which requires a tree removal permit and payment of fees in accordance with the County's ORMP, impacts would be less than significant.

MM BIO-2 Oak Woodland Removal Permit

In order to comply with the County's Oak Resource Management Plant (ORMP), prior to tree removal activities, the applicant shall obtain a tree removal permit and pay mitigation as outlined by the ORMP.

7.4.2 - Temporary Site

The project would not result in the removal or relocation of oak woodlands, removal of individual oak trees, County Heritage trees, or related habitat at the temporary site. As such, project construction at the temporary site would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. No impacts would occur.

7.5 - Jurisdictional Waters and Wetlands

7.5.1 - Existing Site

Jurisdictional areas are located adjacent to the existing site and are not expected to be filled or otherwise impacted by the project design, including riparian habitat or other sensitive natural communities. Therefore, no further studies or regulatory permitting would be required, as no impacts to any sensitive natural communities or federally protected wetland features are expected.

7.5.2 - Temporary Site

The temporary project site lacks depression features and shows evidence of having been previously filled. The temporary site is located in an area that has been previously cleared and disturbed; furthermore, the site lacks hydrology and hydrophytic vegetation. Lastly, there are no streams or riparian features within the temporary site, and, therefore, no impacts related to wetlands or riparian corridors would occur.

Source: CTA Engineering & Surveying, 04/19/2018.

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Exhibit 4
Impacts to Oak Woodlands

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SECTION 8: CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Date: June 1, 2018 Signed:

Brian Mayerle, Senior Biologist
FirstCarbon Solutions
2204 Plaza Drive, Suite 210
Rocklin, CA 95765

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SECTION 9: REFERENCES

Calflora. 2018. Calflora: Information on California plants for education, research, and conservation. Website: http://www.calflora.org/. Accessed May 2018.

California Department of Fish and Wildlife (CDFW). 2002. Wildlife Habitats—California Wildlife Habitat Relationship System (CWHR). Website: https://www.wildlife.ca.gov/Data/CWHR/Wildlife-Habitats. Accessed May 2018.

California Department of Fish and Wildlife (CDFW). 2005. Biogeographic Information and Observation System (BIOS 5). Website: https://map.dfg.ca.gov/bios. Accessed April 27 2016.

California Department of Fish and Wildlife (CDFW). 2010. Natural Communities List, Sacramento: California Department of Fish and Wildlife.

California Department of Fish and Wildlife (CDFW). 2018. CNDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: https://map.dfg.ca.gov/rarefind/view/RareFind.aspx. Accessed May 2018.

California Native Plant Society (CNPS). 2018a. California Native Plant Society Rare and Endangered Plant Inventory. Website: http://www.rareplants.cnps.org. Accessed May 2018.

California Native Plant Society (CNPS). 2018b. Rare Plant Program. Website: http://www.rareplants.cnps.org. Accessed May 2018.

County of El Dorado. 2018a. Oak Woodland Management Plan. Website: https://www.edcgov.us/government/planning/oakwoodlands/documents/Oak_052008_CompleteDocument.pdf. Accessed May 2018.

County of El Dorado. 2018b. Planning Services, Parcel Data Information. Website: http://edcapps.edcgov.us/planning/parceldatainfodisplayexternal.asp?parcelnumber=05125047. Accessed on May 16, 2018.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Website: http://www.lrh.usace.army.mil/Portals/38/docs/USACE%2087%20Wetland%20Delineation%20Manual.pdf. Accessed May 2018.

FirstCarbon Solutions (FCS). 2018. Oak Resources Technical Report. May. Rocklin, CA.

Hickman, J.C., (ed.) 1993. The Jepson Manual; Higher Plants of California. University of California Press, Berkeley.

Hitchcock, A. 1971. Manual of the Grasses of the United States in Two Volumes, Volume One. Second Edition. New York: Dover Publications, Inc.

Holland, R. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. Sacramento: California Department of Fish and Wildlife.

Mann Gordon. 2018. Arborist Report for Oak Woodland Resources. April 24.

Peterson, T.R. 2010. A Field Guide to Birds of Western North America, 4th Edition. Boston: Houghton Mifflin Harcourt.

Reid, F. 2006. A Field Guide to Mammals of North America, 4th Edition. Boston: Houghton Mifflin Harcourt.

Soil Survey Staff, Natural Resources Conservation Service. 2018. Official Soil Series Descriptions. Website: http://www.nrcs.usda.gov/. Accessed May 2018.

Stebbins, R.C. 2003. A Field Guide to Western Reptiles and Amphibians. Third Edition. Boston: Houghton Mifflin Harcourt.

U.S. Army Corps of Engineers (USACE). 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). Website: https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1046489.pdf. Accessed May 2018.

U.S. Fish and Wildlife Service (USFWS), 2018. Information for Planning and Conservation (IPaC) Federal Endangered and Threatened Species that Occur On or may be Affected by the Proposed Project. Website: http://ecos.fws.gov/ipac/. Accessed May 2018.

Appendix A:
Biological Resources Assessment Supporting Data

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A.1 - Oak Resources Technical Report

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El Dorado Materials Recovery Facility Renovation Project
Oak Resources Technical Report
El Dorado County, California

California USGS 7.5-minute Topographic Placerville Quadrangle Map
Township 10 North, Range 11 East SW/SW, Section 19

Assessor's Parcel Number: 051-250-47
Special Use Permit: S94-0008
Solid Waste Facility Permit: 09-AA-0004

El Dorado County
Community Development Agency
2850 Fairlane Court, Building C
Placerville, CA 95667
530.621.5355

Contact: Rommel Pabalinas, Senior Planner

Prepared by:
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2204 Plaza Drive, Suite 210
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Contact: Ms. Janna Waligorski, Project Manager

Report Date: May 2018

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Table of Contents

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EXECUTIVE SUMMARY

Certified arborist Gordon Mann conducted a field survey to delineate and quantify the oak woodland resources associated within and adjacent to the project site (approximately 10.18 acres). This oak woodland survey report summarizes the methods and results of Mr. Mann's field survey. The report also summarizes the existing oak resources and conditions within the project site and Project vicinity and provides an analysis of the potential impacts on those resources from project implementation. The report also identifies and analyzes the potential significance of site construction and development in view of local regulations. Finally, it recommends, as appropriate, tree protection measures (best management practices, avoidance and protection measures, and mitigation measures) to avoid, eliminate and reduce impacts on oak resources that may be significantly impacted and it provides an identification of plans and tree permits that the Project may need. The complete Arborist Report can be found in Appendix B.

The project will result in the removal of two individual oak trees: one Valley Oak in poor condition with a diameter less than 6 inches and one Interior Live Oak in fair condition with a diameter of 13 inches. Because of the poor condition of the Valley Oak, tree mitigation will be required only for the Interior Live Oak. As such, the project proponent shall be responsible for an In-lieu mitigation fee of $1,989.00 as a result of impacts to individual Oak trees.

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EXECUTIVE SUMMARY

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SECTION 1: INTRODUCTION

Gordon Mann was retained to conduct a field survey for the proposed El Dorado Materials Recovery Facility Renovation Project (project). This report summarizes his findings as they related to impacts to Oak Woodlands. The project proponent proposes to renovate the current Materials Recovery Facility (MRF) to be able to manage and recycle solid waste and to improve traffic circulation into the facility. The project site is located on unincorporated county land, El Dorado County, California.

1.1 - Project Location

The existing MRF currently occupies approximately 8.0 acres of the 10.18-acre parcel within unincorporated El Dorado County, California (Exhibit 1). The project site is located at 4100 Throwita Way, Placerville, CA 95667. The City of Placerville is located north and east of the project site and the community of Diamond Springs is located to the south of the project site.

The site is located in the western Sierra Nevada foothills south of the United States (U.S.) Route 50/State Route 49 (SR-49, Gold Country Highway) intersection. To access the project site, travel south on SR-49 and turn right onto Bradley Drive and left on Throwita Way. The MRF is located at the end of Throwita Way.

The project site is surrounded by undeveloped land to the north and land used for industrial or construction storage to the east. Residential uses are located to the south of the project, while industrial lands used for recreational, boat, and mini storage are located to the west.

The project site is located on one United States Geological Survey (USGS) 7.5-Minute Topographic Map *Placerville* Quadrangle, within Townships 10N; Range 11E; and Section 19 (Mt. Diablo Meridian) (Exhibit 2).

The project property is made up of a single parcel with the Assessor's Parcel Number (APN) 051-250-47.

The approximate center of the Project site is latitude 38°41'55.38"N, longitude 120°48'55.16"W.

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Source: Census 2000 Data, The CaSIL

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Exhibit 1
Project Location Map

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Source: ESRI Imagery, 2016

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500 250 0 500 Feet

Exhibit 2
Project Study Area

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SECTION 2: PROJECT DESCRIPTION

2.1 - Project Background and Purpose

Waste Connections currently operates an existing MRF at the project site. The MRF provides waste transfer services for most of El Dorado County west slope residents and businesses, as part of a hauling and transfer agreement between Waste Connections and the County signed in October 2014. The permitted volume of waste material that may be processed at the existing MRF is 400 tons per day (tpd) of solid waste, 175 tpd of green waste, and 125 tpd of construction and demolition waste, for a total of 700 tpd. According to 2015 data, the MRF processes an average of approximately 296.80 tpd. Tonnage processed on weekends is substantially less than that processed during the week (4011.12 tpd weekday average versus 30.30 tpd weekend average). In 2015, a peak of 514.92 tons was processed on December 9. The existing MRF is inspected monthly by Placer County Environmental Health (under contract with El Dorado County Public Health, the Local Enforcement Agency [LEA]), for compliance with state minimum standards for the handling of solid waste.

The MRF currently operates under an El Dorado County Special Use Permit No. S94-0008 and Solid Waste Facility Permit (SWFP) No. 09-AA-0004. As part of the October 2014 hauling and transfer franchise agreement, Waste Connections agreed to complete a renovation of the existing MRF by October 2019. The existing on-site buildings were not designed for the purpose of managing and recycling solid waste, which limits Waste Connection's ability to operate efficiently. The processing of many waste streams, such as yard waste, construction and demolition waste, commingled recyclable materials and source-separated recyclable materials, is conducted outside. This exposes the various wastes to rain and wind, resulting in the potential for debris scatter and contamination of on-site stormwater runoff. To manage stormwater runoff, the site has three detention basins that are closely monitored. To manage wind exposure, MRF staff continuously monitors the site for windblown debris. Moving waste processing activities inside or under cover would reduce or eliminate exposure to rain and wind, along with their related management issues.

In addition, the current site configuration does not provide for efficient vehicle circulation. The scale/gate house at the main entrance is located close to the public right-of-way on Throwita Way. This proximity has previously resulted in vehicle queues exceeding available storage space, although significant queue exceedances have not occurred since June of 2006, when Waste Connections acquired the MRF. Queue exceedances have historically occurred as a result of the following conditions:

- The location where self-haul customers unload at the transfer station is a short distance from the scale/gatehouse, limiting the on-site queue space and causing traffic to back up onto the public right-of-way.
- Because of the proximity of several operations, including recycle drop-off, green waste unloading, and household hazardous waste (HHW) drop-off and unloading, customers are competing to maneuver and access these areas around traffic and pedestrians. On busy days, customers have to wait to unload, which causes traffic to back up before the scale house.

- The actual queue space before the scale/gatehouse is close to the property line.
- Current circulation requires all traffic to pass through the scale/gate house.

Combined, these conditions have prompted Waste Connections to redesign and redevelop the site in order to provide waste management and recycling services in the most efficient manner, while enhancing the overall environmental, health, and safety conditions.

SECTION 3: REGULATORY CONTEXT

This section summarizes the applicable local ordinance that applies to protecting oak resources from impacts and which may be relevant and applicable to the Project.

3.1 - Oak Resources Management Plan

The Oak Resources Management Plan (ORMP) updates and revises the Oak Woodland Management Plan adopted by the El Dorado County Board of Supervisors on May 6, 2008 (El Dorado County 2008). It incorporates more recent oak resources mapping data for the County and reflects policy language changes made during the General Plan Biological Policy Review project conducted in 2015. The ORMP incorporates relevant information included in the 2008 Plan, where applicable, and was prepared in coordination with El Dorado County Community Development Agency staff. It also incorporates public input gathered during project-focused hearings and direction given by the El Dorado County Board of Supervisors.

The ORMP goals are guided by two General Plan Objectives: Objective 7.4.2 and Objective 7.4.4. Each is listed below.

General Plan Objective 7.4.2 states: "Identify and Protect Resources: Identification and protection, where feasible, of critical fish and wildlife habitat including deer winter, summer, and fawning ranges; deer migration routes; stream and river riparian habitat; lake shore habitat; fish spawning areas; wetlands; wildlife corridors; and diverse wildlife habitat."

