CH2M HILL
2485 Natomas Park Drive
Suite 600
Sacramento, CA 95833-2937
Tel 916.920.0300
Fax 916.920.8463

CH2MHILL

September 17, 2010

Mr. Pierre Martinez
Siting Project Manager
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

Subject: Oakley Generating Station Project (09-AFC-4)
DRAFT ECCC HCP-NCCP Planning Survey Report

Dear Mr. Martinez:

Attached please find three (3) hardcopies of the DRAFT East Contra Costa County HCP-NCCP Planning Survey Report for the Oakley Generating Station (09-AFC-4). We are filing this interim draft document because it contains information that may be helpful to California Energy Commission Staff in preparing the Staff Assessment. We expect to file an updated version of this document after accepting additional comment from the technical working group that administers the East Contra Costa County HCP-NCCP on September 22 and after further discussions with the East Contra Costa County Habitat Conservancy Staff regarding Best Management Practices and other implementation measures that will be applied during construction.

If you have any questions about this matter, please contact me at (916) 286-0278.

Sincerely,

CH2M HILL

Douglas M. Davy, Ph.D.
AFC Project Manager

cc: POS List
Project File

East Contra Costa County Habitat Conservation Plan Natural Community Conservation Plan

City of Brentwood
City of Clayton
City of Oakley
City of Pittsburg
Contra Costa County
ECCC Habitat Conservancy

Template prepared by the
ECCC Habitat Conservancy

651 Pine Street, North Wing, 4th Floor
Martinez, CA 94533-0095
Phone: 925/335-1290
Fax: 925/335-1299
www.cocohcp.org

City/County of Oakley/Contra Costa County Application Form and Planning Survey Report to Comply with and Receive Permit Coverage under the East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan

Project Applicant Information:

Project Name: Oakley Generating Station

Project Applicant's Company/Organization: Contra Costa Generating Station, LLC

Contact's Name: Greg Lamberg

Contact's Phone: 916-799-9463

Contact's Email: Greg.Lamberg@Radback.com

Mailing Address: Greg Lamberg
Contra Costa Generating Station, LLC
145 Town & Country Drive, Suite 107
Danville, CA 94526

Project Description:

Lead Planner: Krystal Hinojosa, East Contra Costa County Habitat Conservancy
Contra Costa County, Department of Conservation and Development

Project Location: 6000 Bridgehead Road, Oakley, California

Project APN(s) #: The Oakley Generating Station (OGS or project) site has recently been created from the nearly 500-acre property that is owned by the I.E. du Pont de Nemours Company (DuPont). The DuPont property is a one-owner property with multiple Assessor's Parcel Numbers. DuPont has recently obtained a lot line adjustment to create "Parcel A," the 21.95-acre project site, and two separate neighboring parcels. The larger 210-acre parcel from which the OGS parcel will be created is APN #037-020-012.

Number of Parcels/Units: The project parcel is a single parcel of 21.95 acres. The electrical transmission line route is composed of many individual easement parcels that make up a corridor that is 2.4-miles in length with an 80-foot-wide Pacific Gas and Electric Company (PG&E) easement/right-of-way (ROW). The sanitary sewer force main oute is also comprised of many individual parcels that make up a corridor that is 0.44 miles in length and that will be constructed in Bridgehead Road and Main Street. OGS will also make temporary use of DuPont property for construction laydown and parking and for soil stockpiling.

Size of Parcel(s): The project parcel is a 21.95-acre site located within the boundary of an existing 210-acre site owned by DuPont. The portion of the DuPont site on which the power plant would be constructed is within an area called the "Western Development Area" and is currently used as a vineyard. An existing 1.6-acre conservation area, which includes a 0.62-acre mitigation wetland (Wetland E), is

adjacent to the western property line at Bridgehead Road. The paved construction laydown area is approximately 6.5 acres, the unpaved construction laydown area is approximately 13.1 acres, the unpaved soil stockpile area is approximately 5.0 acres, and the paved stockpile area is approximately 2.2 acres. The transmission line ROW and pull sites total approximately 24.9 acres and the sanitary sewer force main ROW totals approximately 1.6 acres.

Brief Project Description: The OGS (formerly the Contra Costa Generating Station) is a combined-cycle, natural gas-fired power plant owned by Contra Costa Generating Station, LLC. The project will consist of two natural gas-fired combustion turbines with heat recovery steam generators, a steam turbine, air-cooled condenser, and ancillary equipment. Power from the facility will be transmitted 2.4 miles to PG&E's Contra Costa Substation on a new 230-kV single-circuit transmission line. Construction of this line will follow an existing PG&E transmission line ROW and will consist of replacing existing steel-lattice towers with tubular steel poles and reconductoring the line. It will also be necessary to construct a new sanitary sewer force main 0.44 miles long, from the project tie-in location on Bridgehead Road to the gravity main located in Main Street. Construction of this line would be within the Bridgehead Road and Main Street ROWs. The proposed construction worker parking and laydown area for the project will be located east of the proposed project parcel, and soil from the project will be temporarily stockpiled in three areas north of the project parcel.

The project site is located at the intersection of Bridgehead Road and Wilbur Avenue, approximately 3,000 feet south of the San Joaquin River in the City of Oakley, Contra Costa County. The project site is bounded on the west by the PG&E Antioch Terminal, a large natural gas transmission hub; on the north by formerly industrial property belonging to DuPont that has been abandoned; on the east by DuPont's titanium dioxide disposal area; and to the south by a vineyard and the Atchison, Topeka, and Santa Fe railroad.