General Plan Objective 7.4.4 states: "Forest, Oak Woodland, and Tree Resources: Protect and conserve forest, oak woodland, and tree resources for their wildlife habitat, recreation, water production, domestic livestock grazing, production of a sustainable flow of wood products, and aesthetic values."

3.1.1 - El Dorado County Oak Resources Regulations

The following guidelines are described within the Updated Guidelines for El Dorado County General Plan Policy 7.4.4.4 (El Dorado County 2017) and ordinance 5061 (Oak Resources Conservation Ordinance), which establishes the standards for implementing the County's Oak Resources Management Plan (ORMP):

- For all new developments projects or actions that result in impacts to oak woodlands and/or individual native oak trees, including Heritage Trees, the County shall require mitigation as outlined in the El Dorado County ORMP. The ORMP functions as the oak resources component of the County's biological resources mitigation program.
- The ORMP identifies standards for oak woodland and native oak tree impact determination, mechanisms to mitigate oak woodland and native oak tree impacts, technical report submittal requirements, minimum qualifications for technical report preparation, mitigation monitoring and reporting requirements, and projects or actions that are exempt from this policy. The

ORMP also establishes an in-lieu fee payment option for impacts to oak woodlands and native oak trees, identifies Priority Conservation Areas (PCAs) where oak woodland conservation efforts may be focused, and outlines minimum standards for identification of oak woodland conservation areas outside the PCAs. Requirements for monitoring and maintenance of conserved oak woodland areas and identification of allowable uses within conserved oak woodland areas are also included in the ORMP.

Section 130.39.030—Definitions

- The following Project applicable definitions are defined below in accordance with the ORMP:
  - **Oak Resources**: Collectively, Oak Woodlands, Individual Native Oak Trees, and Heritage Trees.
  - **Heritage Trees**: Any live native oak tree of the genus *Quercus* (including blue oak (*Quercus douglasii*), valley oak (*Quercus lobata*), California black oak (*Quercus kelloggii*), interior live oak (*Quercus wislizeni*), canyon live oak (*Quercus chrysolepis*), Oregon oak (*Quercus garryana*), oracle oak (*Quercus x morehus*), or hybrids thereof) with a single main trunk measuring 36 inches diameter breast height (dbh) or greater, or with a multiple trunk with an aggregate trunk diameter measuring 36 inches or greater.
  - **Individual Native Oak Tree**: Any live native oak tree of the genus Quercus (including blue oak, valley oak, California black oak, interior live oak, canyon live oak, Oregon oak, oracle oak, or hybrids thereof with a single main trunk measuring greater than 6 but less than 36 inches dbh, or with a multiple trunk with an aggregate trunk diameter measuring greater than 10 but less than 3ssix dbh.
  - **Oak Woodlands:** An oak stand with a greater than 10 percent canopy cover or that may have historically supported greater than 10 percent canopy cover.
  - **Oak Woodland Removal Permits**: An oak woodland removal permit shall be required for discretionary or ministerial (e.g., building permits) projects to authorize removal of any trees that are a component of an oak woodland. An oak resources technical report shall accompany any oak woodland removal permit application submitted to the County. The County may impose such reasonable conditions of approval as are necessary to protect the health of existing oak woodlands, the public, and the surrounding property. Oak woodland removal permit review will be integrated into the environmental review process for discretionary projects or may be processed as an administrative permit for ministerial projects. In addition to findings of consistency with the requirements and standards of this ORMP, the County shall make the following findings before approving an oak woodland removal permit application:
    - The proposed action is consistent with the General Plan; and the proposed action is specifically allowed by this ORMP and implementing ordinance (No.5061).

3.1.2 - Oak Woodland Mitigation Requirement as Specified by the ORMP (Ordinance 5061)

A. **Mitigation Options—**Mitigation for the impacted oak woodlands can be choose from one or more of the following options:

1. Off-site deed restriction or conservation easement acquisition and/or acquisition in fee title by a land conservation organization for purposes of off-site oak woodland conservation;
2. In-lieu fee payment to be either used by the County to acquire off-site deed restrictions and/or conservation easements or to be given by the County to a land conservation organization to acquire off-site deed restrictions and/or conservation easements;
3. Replacement planting on-site within an area subject to a deed restriction or conservation easement;
4. Replacement planting off-site within an area subject to a conservation easement; or
5. A combination of numbers 1 through 4 above.

B. **Individual Native Oak Tree Removal—**If Individual Native Oak Trees, including Heritage Trees, regardless of location within or outside of an oak woodland, will be impacted as part of the permit, the applicant shall mitigate for loss of individual tree(s) by In-lieu Fee payment to the Oak Woodland Conservation Fund. In Lieu Fee payment for individual oak tree removal shall be as shown in Table 1, pursuant to the ORMP.

Table 1: Individual Oak Tree In-Lieu Fee

Activity	Cost per Inch
Acquisition	$31.90
Initial Management and Monitoring	$113.40
Administration	$7.27
Total Cost per Inch (non-Heritage Trees)	**$153**

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SECTION 4: STUDY METHODS

This section describes the study methods (field survey) used by the arborist for evaluating the oak resources that exist within the Project site and Project vicinity.

4.1 - Field Survey Methods

Certified arborist, Gordon Mann surveyed the Project site on April 4 and 18, 2018 to determine the extent of oak resources and corresponding impacts from Project construction. The survey covered all accessible areas of the project site and was conducted during the daytime on foot.

Mr. Mann was requested to provide information required to satisfy the County of El Dorado's Oak Woodland Resources. Including determining the oak woodland area, identifying all trees in the woodland area 24 inches in diameter and greater, all Heritage Trees 36 inches in diameter or greater, and any individual oak trees 6 inches and greater located outside of the oak woodland designation for mitigation for tree removal based on the County's ORMP Oak Resources requirements and Ordinance No. 5061.

Dbh is the industry standard for measuring trunk diameter. For trees with straight trunks and normal taper, the measurement is taken at 4.5 feet above grade. When a swollen trunk area, flare from branching, multiple stems, or other abnormal growth is present, the measurement is taken at the most appropriate location for determining the reasonable trunk diameter, and the height of the measurement is listed. The initial measurements were taken with a Biltmore Stick. For all oak woodland trees close to 24 inches in diameter or greater, a second, more accurate measurement was taken with a diameter tape. For all individual oak trees close to 6 inches in diameter or greater, a second, more accurate measurement was taken with a diameter tape. Mr. Mann utilized aerial imagery of the project site provided by CTA Engineering and Survey.

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SECTION 5: RESULTS & RECOMENDATIONS

5.1 - Results

This section describes the results of the field survey. The Summary Data Sheet of Oak Resources Impacts for Oak Tree/Oak Woodland Removal Permits can be found in Appendix A, and the Arborist report can be in Appendix B.

A total of 1.3 acres of oak woodland canopy were found on-site (Exhibit 3). Within the oak woodland, four oak trees were found to be 24 inches in diameter or greater. No trees within the oak woodland were found to be 36 inches in diameter or greater and considered a Heritage Tree. None of the trees found within the oak woodland area are expected to be impacted by project design. The data for the four oak trees of a diameter of 24 inches and greater located within the oak woodland area are provided in Table 2.

Table 2: Trees within Oak Woodland Area

Tree #	Species	Diameter (inches)	Condition	Comments
902	Valley Oak	32.2 at 1 foot	Poor	Co-dom at 3 feet; significant basal decay; SE side cavity; end weights; interior live oak (914) at base; not impacted
906	Valley Oak	12.7, 11.3	Poor	Co-dom at 2 feet; steep slope; top side of stems buried 3 feet in sluff; north stem leans east; not impacted
916	Valley Oak	24.6	Fair	At fence line; co-dom stem at 6 feet; symmetric; Interior Live Oak (917) at base; not impacted
935	Valley Oak	33.5	Fair	Co-dom at 7 feet; end weights; power line runs through canopy; growing on top of ridge; not impacted

Individual oak trees growing outside of the oak woodland area and within the project site were inspected for diameter, and those individual oak trees that were 6 inches in diameter or greater were measured. A total of three individual trees were found to be 6 inches in diameter or greater, and one individual tree was found to be a Heritage Tree. Two trees (#901 and Tree A) will require removal as part of project design. The tree identified as a heritage tree (#935) would not be removed. The data for the three individual oak trees are provided in Table 3.

Table 3: Trees within Project Site

Tree #	Species	Diameter (inches)	Condition	Comments
901	Valley Oak	4,5,3,1,1,1	Poor—30	Next to propane tank; growing next to a multi trunk plum; six stems at base; Remove for project
935	Interior Live Oak	36.5 @ 3’	Fair—45	Heritage tree; basal decay north side; co-dom leaders at 4 feet; included bark; small cavity in crotch; end weights over street and fence; retain and prune; not impacted
A	Interior Live Oak	13	Fair—45	On slope, 8 feet from fence; dense lower brush around trunk; remove for project

5.2 - Recommendations

The project will not impact any trees within the oak woodland area. The project would require the removal of two individual oak trees: one Valley Oak (#901) in poor condition with a diameter less than 6 inches and one Interior Live Oak (Tree A) in fair condition with a diameter of 13 inches (Exhibit 3). The identified heritage tree would not be removed. Because of the poor condition of the Valley Oak tree (#901) mitigation will only be required for the Interior Live Oak (Tree A). Because of the removal of an individual oak tree, the project applicant will be required to pay an in-lieu mitigation fee as specified in Table 1 in Section 3.1.2 above. With the implementation of this mitigation, the project would comply with Ordinance 5061 and General Plan Policy 7.4.5.2 by in-lieu fee payment to the County. Pursuant to the ORMP, the mitigation fee is calculated as follows:

- Individual Oak Tree Impact—1 Interior Live Oak tree measured at 13 inches in diameter, $153 per inch= $1,989.00

5.2.1 - Tree Protection

The following tree protection measures are recommended:

- Fence all trees to be retained to completely enclose the tree protection zone prior to demolition and grading. Fences shall be 6-foot chain link or equivalent as approved by a Consulting Arborist. Fences are to remain until all grading, construction and landscaping is completed. Place weatherproof signs, 2 feet x 2 feet, on the fencing that read “Tree Protection Zone (TPZ) Keep Out.”
- Where possible, cap and abandon all existing underground utilities within the TPZ in place. Removal of utility boxes by hand is acceptable but no trenching should be performed within the TPZ in an effort to remove utilities, irrigation lines, etc. Any brush clearing required within the TPZ shall be accomplished with hand-operated equipment.

- Trees to be removed shall be felled so as to fall away from TPZ and avoid pulling and breaking of roots of trees to remain. If roots are entwined, the consultant may require first severing the major woody root mass before extracting the trees, or grinding the stump below ground.
- All down brush and trees shall be removed from the TPZ either by hand, or with equipment sitting outside the TPZ. Extraction shall occur by lifting the material out, not by skidding across the ground.

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Source: CTA Engineering & Surveying, 04/19/2018.

FIRSTCARBON SOLUTIONS™

Exhibit 3
Impacts to Oak Woodlands

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SECTION 6: LITERATURE CITED AND REFERENCES

Baldwin, B. G., D. H. Goldman, D. J. Keil, R. Patterson, T. J. Rosatti, and D. H. Wilken, editors. 2012. The Jepson Manual: Vascular Plants of California, second edition. University California Press, Berkeley.

El Dorado County. 2004a. 2004 El Dorado County General Plan. A Plan for Managed Growth and Open Roads; A Plan For Quality Neighborhoods and Traffic Relief. Adopted July 19, 2004 (Amended December 6, 2016).

El Dorado County. 2004b. El Dorado County General Plan Conservation and Open Space Element. July 2004. Amended December 2015

El Dorado County. 2006a. Interim Guidelines Biological Resources Study & Important Habitat Mitigation Program.

El Dorado County. 2006b. Interim Interpretive Guidelines for El Dorado County General Plan Policy 7.4.4.4 (Option A). Adopted November 9, 2006 (Amended October 12, 2007).

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Appendix A: Summary Data Sheet of Oak Resources Impacts for Oak Tree/Oak Woodland Removal Permits

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COMMUNITY DEVELOPMENT SERVICES
PLANNING AND BUILDING DEPARTMENT

2850 Fairlane Court, Placerville, CA 95667

Phone: (530) 621-5355 www.edcgov.us/Planning/

OAK RESOURCES TECHNICAL REPORT CHECKLIST

The following information is required for all Oak Resources Technical Reports consistent with Section 2.5 (Oak Resources Technical Reports) of the Oak Resources Management Plan (ORMP):

FORMS AND MAPS REQUIRED

Place a check (√) on the "Applicant" lines for those items completed. The planner receiving the application will check (√) the "County" line.

Check (√) Applicant	County		
☒	☐	1)	Identify, locate, and quantify all oak resources on the property, as applicable:

a) Oak woodlands shall be mapped and assessed in accordance with the CDFG 2009 *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* and subsequent updates, and the *List of Vegetation Alliances and Associations* (CDFG 2010) and subsequent updates;

b) Data collected for individual native oak trees and Heritage Trees shall include: location, species, trunk diameter (dbh), height, canopy radius, and general health and structural condition.

☒	☐	2)	Identify and quantify project-related impacts to oak resources
☒	☐	3)	Measures identifying how specific trees and woodlands (or retained portions thereof) shall be protected during development and related work

Check (√) Applicant	County		
☒	☐	4)	Proposed actions to mitigate impacts to oak resources, consistent with the requirements included in the ORMP:

a) For replacement planting, the report shall provide detail regarding the quantity, location, planting density, replacement tree size(s), and acorn/seedling source consistent with the definition of Replacement Planting included in the ORMP;

b) For conservation easement placement/acquisition and/or land acquisition in fee title, the report shall provide documentation of easement placement on-site and/or documentation of easement or land acquisition off-site to the satisfaction of the County;

c) For in-lieu fee payment, the report shall document the quantity of impacts (acreage of oak woodlands and/or total diameter inches of individual native oak trees/Heritage Trees) and the total in-lieu fee payment necessary (presented separately for oak woodlands, individual native oak trees, and Heritage Trees, where applicable).

☒	☐	5)	Identification of responsible parties
☒	☐	6)	Identification of maintenance, monitoring, and reporting requirements
☒	☐	7)	Analysis of non-PCA conservation easement areas, where applicable
☒	☐	8)	Site map(s) depicting:

a) location of all oak woodlands, individual native oak trees, and Heritage Trees;

b) location of all proposed project-related improvements (including, but not limited to, the limits of grading, fuel modification/defensible space areas, and above- and below-ground infrastructure);

c) Site map(s) shall also clearly identify impacted oak resources.

☒	☐	9)	Planning and Building Department Summary Data Sheet of Oak Resources Impacts for Oak Tree/Oak Woodland Removal Permits.

SUPPLEMENTAL DATA FOR INDIVIDUAL NATIVE OAK TREES WITHIN OAK WOODLANDS:

The ORMP and Oak Resources Conservation Ordinance (No. 5061) was adopted on October 24, 2017 and the Board of Supervisors will review implementation within 12 months after adoption. The Board requested the following supplemental information:

☒	☐	10)	Provide an inventory (species and size) of impacted Individual Native Oak Trees greater than 24 inches and less than 36 inches (dbh) in oak woodlands.

COMMUNITY DEVELOPMENT SERVICES
PLANNING AND BUILDING DEPARTMENT

2850 Fairlane Court, Placerville, CA 95667

Phone: (530) 621-5355 www.edcgov.us/Planning/

Summary Data Sheet of Oak Resources Impacts for Oak Tree/Oak Woodland Removal Permits

Description		Blue *(Quercus douglasii)*	California Black *(Quercus kelloggii)*	Canyon Live *(Quercus chrysolepis)*	Interior Live *(Quercus wislizeni)*	Oregon White *(Quercus garryana)*	Valley *(Quercus loabata)*	Oracle (hybrid) *(Quercus x morehus)*
Quantity (number of trees) of individual native oak trees to be removed, by species	2				1		1	
Quantity (number of trees) of individual native oak trees to be removed, greater than 24 inches and less than 36 inches (dbh), by species	0							
Total trunk diameter inches (dbh) to be removed*	28							
Quantity (number of trees) of Heritage Trees to be removed, by species	0							
Total trunk diameter inches (dbh) to be removed*	0							
Total Acreage of existing oak woodlands**	1.3							
Acreage of existing oak woodlands to be removed	0							
Percentage of existing oak woodlands to be removed*	0							

**** Information used for purposes of calculating in-lieu mitigation fee payment.***
***** If Heritage Trees occur within oak woodlands, the area of impacted Heritage Tree(s) should be included in oak woodland acreage calculations.***

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Appendix B: Arborist Report

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Arborist Report

April 24, 2018

FirstCarbon Solutions
1350 Treat Road, Suite 380
Walnut Creek, CA 94597

Attention: Robert Carroll, Biologist

Work location
Waste Connections Recovery Faciltiy
Throwita Way/Dimetrics Way
Placerville, CA 95667

Arborist Report for Oak Woodland Resources

APN
051-250-47

Prepared by:
Gordon Mann, Consulting Arborist

Arborist Disclosure Statement

Arborists are tree specialists who use their education, knowledge, training and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risk of living near trees. Clients may choose to accept or disregard the recommendations of the arborist, or to seek additional advice.

Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Trees are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments, like any medicine, cannot be guaranteed.

Treatment, pruning and removal of trees may involve considerations beyond the scope of the arborist's services such as property boundaries, property ownership, site lines, disputes between neighbors, and other issues. Arborists cannot take such considerations into account unless complete and accurate information is disclosed to the arborist. An arborist should then be expected to reasonably rely upon the completeness and accuracy of the information provided.

Trees can be managed, but they cannot be controlled. To live near trees is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate all trees.

Assignment

The subject site is an approximately 10.1 acre mostly developed commercial site surrounded by on open space to the northwest, a commercial property to the north, east, and west, commercial properties with small oak woodland growing in between to the east, and west, and a residential property with small oak woodland growing in between to the south. The property has existing large buildings and extensive paving on the site. The client contacted our office and requested we provide the information required to satisfy the County of El Dorado's Oak Woodland Resources, determining the oak woodland area, identifying all trees in the woodland area 24 inches in diameter and greater, all Heritage Trees 36 inches in diameter and greater, and any individual oak trees 6 inches and greater located outside of the oak woodland designation for mitigation for tree removal based on the County ORMP Oak Resources requirements and Ordinance No. 5061. This report is the result of onsite inspections performed on April 4, and April 18, 2018, and the use of aerial imagery provided by CTA Engineering and Survey.

Assignment limits

All the trees were observed while standing on the ground. Data collected is limited to a visual ground inspection. The aerial image was provided by CTA Engineering and Surveying. Ground inspections and measurements were used to insure the accuracy of the inspection data.

Current Existing Tree Status (general)

The site is at the end of Throwita Way. The western part of site has is relatively flat, and the eastern part of the site is a hillside. The site is an existing dump site and transfer station for refuse, green waste, and a recycle point for oils, electronics, large appliances, and other waste items. The

development is required to comply with the El Dorado County ORMP Oak Resources requirements and Ordinance No. 5061.

The oak woodland on the site is on the eastern, southern, and western edges of the property. All oaks except three individual trees are located outside the existing chain link fence. Two of the individual oak trees are proposed to be removed as part of the project. The third largest oak, a Heritage Tree is not planned to be removed east of the entrance to the site. The oak woodland is a mix of Interior Live Oaks *Quercus wislizenii*, Valley Oak, *Quercus lobata*, and non-oaks including pine, scrub, walnut and assorted large shrubs. There were larger oaks in the oak woodland areas, to the east and west, and smaller oak trees along the south, southeast and southwest edges of the property. Many of the oaks and canopy is found in trees growing outside the fence and leaning into and over the fence. The proposed grading may encroach some into the canopy, and was found to be a small enough encroachment, not to cause decline or removal of the existing trees.

One Interior Live Oak to the east of the entry station is large enough, 36.5 inches diameter, to be considered a Heritage Tree – native oak trees with diameters of 36-inches or greater. There were two other individual oak trees growing on the site. One Interior Live Oak was located to the west of the entry shack and was in fair condition and has a diameter of 13 inches. A second Valley Oak tree is growing in the pond area adjacent to the propane tank. It is a multiple trunk tree of 4, 5, and 3 inches, in poor condition. Both individual oak trees are proposed for removal and the Interior Live Oak tree will need to be mitigated for the removal. The Valley oak tree is in poor condition and will not require mitigation.

The existing oak woodland area of the project was found to be 1.3 acres. The plans propose removing no acres of oak woodland, removing two individual oak trees and retaining one Heritage Oak tree.

There is one individual oak tree in fair or better condition proposed to be removed and and will require mitigation. The total diameter inches of mitigation required for the individual tree is 13 inches.

The oak woodland, 1.3 acres, covers approximately 12.87 percent of the total site acres, 10.1 acres. The amount of oak woodland proposed for removal, 0 acres, is approximately 0% of the existing oak woodland.

Technical Recommendations

It is recommended that all tree care follow specifications written in accordance with ANSI A-300 standards. Pruning of the trees should be performed in the outer edge of the canopy to reduce leverage and end weights, and allow the center of the canopies to grow and fill in with foliage. It is also recommended that when root pruning, the smallest size roots as possible be pruned, cuts be performed with handsaws, loppers, or chainsaws appropriate for the size of the root being cut. The roots should be exposed by excavating prior to cutting. Roots should be pruned prior to root removal within the tree protection area to limit the damage and tearing of roots back towards the tree. Root pruning should be overseen by a qualified arborist.

Tree planting should follow the specifications included in Appendix A.

General Tree Care and Maintenance

The appendix information is given so that an onsite landscape manager can properly take care of the retained trees, and newly planted trees. Established native oak trees do not like to have the base of the trunk or their roots and the surrounding soil disturbed or tampered with. Applying or having unintentional landscape water in the root zone can cause catastrophic and negative affects to most species of native oak trees. Newly planted oak trees do need their root balls watered until established and then may need supplemental watering during extended periods of dry or hot weather. It is, therefore, recommended that the landscape be designed using drought tolerant plants that will require little to no watering after establishment. Irrigation should be delivered using an on-surface drip type system that does not require trenching around the oak trees to install. The plants should be spaced at least 6 feet away from the trunk of native oak trees, and the drainage from irrigation should be managed so water does not flow to the trunks of the oak trees. Trees that are growing in high use areas should be inspected by a qualified arborist for tree risk on a routine basis, the frequency depending on site use and tree condition.

Observations

The site was inspected on April 4 and 18, 2018. All trees were inspected for diameter, and those oak woodland trees that were 24 inches diameter or greater were measured with a diameter tape, assessed for condition, the number of stems present, and notes explaining the tree condition were recorded. A total of 4 Oak Woodland trees were found to be 24 inches diameter or greater, and 0 of those trees was found to be 36 inches in diameter or greater and considered a Heritage Tree. The data for the 4 oak trees 24 inches and greater growing in the oak woodland is provided below:

Tree #	Species	Diameter inches	Condition	Comments
902	Valley Oak	32.2 at 1’	Poor	Co-dom at 3’; significant basal decay; SE side cavity; end weights; interior live oak (914) at base
906	Valley Oak	12.7, 11.3	Poor	Co-dom at 2’; steep slope; top side of stems buried 3’ in sluff; north stem leans east
916	Valley Oak	24.6	Fair	At fenceline; co-dom stem at 6’; symmetric; Interior Live Oak (917) at base
935	Valley Oak	33.5	Fair	Co-dom at 7’; end weights; power line runs through canopy; growing on top of ridge

The individual oak trees growing outside of the oak woodland and inside the property fence were inspected for diameter, and those individual oak trees that were 6 inches diameter or greater were measured with a diameter tape, assessed for condition, the number of stems present, and notes explaining the tree condition were recorded. A total of 3 individual trees were found to be 6 inches diameter or greater, and one individual tree was found to be a Heritage Tree. The data for the 3 individual trees is provided below:

Tree #	Species	Diameter inches	Condition	Comments
901	Valley Oak	4, 5, 3, 1, 1, 1	Poor 30	Next to propane tank; growing next to a multi trunk plum; 6 stems at base; Remove for project
935	Interior Live Oak	36.5 @ 3'	Fair-45	Basal decay north side; co-dom leaders at 4'; included bark; small cavity in crotch; end weights over street and fence; retain and prune
A	Interior Live Oak	13"	Fair-45	On slope, 8' from fence; dense lower brush around trunk; Remove for project

The tree condition is a combination of vigor, structure, trunk, branches, trunk flare, live tissue, and defects and decay or pests. It is described in % and range term. The rating scale is:

Range	# Rating	Description
Excellent	81-100	Found to have none to few defects or decay, and high vigor
Good	61-80	Found to have few defects or decay, and above average vigor
Fair	41-60	Found to have mitigatable defects, limited decay, and average vigor
Poor	21-40	Found to have significant defects, decay, and lower vigor
Very poor	120	Found to have significant defects, decay, and low declining vigor
Dead	0	Found to be dead

Plus and minus symbols are included in the rating range to show the position of the % rating in the range.

The oak canopy area was calculated by CTA Engineering and Surveying using aerial imagery calculating the area of the site considered Oak Woodland. The field inspection confirmed the location of the canopy as shown on the aerial image.

DBH is the industry standard for measuring trunk diameter. For trees with straight trunks and normal taper, the measurement is taken at 4.5 feet above grade. When a swollen trunk area, flare from branching, multiple stems, or other abnormal growth is present, the measurement is taken at the most appropriate location for determining the reasonable trunk diameter, and the height of the measurement is listed. The initial measurements were taken with a Biltmore Stick. For all oak woodland trees close to 24 inches diameter or greater, a second more accurate measurement was taken with a diameter tape. For all individual oak trees close to 6 inches in diameter or greater, a second more accurate measurement was taken with a diameter tape.

The proposed development site is 10.1 acres. The oak canopy is outside of the existing fence and 1.3 acres. The canopy shown on the aerial image was confirmed during the field visits to be an accurate representation.

Other testing or examination:

No additional testing or examination was requested at the time of the inspection or found necessary.

Mitigation Calculations:

The ORMP requires mitigation in 3 areas of a project impacting oak woodland:

a. Acreage of oak woodland impacted
b. Individual Oak Trees 6-inch diameter and greater growing outside of the oak woodland
c. Heritage Trees 36-inch diameter and greater in the project area

(a) The project site is approximately 10.1 acres and contains areas of oak woodland and individual oak trees that will require mitigation if removed. The mitigation ratio is determined by 0 acres proposed for removal of the total 1.3 acres of oak woodland equals 0% of the Oak Woodland being impacted. The proposed oak woodland impact falls into the Oak Woodland Impact range of 0 - 50%. That percent woodland removal/impact requires a 1:1 mitigation ratio. The total mitigation acreage is: 1 (ratio) X 0 impacted acres = 0 total acres required for Oak Mitigation.

The mitigation ratio chart for El Dorado County ORMP is:

Percent of Oak Woodland Impact	Oak Woodland Mitigation Ratio
0-50%	1:1
50.1 – 75%	1.5:1
75.1-100%	2:1

The next mitigation required is the individual oak trees. 1 tree that requires mitigation is proposed for removal equaling 13 diameter inches. The mitigation fee is $153 per diameter inch for a total mitigation fee of $1,989.00.

The final mitigation requirement is the proposed removal of Heritage trees, trees 36 inches and greater. There are no Heritage Trees proposed for removal, and there is no additional mitigation fee.

The total mitigation fee for the proposed project will be $1,989.00.

The oak woodland mitigation requirements for the project was calculated based on the following information:

Total area of the project area: 439,956 square feet, or 10.1 acres
Total area of oak woodland: 56,628 square feet, or 1.3 acres
Total percent of existing oak woodland: 12.87%
Total area of total oak woodland to be removed: 0 square feet, or 0 acres
Total percent of oak woodland to be removed: 0%
Oak Woodland Mitigation Ratio: 1:1
Total area of Oak Woodland to be mitigated: 0 acres
Total number and diameter inches of individual oak trees to be removed: 1 trees, 13 diameter inches
Total number and diameter inches of Heritage Trees to be removed: 0 trees, 0 diameter inches
Total area of pre-mitigated oak canopy to be removed: 0 sq. ft.
Total area of oak woodland required to be mitigated: 0 acres
Total Oak Woodland Area Impacted Mitigation: 0 acres @ $8,285 per acre = $0.00

Individual Oak tree Impacted Mitigation: 1 tree, 13 inches, $153 per inch: $1,989.00
Heritage Tree Impacted Mitigation: 0 trees, 0 inches, $459 per inch: $0.00
Total Amount of Oak Resource Mitigation: $1,989.00

Due to previous development in the surrounding areas, there is not an existing oak corridor in the project property and adjacent properties. The proposed oak removal will not impact a continuous oak corridor. The proposed soil covering is going to cover most of the subject property and will remove most of the existing trees and one oak tree in fair condition or better on the site. The in lieu fee will meet the mitigation requirements for this project.

With the proposed mitigation, the proposed project is in compliance with the Ordinance 5061, Oak Resources Conservation.

The project is in compliance with General Plan Policy 7.4.5.2 by In-lieu fee payment to be either used by the County to acquire off-site deed restrictions and/or conservation easements or to be given by the County to a land conservation organization to acquire off-site deed restrictions and/or conservation easements.

Conclusion:

There are 0 acres of the 1.3 acres oak woodland area proposed to be impacted. The 0 percent oak woodland removal/impact requires a 1:1 mitigation ratio. The 1 ratio X 0 impacted acres = 0 total acres required for Oak Mitigation.

There is 1 individual oak tree proposed for removal, requiring 13 inches of mitigation. 13inches X $153 per inch = $1,989.00 mitigation fee.

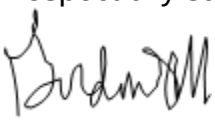
There were no Heritage Trees requiring mitigation impacted by the proposed development.

The total calculated mitigation fee is $1,989.00. The mitigation proposed will meet the required mitigation based on the El Dorado County ORMP Oak Resources requirements and Ordinance No. 5061.

Please contact Gordon Mann, of California Tree and Landscape Consulting, Inc., if there are any questions about this report.

Disclaimer: Gordon Mann, has analyzed the situation, applied the proper method(s) utilized within the profession, and performed a reasonableness test to support the project tree related decisions. I, nor the employees or subcontractors of California Tree and Landscape Consulting, Inc., may be held liable for the misuse or misinterpretation of this report. As the author of this report, I do hereby certify that all the statements of fact in this report are true, complete, and correct to the best of my knowledge and belief, and that they are made in good faith.

Respectfully submitted,



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ISA TRAQ Qualified Tree Risk Assessor
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Attachments:

Appendix A Tree Planting Specifications
Appendix B Nursery Stock and Tree Planting
Appendix C Tree Protection
Appendix D Avoiding Damage During Construction
Resume for Gordon Mann
Waste Connections Materials Recovery Facility Tree Canopy Exhibit dated April 2018

Appendix A
Tree Planting Specifications

Trees shall be free of major injury such as scrapes that remove greater than 20% of the bark circumference, a broken central leader, or constrictions from staking or support. The graft, if present, shall be consistent for the production of the cultivar or species. The trunk flare shall be at grade, not buried by soil, and adventitious roots shall not be growing from above the trunk flare.

The tree shall not be root bound in the container, and the trunk diameter relative to the container sizes, within the limits of American National Standards Institute (ANSI) Z-60 Nursery Standards.

Prior to acceptance, upon delivery, trees may be pulled from the container, so the rootball can be inspected for compliance with the specifications. An agreed upon maximum percent of trees may be checked for compliance. The nursery should provide post delivery care specifications to keep the trees in optimum condition until planting.

Tree Planting

1.0 INSPECT THE TREE

1.1 Carefully remove the soil at the top of the container to locate the trunk flare. Check for girdling roots and damage to the root system and lower trunk.
1.2 Until a relationship is established with the supplying nursery, randomly select an acceptable sample for the delivery. Inspect the root system by taking the rootball out of the container, and remove all the soil from the root system. Inspect the inner roots to verify that the roots were properly pruned when moved from the initial container to the next larger size. Keep the root system moist during the check. If the roots were properly pruned during container transfer, and the roots have been kept moist, the tree can be planted as a bare root tree.
1.3 If the trees are acceptable, each tree shall be removed from the container prior to digging the hole, and the depth of the rootball from the trunk flare to the bottom of the rootball shall be measured. This measurement, less 1" is the depth the pedestal in the center of the planting hole shall be excavated to.

2.0 DIG THE HOLE

2.1 Shave and discard grass and weeds from the planting site.
2.2 The hole should be a minimum 3 times the diameter of the container diameter.
2.2.1 Square containers shall be dug with a circular hole 3 times the container measurement.
2.3 Dig the hole, leaving an undisturbed pedestal in the center that the root ball will be set on.
2.4 The pedestal shall be excavated to the depth measurement determined above

3.0 ROOT BALL PREPARATION

3.1 Loosen and straighten outside and bottom roots prior to placing the rootball on the pedestal. The trunk flare (the point where the trunk meets the roots) should be 1" above ground level.
3.2 Winding and girdling roots shall be pruned to either the point they are perpendicular to the root ball, or a point where they can be straightened and placed perpendicular to the rootball.
3.3 Keep the roots moist during this process so they do not dry out.

4.0 BACKFILL

4.1 Hold the tree so the trunk and central leader are in a straight upright position.
4.2 Backfill soil with the soil you removed around the base of the pedestal and rootball no higher than 2/3, so the tree stands in the upright position
4.3 Tamp the soil to remove air gaps, or fill with water and allow soil to settle and drain. Continue to fill the entire hole with existing soil in layers and tamping, up to finished grade. Backfill soil shall not be placed on top of the rootball.
4.4 Build a berm at the outside edge of the rootball. The berm shall be a minimum 3 inches high and wide.
4.5 Cover the remainder of the backfill soil outside the berm with a set level of mulch (2 to 4 inches deep).

5.0 STAKING

5.1 Remove the nursery stake (the thin stake tied to the trunk) that is secured to the tree.
5.2 Install the appropriate number of stakes – for example, two stakes on the windward and leeward side of the tree, set at least 2 feet into the native soil outside the rootball.
5.2.1If the area is exceptionally windy, high traffic, or when specified, install 3 or 4 stakes spaced evenly around the circumference, outside the rootball.
5.3 One tie per stake shall be placed at the lowest point on the trunk where the tree crown stands upright. Ties shall be placed using a "figure 8" crossing pattern wrapped around the trunk and firmly tied or attached to the stake.
5.3.1 Ties shall be loose enough so the tree crown moves up to 3 times the trunk diameter in the wind, and taut enough that the trunk does not rub the stakes during movement.
5.4 The stakes shall be cut off above the tie point so branches do not rub the stake above the tie point.
5.5 Check the stakes and ties periodically, removing them when the tree is able to stand on its own.
5.6 If a leader that should be vertical is drooping, the leader may be temporarily straightened using a bamboo or small diameter wood splint approximately 25% longer than the drooping section of stem, tied to the stem at the top and bottom of the splint to hold the stem vertical. The splint shall be removed prior to girdling or constricting the stem, and may be re-installed as necessary.

6.0 MULCH

6.1 Apply a set depth (2 to 4 inches) of wood chips or other organic mulch over the planting hole excavated soil.
6.2 Mulch may be placed inside the berm and shall be kept at least 4" away from the trunk flare.
6.3 The soil area of the planting hole shall be kept clear of grass and landscape plantings.

7.0 WATER/IRRIGATION

7.1 Apply water using a low pressure application, i.e.: trickle from a hose, soaker hose, or bubbler.
7.2 Use low water volume to apply the water. Add water long enough to saturate the rootball and planting area.
7.2.1 Lawn sprinklers shall not be considered an acceptable method of applying irrigation to newly planted trees.
7.3 The initial watering frequency shall be checked by monitoring the soil moisture. Based on the temperature and humidity, learn how long the soil retains the moisture.
7.4 After the soil is below field capacity, and before it dries out, repeat the watering process, every so determined days.
7.4.1 As the weather and seasons change, the irrigation frequency may change. This will be evaluated by checking soil moisture following water application.
7.4.1.1 For example: you may learn irrigation should be applied twice a week during the fall, except in cool or rainy weather. Irrigation may need to be applied every two days during hot dry summer periods.
7.5 Irrigation shall be continued for the first three years after planting.
7.5.1 Avoiding drying out the rootball and adjacent soil is critcal for tree growth and establishment.

8.0 PROTECT THE TRUNK

8.1 Avoid damage from mowers and string trimmers to the tender bark of the young tree.
8.2 Maintain a clear area free of vegetation around the trunk in the berm or basin area.
8.3 Keep the set depth of mulch (2 to 4 inches) coverage of the area around the tree.
8.4 Retain temporary low branches along the trunk to shade and feed the trunk.

9.0 PRUNING NEWLY PLANTED TREES

9.1 Broken and dead branches shall be pruned.
9.2 A central leader shall be identified and retained if present. If co-dominant leaders are present, they shall be pruned to be shorter than the central leader by 20%.
9.3 All low temporary branches on the lower trunk shall be retained, and if needed shortened for clearance.

Detail for #1, #5 and #15 container planting stock

10. **FUTURE CARE**

10.1 During subsequent years, the berm should be enlarged or removed to in order to provide water to the increasing root growth. The watering area should target new root growth and projected root growth.

10.2 Pruning should retain a dominant central leader; and retain low temporary branches until trunk bark hardens or remove before branch diameter becomes too large.

Appendix B

Nursery Stock and Tree Planting

Nursery Stock purchase

Trees purchased for the subject project shall be the Genus, species, and cultivar specified in the purchase documents. Trees shall be grown to be free of bound root systems caused by winding roots or kinked roots from a previous smaller container. As trees are moved to larger containers, circling roots shall be either pruned to a point where they can grow straight, straightened in the new container, or removed. Kinked roots shall be pruned to a point where they will grow straight outward or downward.

The trunk and branches shall be of a structure where a central leader is defined, or the central leader can be easily selected. The competing leaders have a smaller diameter, and can be pruned shorter.

Appendix C

Tree Protection

The edge of the tree canopy outside of the construction area shall be fenced off with construction fencing, either temporary orange fence or chain link fence. The fence shall be placed as far from the trees as possible, targeting outside the dripline. If the fence cannot be placed outside of the dripline, the project arborist shall determine if the distance is acceptable or some other soil protection is necessary. A certified arborist must approve the placement of the tree fence. The fence will be marked with weather appropriate signage clearly stating the area as “Protected! Do not enter! Tree preservation zone.” Sign(s) will be placed on every face or direction of fence line.

No storage of supplies or materials, parking, or other construction activity shall occur within the fenced area. If a construction activity is required within the construction area, specific specifications and mitigation shall be written to cover the work, and the fencing may be entered during the necessary construction activity, then the fencing shall be replaced after the activity is completed for the day.

The construction protection shall remain in place until the project is completed, including landscape activities. Landscape activities shall have specifications that protect the trees during the landscape activities.

Any bare soil around protected trees should be covered with a 4-inch layer of mulch consisting of ground-up tree parts.

If the protected trees appear to show signs of yellowing leaves, dead leaves, or other abnormal appearance, contact the project arborist for inspection and mitigation.

Long Term Landscape Maintenance Plan and Specifications

General

This plan and specifications are intended to promote the optimum landscape growth and lifespan. Individual tree planting in specific sites in the parking lot are intended to provide a large shade canopy over time covering 50% or greater of the parking lot. The border and natural screening plantings are overplanted and intended to fill the space initially, and have the weaker trees removed over time, to create the space and site resources necessary for the remaining trees. Trees initially will be planted on approximate 10 foot centers, with the long term spacing to be approximately 20 foot centers. As trees are thinned, they may be transplanted or removed, as best suited to the remaining trees on the site.

These trees shall be pruned to establish a central leader, to provide the best structure by managing size relationships between parent and subordinate trunk and branches, and to encourage growth into a large shade canopy. These trees shall not be topped or rounded over. Trees may have competing leaders headed back to promote the strong central leader necessary to eliminate co-dominant stems and weak branching.

Design Intent

The trees planted around the perimeter and alongside the sidewalk or street are intended to replicate natural areas and to screen the project and adjacent properties. The native oaks shall be more tightly spaced at planting and thinned over time to promote the growth of the final or climax trees on the site. The thinning for spacing shall be performed as the trees get larger and their crowns begin to overlap. When the desired tree crowns are being impacted by an adjacent tree, the adjacent tree should either be pruned or removed, to provide the optimum screening while enhancing the desired tree growth. Pruning shall retain a dominant central leader and for decurrent tree structures, remove competing leaders, and maintain the appropriate size relationships between parent and subordinate trunk and branches.

Pruning Small Trees

Branches are to be pruned by either reduction, thinning, or raising cuts to achieve the appropriate clearance over the area. The smallest diameter branches should be removed, working from the branch tips towards the center, removing none to minimal interior foliage inside the final outward branch cut. Trees shall be cleaned to remove dead branches, weakly attached branches, and branches where significant damage has occurred by rubbing, animals, insects, or critical disease. All pruning cuts shall be made in accordance with American National Standards Institute (ANSI) A300 Part 1 Pruning Standards and International Society of Arboriculture (ISA) Best Management Practices for Pruning.

On trees up to six inches in diameter, all dead branches greater than one-half inch diameter shall be removed. All weakly attached branches and potential co-dominant branches shall either be reduced by at least 20% or be removed, as most appropriate for the long term structure of the tree. The weakest or most damaged branch of a pair or group of rubbing branches shall be shortened to avoid rubbing, or removed. All temporary branches along the trunk should be retained and shortened to obtain necessary clearance. When either temporary branches exceed one-inch diameter, or the trunk forms mature bark, the temporary branches should be removed.

Stakes shall be installed as necessary to support a straight growing tree, and reduce crooked growth caused by high wind. The trunk shall be supported at the lowest point to keep the crown supported straight, and the portions of the stake above the tie point cut off to avoid rubbing branches. After the tree becomes firmly rooted, and the stake is no longer necessary to support the tree, the stakes shall be removed.

Depending on the location and site needs, clearance should be performed by pruning the smallest branches inward from the branch tips until the permanent branches are in place. Clearance minimums should be set, for example: 7.5' over sidewalks, 10 feet over parking spaces, and 14.5 feet over truck traffic streets. Clearance pruning shall be carefully performed until the permanent branches are identified. Up to 25% of the total foliage on any tree should be the maximum removed during any planned pruning cycle. Follow-up pruning for structure or clearance on young trees can be performed at any time if pruning small amounts of foliage (up to 10%) and retaining the central leader and branch size relationships.

Pruning Large Trees

Branches are to be pruned by either reduction, thinning, or raising cuts to achieve the appropriate clearance over the area. The smallest diameter branches should be removed, working from the branch tips towards the center, removing none to minimal interior foliage inside the final outward branch cut. Trees shall be cleaned to remove dead branches, weakly attached branches, and branches where significant damage has occurred by rubbing, animals, insects, or critical disease. All pruning cuts shall be made in accordance with American National Standards Institute (ANSI) A300 Part 1 Pruning Standards and International Society of Arboriculture (ISA) Best Management Practices for Pruning.

On trees larger than six inches in diameter, all dead branches greater than one-inch diameter shall be removed. Long heavy branches that are either growing flat or bending down shall have approximately 15% of the end weight reduced, accomplished by a combination of pruning the downward growing branches, shortening long tips, and thinning endweights. If any structural issues are observed by the climber working in the tree, they shall notify the property manager immediately to discuss the tree's needs.

Depending on the location and site needs, clearance should be performed by pruning the smallest branches inward from the branch tips until the permanent branches are in place. Clearance minimums should be set, for example: 7.5' over sidewalks, 10 feet over parking spaces, and 14.5 feet over truck traffic streets. Clearance pruning shall be carefully performed until the permanent branches are identified. Up to 25% of the total foliage on any tree should be the maximum removed during any planned pruning cycle.

Any special site issues for utility clearance or conflicts with other objects shall be managed by early pruning to direct growth away from the target lines, overhead lights, flags, or buildings.

Thinning of Dense Planting

Many landscape plantings and natural landscape areas are over-planted by installing a greater number of plants at closer spacing than optimum for the full-sized plants. Over time, plants will grow into each other, the crowns will conflict, and the spacing will need to be corrected. Correct spacing is obtained by removing the least desirable plants to meet the final spacing target, within reasonable tolerances.

If conflicting plants are all healthy, it won't matter which plants are removed to achieve the spacing distances. Spaced thinning should be performed before the foliar crowns are intertwined or overlapping. The thinning may be performed over two or three cycles as the trees grow over time, depending on the density and desired final spacing.

The trees initially will be planted on approximate 10 foot centers, with the long term spacing to be approximately 20 foot centers. The healthiest and best specimens should be retained on site. As trees are thinned, they may be transplanted or removed, as best suits the remaining trees on the site.

Appendix D

Avoiding Tree Damage During Construction

Edited from the ISA's tree protection guidelines

As cities and suburbs expand, wooded lands are being developed into commercial and residential sites. Homes are constructed in the midst of trees to take advantage of the aesthetic and environmental value of the wooded lots. Wooded properties can be worth as much as 20 percent more than those without trees, and people value the opportunity to live among trees.

Unfortunately, the processes involved with construction can be deadly to nearby trees. Unless the damage is extreme, the trees may not die immediately but could decline over several years. With this delay in symptom development, you may not associate the loss of the tree with the construction.

It is possible to preserve trees on building sites if the right measures are taken. The most important step is to hire a professional arborist during the planning stage. An arborist can help you decide which trees can be saved and can work with the builder to protect the trees throughout each construction phase.

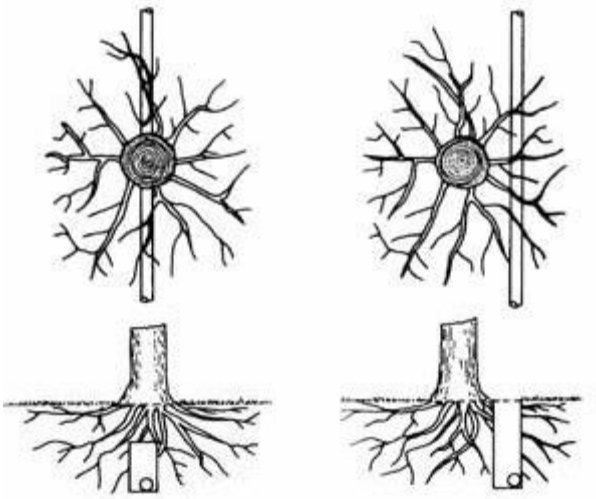
How Trees Are Damaged During Construction

Physical Injury to Trunk and Crown. Construction equipment can injure the aboveground portion of a tree by breaking branches, tearing the bark, and wounding the trunk. These injuries are permanent and, if extensive, can be fatal.

Cutting of Roots. The digging and trenching that are necessary to construct a house and install underground utilities will likely sever a portion of the roots of many trees in the area. It is easy to appreciate the potential for damage if you understand where roots grow. The roots of a tree are found mostly in the upper 6 to 24 inches of the soil. In a mature tree, the roots extend far from the trunk. In fact, roots typically are found growing a distance of one to three times the height of the tree. The amount of damage a tree can suffer from root loss depends, in part, on how close to the tree the cut is made. Severing one major root can cause the loss of 5 to 20 percent of the root system.

The roots of a tree extend far from the trunk and are found mostly in the upper 6 to 12 inches of soil.

Another problem that may result from root loss caused by digging and trenching is that the potential for the trees to fall over is increased. The roots play a critical role in anchoring a tree. If the major support roots are cut on one side of a tree, the tree may fall or blow over.



Less damage is done to tree roots if utilities are tunneled under a tree (right, top and bottom) rather than across the roots (left, top and bottom).

Less damage is done to tree roots if utilities are tunneled under a tree rather than across the roots.

Soil Compaction. An ideal soil for root growth and development is about 50 percent pore space. These pores—the spaces between soil particles—are filled with water and air. The heavy equipment used in construction compacts the soil and can dramatically reduce the amount of pore space. This compaction not only inhibits root growth and penetration but also decreases oxygen in the soil that is essential to the growth and function of the roots, and water infiltration.

Smothering Roots by Adding Soil. Most people are surprised to learn that 90 percent of the fine roots that absorb water and minerals are in the upper 6 to 12 inches of soil. Roots require space, air, and water. Roots grow best where these requirements are met, which is usually near the soil surface. Piling soil over the root system or increasing the grade smothers the roots. It takes only a few inches of added soil to kill a sensitive mature tree.

Exposure to the Elements. Trees in a forest grow as a community, protecting each other from the elements. The trees grow tall, with long, straight trunks and high canopies. Removing neighboring trees or opening the shared canopies of trees during construction exposes the remaining trees to sunlight and wind. The higher levels of sunlight may cause sunscald on the trunks and branches. Also, the remaining trees are more prone to breaking from wind or ice loading.

Getting Advice

Hire a professional arborist in the early planning stage. Many of the trees on your property may be saved if the proper steps are taken. Allow the arborist to meet with you and your building contractor.

Your arborist can assess the trees on your property, determine which are healthy and structurally sound, and suggest measures to preserve and protect them.

One of the first decisions is determining which trees are to be preserved and which should be removed. You must consider the species, size, maturity, location, and condition of each tree. The largest, most mature trees are not always the best choices to preserve. Younger, more vigorous trees usually can survive and adapt to the stresses of construction better. Try to maintain diversity of species and ages. Your arborist can advise you about which trees are more sensitive to compaction, grade changes, and root damage.

Planning

Your arborist and builder should work together in planning the construction. The builder may need to be educated regarding the value of the trees on your property and the importance of saving them. Few builders are aware of the way trees' roots grow and what must be done to protect them.

Sometimes small changes in the placement or design of your house can make a great difference in whether a critical tree will survive. An alternative plan may be more friendly to the root system. For example, bridging over the roots may substitute for a conventional walkway. Because trenching near a tree for utility installation can be damaging, tunneling under the root system may be a good option.

Erecting Barriers

Because our ability to repair construction damage to trees is limited, it is vital that trees be protected from injury. The single most important action you can take is to set up construction fences around all of the trees that are to remain. The fences should be placed as far out from the trunks of the trees as possible. As a general guideline, allow 1 foot of space from the trunk for each inch of trunk diameter. The intent is not merely to protect the aboveground portions of the trees but also the root systems. Remember that the root systems extend much farther than the drip lines of the trees.

Instruct construction personnel to keep the fenced area clear of building materials, waste, excess soil, and equipment. No digging, trenching, or other soil disturbance such as driving vehicles and equipment over the soil should be allowed in the fenced area.

Protective fences should be erected as far out from the trunks as possible in order to protect the root system prior to the commencement of any site work, including grading, demolition, and grubbing.

Limiting Access

If at all possible, it is best to allow only one access route on and off the property. All contractors must be instructed where they are permitted to drive and park their vehicles. The construction access drive should be the route for utility wires; underground water, sewer, or storm drain lines; roadways; or the driveway.

Protective fences should be erected as far out from the trunks as possible in order to protect the root systems.

Specify storage areas for equipment, soil, and construction materials. Limit areas for burning (if permitted), cement wash-out pits, and construction work zones. These areas should be away from protected trees.

Specifications

Specifications are to be put in writing. All of the measures intended to protect your trees must be written into the construction specifications. The written specifications should detail exactly what can and cannot be done to and around the trees. Each subcontractor must be made aware of the barriers, limitations, and specified work zones. It is a good idea to post signs as a reminder.

Fines and penalties for violations should be built into the specifications. Not too surprisingly, subcontractors are much more likely to adhere to the tree preservation clauses if their profit is at stake. The severity of the fines should be proportional to the potential damage to the trees and should increase for multiple infractions.

Maintaining Good Communications

It is important to work together as a team. You may share clear objectives with your arborist and your builder, but one subcontractor can destroy your prudent efforts. Construction damage to trees is often irreversible.

Visit the site at least once a day if possible. Your vigilance will pay off as workers learn to take your wishes seriously. Take photos at every stage of construction. If any infraction of the specifications does occur, it will be important to prove liability.

Final Stages

It is not unusual to go to great lengths to preserve trees during construction, only to have them injured during landscaping. Installing irrigation systems and roto-tilling planting beds are two ways the root systems of trees can be damaged. Remember also that small increases in grade (as little as 2 to 6 inches) that place additional soil over the roots can be devastating to your trees. ANSI A300

Standards Part 5 states that tree protection shall be in place for the landscape phase of the site development. Landscape tree protection may be different than other construction process tree protection, and a conference with the landscape contractor should be held prior to the commencement of the landscape work. Careful planning and communicating with landscape designers and contractors is just as important as avoiding tree damage during construction.

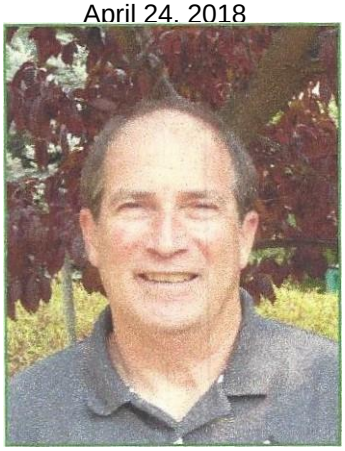
Post-Construction Tree Maintenance

Your trees may require several years to adjust to the injury and environmental changes that occur during construction. The better construction impacts are avoided, the less construction stress the trees will experience. Stressed trees are more prone to health problems such as disease and insect infestations. Talk to your arborist about continued maintenance for your trees. Continue to monitor your trees, and have them periodically evaluated for declining health or safety hazards.

Despite the best intentions and most stringent tree preservation measures, your trees still might be injured from the construction process. Your arborist can suggest remedial treatments to help reduce stress and improve the growing conditions around your trees. In addition, the International Society of Arboriculture offers a companion to this brochure titled “Treatment of Trees Damaged by Construction”.

California Tree and Landscape Consulting, Inc.

GORDON MANN



EDUCATION AND QUALIFICATIONS

1977	Bachelor of Science, Forestry, University of Illinois, Champaign.
1982 - 1985	Horticulture Courses, College of San Mateo, San Mateo.
1984	Certified as an Arborist, WE-0151A, by the International Society of Arboriculture (ISA).
2004	Certified as a Municipal Specialist, WE-0151AM, by the ISA.
2011	Registered Consulting Arborist, #480, by the American Society of Consulting Arborists (ASCA).
2003	Graduate of the ASCA Consulting Academy.
2006	Certified as an Urban Forester, #127, by the California Urban Forests Council (CaUFC).
2011	TRACE Tree Risk Assessment Certified, continued as an ISA Qualified Tree Risk Assessor (T.R.A.Q.).

PROFESSIONAL EXPERIENCE

2016 – Present CALIFORNIA TREE AND LANDSCAPE CONSULTING, INC (CalTLC). President and Consulting Arborist.
Auburn. Mr. Mann provides consultation to private and public clients in health and structure analysis, inventories, management planning for the care of trees, tree appraisal, risk assessment and management, and urban forest management plans.

1986 - Present MANN MADE RESOURCES. Owner and Consulting Arborist. Auburn.
Mr. Mann provides consultation in municipal tree and risk management, public administration, and developing and marketing tree conservation products.

2015 – 2017 CITY OF RANCHO CORDOVA, CA. Contract City Arborist.
Mr. Mann serves as the City's first arborist, developing the tree planting and tree maintenance programs, performing tree inspections, updating ordinances, providing public education, and creating a management plan,

1984 – 2007 CITY OF REDWOOD CITY, CA. City Arborist, Arborist, and Public Works Superintendent.
Mr. Mann developed the Tree Preservation and Sidewalk Repair Program, supervised and managed the tree maintenance program, performed inspections and administered the Tree Preservation Ordinance. Additionally, he oversaw the following Public Works programs: Streets, Sidewalk, Traffic Signals and Streetlights, Parking Meters, Signs and Markings, and Trees.

1982 – 1984 CITY OF SAN MATEO, CA. Tree Maintenance Supervisor.
For the City of San Mateo, Mr. Mann provided supervision and management of the tree maintenance program, and inspection and administration of the Heritage Tree Ordinance.

1977 – 1982 VILLAGE OF BROOKFIELD, IL. Village Forester.
Mr. Mann provided inspection of tree contractors, tree inspections, managed the response to Dutch Elm Disease. He developed an in-house urban forestry program with leadworker, supervision, and management duties to complement the contract program.

1979 - Present INTERNATIONAL SOCIETY OF ARBORICULTURE. Member.

- Board of Directors (2015 - Present)
- True Professional of Arboriculture Award (2011); In recognition of material and substantial contribution to the progress of arboriculture and having given unselfishly to support arboriculture.

1982 - Present WESTERN CHAPTER ISA (WCISA). Member.

- Chairman of the Student Committee (2014 - 2017)
- Member of the Certification Committee (2007 - Present)

- Chairman of the Municipal Committee (2009 - 2014) • Award of Merit (2016) In recognition of outstanding meritorious service in advancing the principles, ideals and practices of arboriculture.
- Annual Conference Chair (2012)
- Certification Proctor (2010 – Present)
- President (1992 - 1993)
- Award of Achievement and President's Award (1990)

1985 - Present CALIFORNIA URBAN FORESTS COUNCIL (CaUFC). Member; Board Member (2010 - Present)

1985 - Present SOCIETY OF MUNICIPAL ARBORISTS (SMA). Member. e Legacy Project of the Year (2015) o In recognition of outstanding meritorious service in advancing the principles, ideals and practices of arboriculture.

- Board Member (2005 - 2007)

2001 - Present AMERICAN SOCIETY OF CONSULTING ARBORISTS.
Member. e Board of Directors (2006 - 2013)
• President (2012)

2001 - Present CAL FIRE. Advisory Position.
• Chairman of the California Urban Forestry Advisory Committee (2014 - 2017)

2007 – Present AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI): A300 TREE MAINTENANCE STANDARDS
COMMITTEE. SMA Representative and Alternate.

- Alternative Representative for SMA (2004 - 2007; 2012 - Present)
- Representative for SMA (2007 - 2012)

2007 - Present SACRAMENTO TREE FOUNDATION. Member and Employee.

- Co-chair/member of the Technical Advisory Committee (2012 - Present)
- Urban Forest Services Director (2007 - 2009) e Facilitator of the Regional Ordinance Committee (2007 - 2009)
- 1988 - 1994 TREE CLIMBING COMPETITION.
  - Chairman for Northern California (1988 - 1992)
  - Chairperson for International (1991 - 1994)

PUBLICA TIONS AND LECTURES

Mr. Mann has authored numerous articles in newsletters and magazines such as Western Arborist, Arborist News, City Trees, Tree Care Industry Association, Utility Arborists Association, CityTrees, and Arborists Online, covering a range of topics on Urban Forestry, Tree Care, and Tree Management. He has developed and led the training for several programs with the California Arborist Association. Additionally, Mr. Mann regularly presents at numerous professional association meetings on urban tree management topics.

Assumptions and Limiting Conditions

1. Consultant assumes that any legal description provided to Consultant is correct and that title to property is good and marketable. Consultant assumes no responsibility for legal matters. Consultant assumes all property appraised or evaluated is free and clear, and is under responsible ownership and competent management.
2. Consultant assumes that the property and its use do not violate applicable codes, ordinances, statutes or regulations.

3. Although Consultant has taken care to obtain all information from reliable sources and to verify the data insofar as possible, Consultant does not guarantee and is not responsible for the accuracy of information provided by others.

4. Client may not require Consultant to testify or attend court by reason of any report unless mutually satisfactory contractual arrangements are made, including payment of an additional fee for such Services as described in the Consulting Arborist Agreement.

5. Unless otherwise required by law, possession of this report does not imply right of publication or use for any purpose by any person other than the person to whom it is addressed, without the prior express written consent of the Consultant.

6. Unless otherwise required by law, no part of this report shall be conveyed by any person, including the Client, the public through advertising, public relations, news, sales or other media without the Consultant‘s prior express written consent.

7. This report and any values expressed herein represent the opinion of the Consultant, and the Consultant’s fee is in no way contingent upon the reporting of a specific value, a stipulated result, the occurrence of a subsequent event or upon any finding to be reported.

8. Sketches, drawings and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys. The reproduction of any information generated by architects, engineers or other consultants and any sketches, drawings or photographs is for the express purpose of coordination and ease of reference only. Inclusion of such information on any drawings or other documents does not constitute a representation by Consultant as to the sufficiency or accuracy of the information.

9. Unless otherwise agreed, (1) information contained in this report covers only the items examined and reflects the condition of those items at the time of inspection; and (2) the inspection is limited to visual examination of accessible items without dissection, excavation, probing or coring. Consultant makes no warranty or guarantee, express or implied that the problems or deficiencies of the plans or property in question may not arise in the future.

10. Loss or alteration of any part of this Agreement invalidates the entire report.

Certificate of Performance

I, Gordon Mann, certify that:

I have personally inspected the trees and site referred to in this report, and have stated my findings accurately. The extent of the inspection is stated in the attached report under Assignment;

I have no current or prospective interest in the vegetation, or the property that is the subject of this report and have no personal interest or bias with respect to the parties involved;

The analysis, opinions and conclusions stated herein are my own and are based on current scientific procedures and facts;

My analysis, opinions, and conclusions were developed, and this report has been prepared according to commonly accepted arboricultural practices;

No one provided significant professional assistance to me, except as indicated within the report;

My compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client, or any other party, nor upon the results of the assignment, the attainment of stipulated results, or the occurrence of any subsequent events.

I further certify that I am a member in good standing of the International Society of Arboriculture (ISA) and an ISA Certified Arborist and Municipal Specialist. I am also a Registered Consulting Arborist member in good standing of the American Society of Consulting Arborists. I have been involved in the practice of arboriculture and the care and study of trees for over 39 years.

Signed:

Gordon Mann
Date: March 21, 2018

A.2 - CNDDB Inventory Results, Existing Site

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Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Placerville (3812067))
 AND County IS (El Dorado)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Arctostaphylos nissenana Nissenan manzanita	PDERI040V0	None	None	G1	S1	1B.2
Ardea alba great egret	ABNGA04040	None	None	G5	S4	
Central Valley Drainage Hardhead/Squawfish Stream Central Valley Drainage Hardhead/Squawfish Stream	CARA2443CA	None	None	GNR	SNR	
Clarkia biloba ssp. brandegeeae Brandegee's clarkia	PDONA05053	None	None	G4G5T4	S4	4.2
Cosumnoperla hypocrena Cosumnes stripetail	IIPLE23020	None	None	G2	S2	
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Erethizon dorsatum North American porcupine	AMAFJ01010	None	None	G5	S3	
Horkelia parryi Parry's horkelia	PDROS0W0C0	None	None	G2	S2	1B.2
Lasionycteris noctivagans silver-haired bat	AMACC02010	None	None	G5	S3S4	
Packera layneae Layne's ragwort	PDAST8H1V0	Threatened	Rare	G2	S2	1B.2
Pekania pennanti fisher - West Coast DPS	AMAJF01021	None	Candidate Threatened	G5T2T3Q	S2S3	SSC
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S2	
Viburnum ellipticum oval-leaved viburnum	PDCPR07080	None	None	G4G5	S3?	2B.3

Record Count: 13

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A.3 - CNPS Inventory Results, Existing Site

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CNPS California Native Plant Society

Plant List

Inventory of Rare and Endangered Plants

1 matches found. Click on scientific name for details

Search Criteria

California Rare Plant Rank is one of [1A, 1B, 2A, 2B], FESA is one of [Endangered, Threatened, Candidate], CESA is one of [Endangered, Threatened, Rare], Found in El Dorado County, Found in Quad 3812067

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Remove Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank	Photo
Packera layneae	Layne's ragwort	Asteraceae	perennial herb	Apr-Aug	1B.2	S2	G2	 2011 Steven Perry

Suggested Citation

California Native Plant Society, Rare Plant Program. 2018. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 17 January 2018].

Search the Inventory
Simple Search
Advanced Search
Glossary

Information
About the Inventory
About the Rare Plant Program
CNPS Home Page
About CNPS
Join CNPS

Contributors
The Calflora Database
The California Lichen Society
California Natural Diversity Database
The Jepson Flora Project
The Consortium of California Herbaria
CalPhotos

Questions and Comments
rareplants@cnps.org

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A.4 - USFWS Inventory Results, Existing Site

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IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

El Dorado County, California

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.

The following species are potentially affected by activities in this location:

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/321	Threatened

Flowering Plants

NAME	STATUS
Layne's Butterweed Senecio layneae No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4062	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see maps of where birders and the general public have sighted birds in and around your project area, visit E-bird tools such as the E-bird data mapping tool (search for the name of a bird on your list to see specific locations where that bird has been reported to occur within your project area over a certain timeframe) and the E-bird Explore Data Tool (perform a query to see a list of all birds sighted in your county or region and within a certain timeframe). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Allen's Hummingbird *Selasphorus sasin* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Black Swift *Cypseloides niger* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8878	Breeds Jun 15 to Sep 10
Black-chinned Sparrow *Spizella atrogularis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9447	Breeds Apr 15 to Jul 31
Burrowing Owl *Athene cunicularia* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9737	Breeds Mar 15 to Aug 31
California Thrasher *Toxostoma redivivum* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Jul 31
Clark's Grebe *Aechmophorus clarkii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Dec 31

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Lawrence's Goldfinch Carduelis lawrencei — Breeds Mar 20 to Sep 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Lewis's Woodpecker Melanerpes lewis — Breeds Apr 20 to Sep 30
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9408

Long-billed Curlew Numenius americanus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/5511

Marbled Godwit Limosa fedoa — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9481

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Rufous Hummingbird selasphorus rufus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8002

Short-billed Dowitcher Limnodromus griseus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9480

Tricolored Blackbird Agelaius tricolor — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

Whimbrel Numenius phaeopus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9483

White Headed Woodpecker Picoides albolarvatus — Breeds May 1 to Aug 15
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9411

Willet Tringa semipalmata — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Yellow-billed Magpie Pica nuttalli — Breeds Apr 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9726

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in your project's counties during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

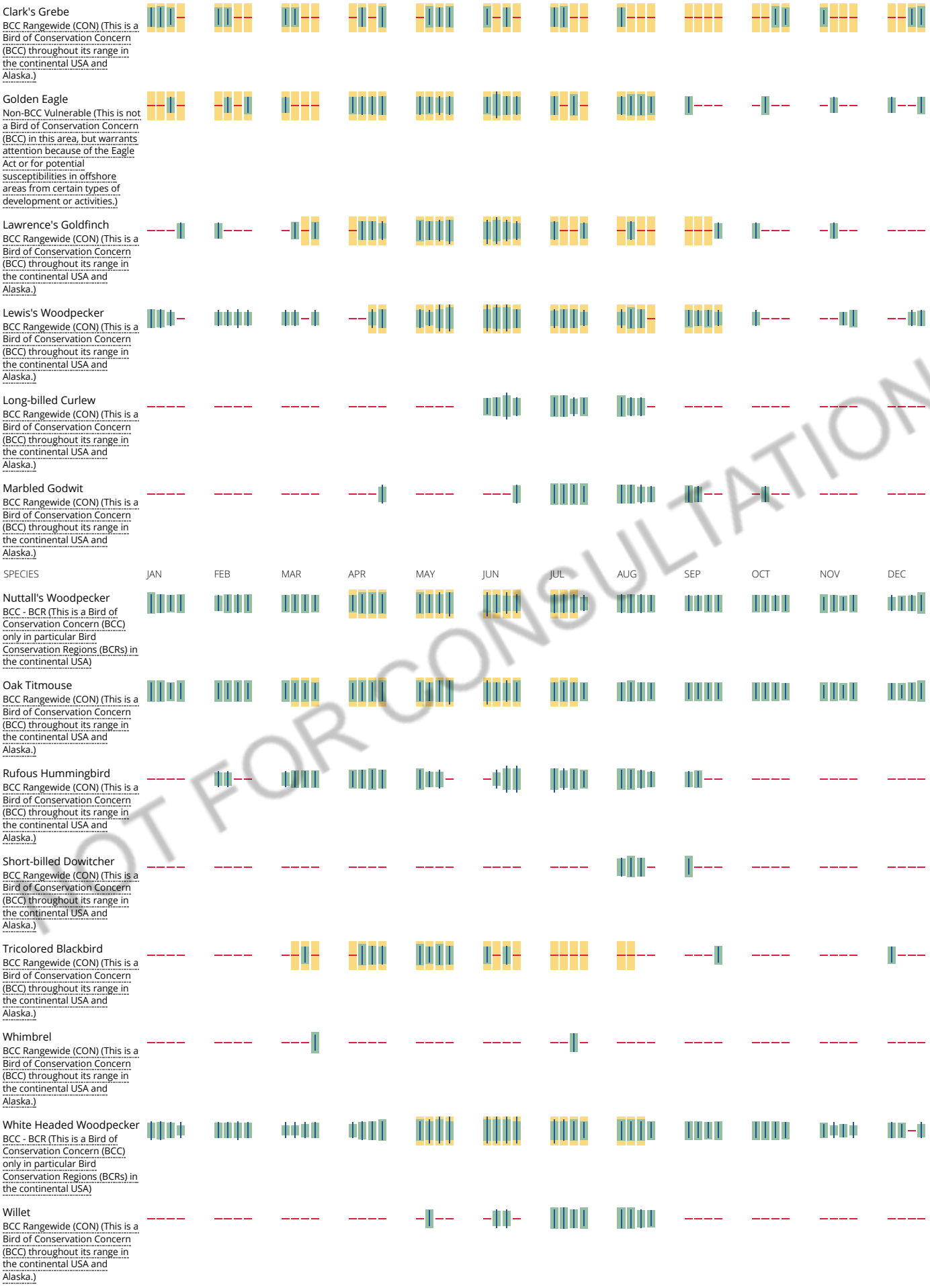
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the counties of your project area. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information.



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the counties which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the E-bird Explore Data Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird entry on your migratory bird species list indicates a breeding season, it is probable that the bird breeds in your project's counties at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the BGEPA should such impacts occur.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

A.5 - CNDDB Inventory Results, Temporary Site

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Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Folsom SE (3812151))
 AND County IS (El Dorado)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Candidate Endangered	G2G3	S1S2	SSC
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Oncorhynchus mykiss irideus pop. 11 steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	G5T2Q	S2	
Sagittaria sanfordii Sanford's arrowhead	PMALI040Q0	None	None	G3	S3	1B.2

Record Count: 4

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A.6 - USFWS Inventory Results, Temporary Site

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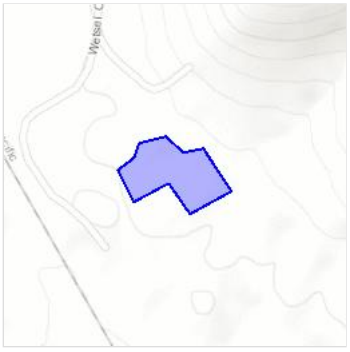
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

El Dorado County, California



Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.

The following species are potentially affected by activities in this location:

Reptiles

NAME	STATUS
Giant Garter Snake Thamnophis gigas No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander Ambystoma californiense There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp Branchinecta lynchi There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp Lepidurus packardi There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2246	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see maps of where birders and the general public have sighted birds in and around your project area, visit E-bird tools such as the E-bird data mapping tool (search for the name of a bird on your list to see specific locations where that bird has been reported to occur within your project area over a certain timeframe) and the E-bird Explore Data Tool (perform a query to see a list of all birds sighted in your county or region and within a certain timeframe). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Allen's Hummingbird Selasphorus sasin This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15

Bald Eagle Haliaeetus leucocephalus — Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1626

Black Swift Cypseloides niger — Breeds Jun 15 to Sep 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8878

Black-chinned Sparrow Spizella atrogularis — Breeds Apr 15 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9447

Burrowing Owl Athene cunicularia — Breeds Mar 15 to Aug 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9737

California Thrasher Toxostoma redivivum — Breeds Jan 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Clark's Grebe Aechmophorus clarkii — Breeds Jan 1 to Dec 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Lawrence's Goldfinch Carduelis lawrencei — Breeds Mar 20 to Sep 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Lewis's Woodpecker Melanerpes lewis — Breeds Apr 20 to Sep 30
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9408

Long-billed Curlew Numenius americanus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/5511

Marbled Godwit Limosa fedoa — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9481

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Rufous Hummingbird selasphorus rufus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8002

Short-billed Dowitcher Limnodromus griseus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9480

Tricolored Blackbird Agelaius tricolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3910	Breeds Mar 15 to Aug 10
Whimbrel Numenius phaeopus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9483	Breeds elsewhere
White Headed Woodpecker Picoides albolarvatus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9411	Breeds May 1 to Aug 15
Willet Tringa semipalmata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wrentit Chamaea fasciata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10
Yellow-billed Magpie Pica nuttalli This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9726	Breeds Apr 1 to Jul 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in your project's counties during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the counties of your project area. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

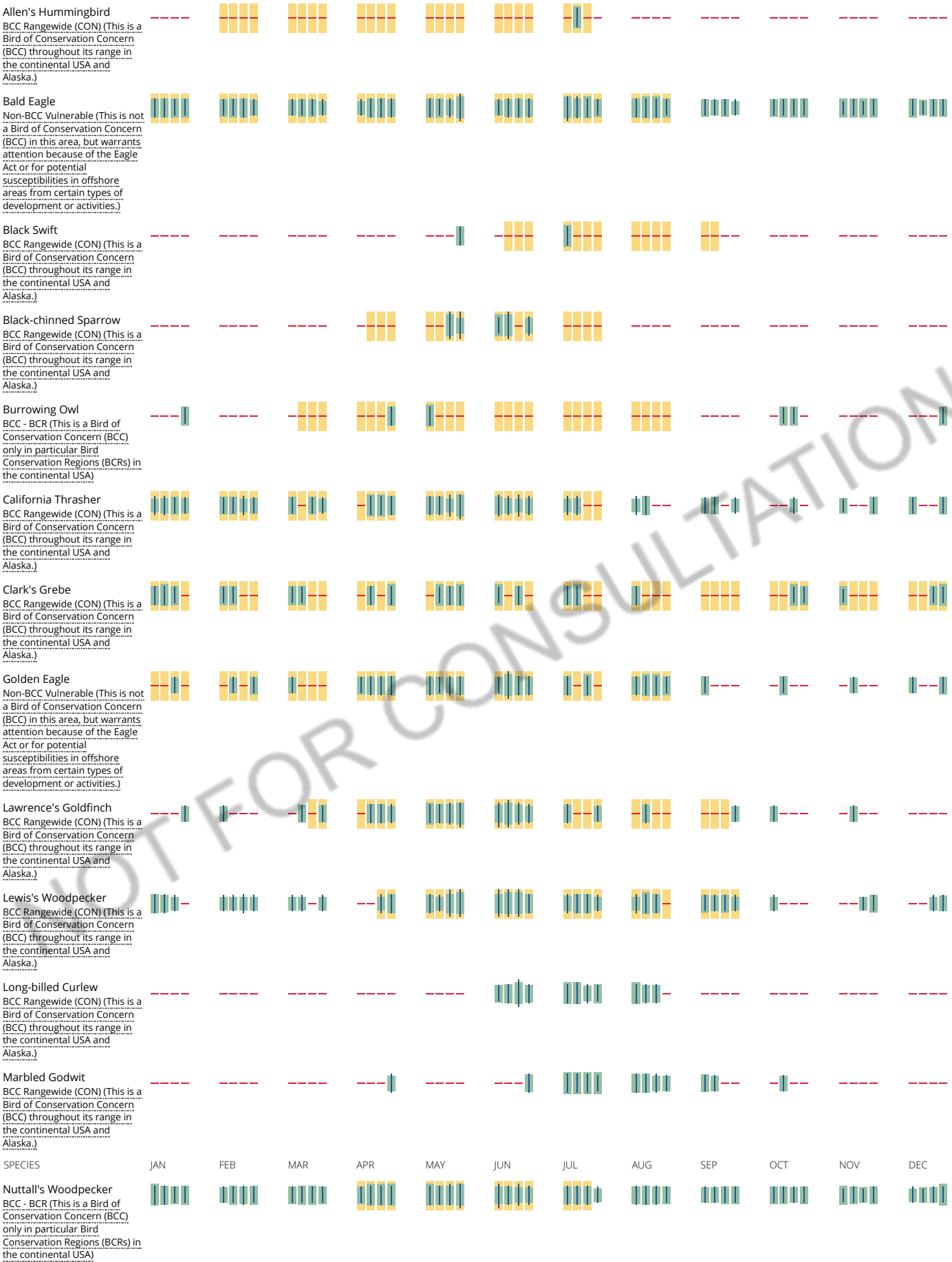
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

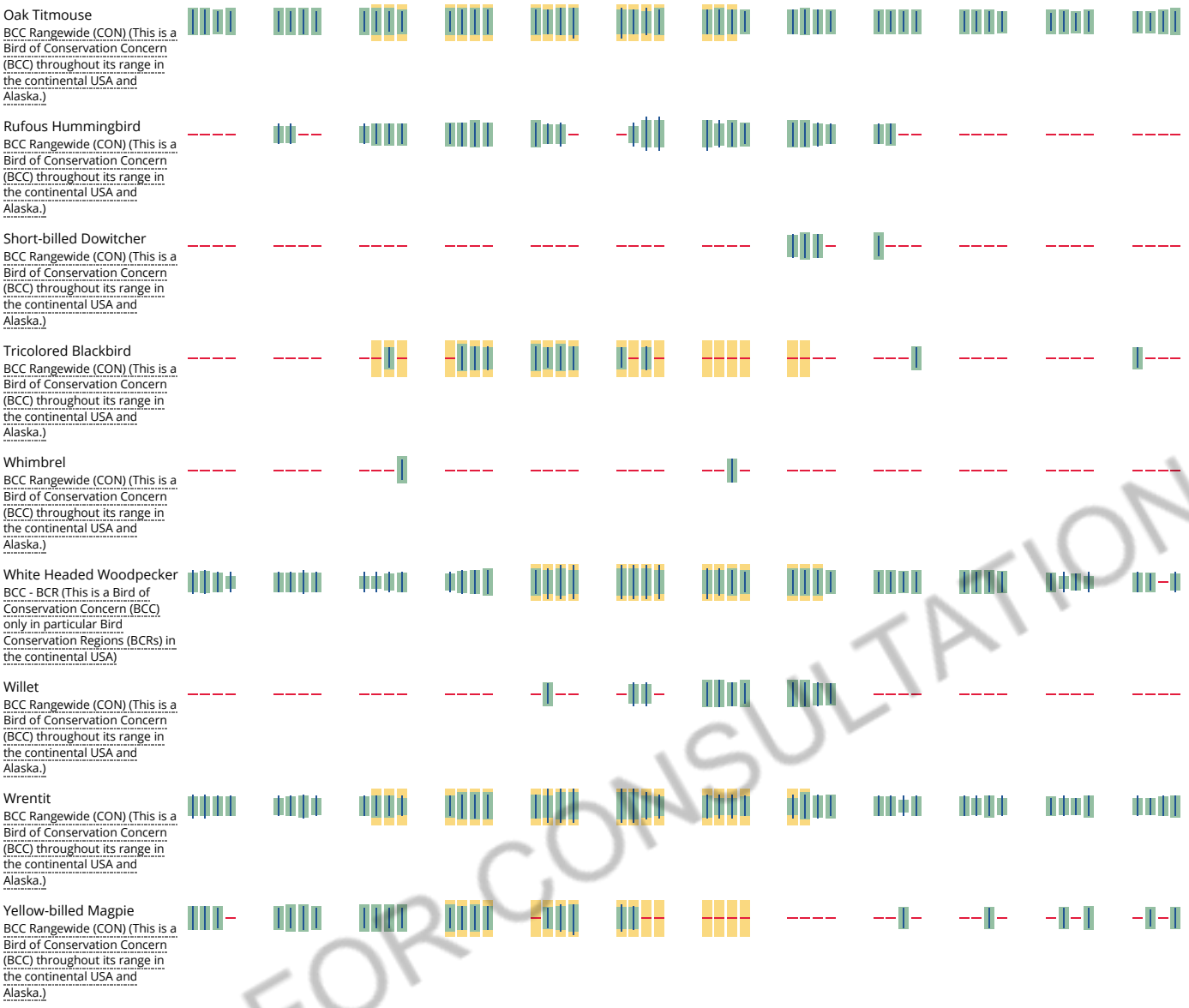
No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information.

■ probability of presence ■ breeding season | survey effort – no data

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC





Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the counties which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the E-bird Explore Data Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird entry on your migratory bird species list indicates a breeding season, it is probable that the bird breeds in your project's counties at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the BGEPA should such impacts occur.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

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The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

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A.7 - CNPS Inventory Results, Temporary Site

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CNPS California Native Plant Society

Plant List

Inventory of Rare and Endangered Plants

1 matches found. Click on scientific name for details

Search Criteria

Found in El Dorado County, Found in Quad 3812151

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Remove Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank	Photo
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	1B.2	S3	G3	 2007 Wendy Fisher

Suggested Citation

California Native Plant Society, Rare Plant Program. 2018. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 30 May 2018].

Search the Inventory
Simple Search
Advanced Search
Glossary

Information
About the Inventory
About the Rare Plant Program
CNPS Home Page
About CNPS
Join CNPS

Contributors
The Calflora Database
The California Lichen Society
California Natural Diversity Database
The Jepson Flora Project
The Consortium of California Herbaria
CalPhotos

Questions and Comments
rareplants@cnps.org

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Appendix B: Species Tables

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Table 1: Special-status Plant Species Potentially Occurring within the Project

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
Packera Layneae Layne's ragwort	—	—	1B.2	Serpentinite or gabbroic, rocky habitat Can be found in chaparral or cismontane woodland areas.	**Unlikely to Occur:** no suitable habitat is present within the project.	No
Arctostaphylos nissenana Nissenan manzanita	—	—	1B.2	Rocky habitats; closed-cone coniferous forest or chaparral areas	**Unlikely to Occur:** no suitable habitat is present within the project.	No
Horkelia parryi Parry's horkelia	—	—	1B.2	Chaparral, cismontane woodland	**Unlikely to Occur:** no suitable habitat is present within the project.	No
Viburnum ellipticum oval-leaved viburnum	—	—	2B.3	Chaparral, cismontane woodland, lower montane coniferous forest	**Unlikely to Occur:** no suitable habitat is present within the project.	No
Sagittaria sanfordii Sanford's arrowhead	—	—	1B.2	Marshes and swamps	**Unlikely to Occur:** no suitable habitat is present within the project.	No
Arctostaphylos nissenana Nissenan manzanita	—	—	1B.2	Closed-cone coniferous forest, chaparral	**Unlikely to Occur:** no suitable habitat is present within the project.	No
Clarkia biloba ssp. *brandegeeae* Brandegee's clarkia	—	—	4.2	Chaparral, cismontane woodland, lower montane coniferous forest	**Unlikely to Occur:** no suitable habitat is present within the project.	No
Eryngium pinnatisectum Tuolumne button-celery	—	—	1B.2	Vernal pools, cismontane woodland, lower montane coniferous forest	**Unlikely to Occur:** no suitable habitat is present within the project.	No

Table 2: Special-status Wildlife Species Potentially Occurring within the Project

Scientific Name Common Name	Status		Habitat Description[3]	Potential to Occur and Rationale	Included in Impact Analysis
	USFWS[1]	CDFW[2]			
Reptiles					
Emys marmorata western pond turtle	—	SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6,000 ft elevation.	**Unlikely to Occur:** no suitable habitat is present within the project.	No
Thamnophis gigas giant gartersnake	FT	ST	Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals and irrigation ditches.	**Unlikely to Occur:** no suitable habitat is present within the project.	No
Birds					
Ardea alba great egret	—	—	Rookery sites located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.	**Unlikely to Occur:** no suitable habitat is present within the project.	No
Riparia riparia bank swallow	—	ST	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert.	**Unlikely to Occur:** no suitable habitat is present within the project.	No
Agelaius tricolor tricolored blackbird	—	SSC	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California.	**Unlikely to Occur:** no suitable habitat is present within the project.	No
Ammodramus savannarum grasshopper sparrow	—	SSC	Dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes	**Unlikely to Occur:** no suitable habitat is present within the project.	No
Athene cunicularia burrowing owl	—	SSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation.	**Unlikely to Occur:** no suitable habitat is present within the project.	No
Buteo regalis ferruginous hawk	—	—	Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon and juniper habitats.	**Unlikely to Occur:** no suitable habitat is present within the project.	No
Buteo swainsoni Swainson's hawk	—	—	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees.	**Unlikely to Occur:** no suitable habitat is present within the project.	No

Table 2 (cont.): Special-status Wildlife Species Potentially Occurring within the Project

Scientific Name Common Name	Status		Habitat Description[3]	Potential to Occur and Rationale	Included in Impact Analysis
	USFWS[1]	CDFW[2]			
Crustaceans					
Branchinecta lynchi vernal pool fairy shrimp	FT	—	Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in astatic rain-filled pools.	**Unlikely to Occur:** no suitable habitat is present within the project.	No
Fish					
Oncorhynchus mykiss irideus pop. 11 steelhead—Central Valley DPS	FT	—	Populations in the Sacramento and San Joaquin rivers and their tributaries.	**Unlikely to Occur:** no suitable habitat is present within the project.	No
Mammals					
Erethizon dorsatum North American porcupine	—	—	Forested habitats in the Sierra Nevada, Cascade, and Coast ranges, with scattered observations from forested areas in the Transverse Ranges.	**Unlikely to Occur:** no suitable habitat is present within the project.	No
Lasionycteris noctivagans silver-haired bat	—	—	Primarily a coastal and montane forest dweller, feeding over streams, ponds and open brushy areas.	**Unlikely to Occur:** no suitable habitat is present within the project.	No
Pekania pennanti fisher—West Coast DPS	—	SSC	Intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure.	**Unlikely to Occur:** no suitable habitat is present within the project.	No
Insects					
Cosumnoperla hypocrena Cosumnes Spring Stonefly	—	—	Found in intermittent streams on western slope of central Sierra Nevada foothills in American and Cosumnes river basins.	**Unlikely to Occur:** no suitable habitat is present within the project.	No

Table 2 (cont.): Special-status Wildlife Species Potentially Occurring within the Project

Scientific Name Common Name	Status		Habitat Description[3]	Potential to Occur and Rationale	Included in Impact Analysis
	USFWS[1]	CDFW[2]			
Code Designations					
[1] Federal Status: 2015 USFWS Listing			**[2] State Status: 2015 CDFW Listing**		
ESU = Evolutionary Significant Unit is a distinctive population. **FE** = Listed as endangered under the FESA. **FT** = Listed as threatened under the FESA. **FC** = Candidate for listing (threatened or endangered) under FESA. **FD** = Delisted in accordance with the FESA. **FPD** = Federally Proposed to be Delisted. **MBTA** = protected by the Migratory Bird Treaty Act **—** = Not federally listed			**SE** = Listed as endangered under the CESA. **ST** = Listed as threatened under the CESA. **SSC** = Species of Special Concern as identified by the CDFW. **FP** = Listed as fully protected under FGC. **CFG** = FGC =protected by FGC 3503.5 **CR** = Rare in California. **—** = Not state listed		
[3] **Habitat description**: Habitat description adapted from CNDDB (CDFW 2015a).					