The City of Oakley is presently revising its zoning regulations to match the 2020 General Plan. Under this general plan, the project parcel is designated for "Utility Energy" land use. The corresponding zoning designation for this land use is also called Utility Energy. The project parcel is currently zoned "specific plan"; however, by the City of Oakley. Because a specific plan has not been proposed for the area and because the project parcel has never been specifically zoned by the City of Oakley, which became a city in 1999, the zoning of "heavy industrial" may also apply as a holdover zoning from the County. The remainder of the DuPont site is classified as "business park" or "light industrial." Surrounding land uses consist of industrial, vacant industrial, commercial, and agricultural uses.

Biologist Information:

Biological/Environmental Firm: CH2M HILL

Lead Contact: Rick Crowe

Contact's Phone: 916-296-5525 Fax: 916-991-2842

Contact's Email: rcrowe@ch2m.com

Mailing Address: Rick Crowe
2485 Natomas Park Drive, Suite 600
Sacramento, CA 95833-2937

East Contra Costa County HCP/NCCP Planning Survey Report for Oakley Generating Station Participating Special Entity

I. Project Overview

Project proponent: Contra Costa Generating Station, LLC

Project Name: Oakley Generating Station

Application Submittal Date: September 2010 (Partial Updates to June 2010 Version)

Jurisdiction:
☐ Contra Costa County
☒ Participating Special Entity[1]
☐ City of Oakley
☐ City of Pittsburg
☐ City of Clayton
☐ City of Brentwood

Check appropriate Development Fee Zone(s):
☒ Zone I
☒ Zone IV
☐ Zone II
☐ Zone III

See Figure 9-1 of the Final HCP/NCCP for a generalized development fee zone map. Detailed development fee zone maps by jurisdiction are available from the jurisdiction or at www.cocohcp.org.

Total Parcel Acreage:
21.95-acre project parcel
20.2-acre construction laydown area
7.2-acre stockpile area
21.5-acre transmission line ROW
3.4-acre pull site area
1.6-acre force main ROW

Acreage of land to be permanently disturbed[2]: 17.1 acres (21.95-acre project parcel, minus the 1.6-acre permanent wetland conservation easement and 0.5 acres of

[1] *Participating Special Entities* are organizations not subject to the authority of a local jurisdiction. Such organizations may include school districts, water districts, irrigation districts, transportation agencies, local park districts, geologic hazard abatement districts, or other utilities or special districts that own land or provide public services.

[2] *Acreage of land permanently disturbed* is broadly defined in the HCP/NCCP to include all areas removed from an undeveloped or habitat-providing state and includes land in the same parcel or project that is not developed, graded, physically altered, or directly affected in any way but is isolated from natural areas by the covered activity. Unless such undeveloped land is dedicated to the Preserve System or is a deed-restricted creek setback, the development fee will apply. The development fees were calculated with the assumption that all undeveloped areas within a parcel (e.g., fragments of undisturbed open space within a residential development) would be charged a fee; the fee per acre would have been higher had this assumption not been made. See Chapter 9 of the HCP/NCCP for details.

non-native woodland that will not be disturbed and the 2.8 acres of urban area)

Acreage of land to be temporarily disturbed[3]:

TOTAL: 37.8-acres

13.0 acres for construction laydown (20.2-acres total minus 0.7 acres protected by ESA fencing and 6.5-acres of urban area)
5.0 acres for stockpile areas (7.2 acres total minus 2.2 acres of urban area)
17.1 acres for transmission line easement/ROW (21.5 acres total minus 4.2 acres urban minus 0.2-acres of riparian habitat protected by ESA fencing)
2.7 acres for transmission pull sites (3.4-acres total minus 0.7-acres of urban area)

Project Description

Concisely and completely describe the project and location. Reference and attach a project vicinity map **(Figure 1)** and the project site plans **(Figure 2)** for the proposed project. Include all activities proposed for site, including those disturbing ground (roads, bridges, outfalls, runoff treatment facilities, parks, trails, etc.) to ensure the entire project is covered by the HCP/NCCP permit. Also include proposed construction dates. Reference a City/County application number for the project where additional project details can be found.

City/County Application Number:

Anticipated Construction Date:

Second Quarter 2011 – Third Quarter 2013

Project Description:

Permanent Impacts

Project Site

The project is located in Oakley, eastern Contra Costa County, California at 6000 Bridgehead Road. The project site is located in the northwestern quarter of Section 22, Township 2 North, Range 2 East, Mount Diablo Base and Meridian. Figure 1a is a map of the project vicinity. The proposed project parcel is located on a former DuPont manufacturing facility site (Figure 1b). Figure 2.1 shows the facility site plan and Figures 2.2a and 2.2b show typical elevation views of the project.

The project parcel is in an area of active vineyard agriculture with a central cluster of oak trees. The project parcel is bordered to the north by a narrow row of mature eucalyptus trees that separates the project parcel from the rest of the former DuPont manufacturing site with intermittent strips of ruderal grassland surrounding the parcel. The western ”panhandle” of the project parcel consists of a small conserved wetland, called Wetland E (discussed below). The project parcel consists of 21.95 contiguous acres, 13.9 acres of which are in agricultural

[3] *Acreage of land temporarily disturbed* is broadly defined in the HCP/NCCP as any impact on vegetation or habitat that does not result in permanent habitat removal (i.e. vegetation can eventually recover).

production as a vineyard, 1.6 acres of which are the conservation easement for Wetland E, 3.0 acres of ruderal cover, 0.6 acres of non-native woodland, and 2.8 acres of paved surface (i.e., urban classification) (Table I.1). Based on conversations with East Contra Costa County HCP/NCCP staff, the 21.95 acres would be considered a permanent impact under the HCP/NCCP, with the exception of the 1.6-acre Wetland E conservation easement. As described in Chapter 9 of the ECCCHC Habitat Conservation Plan and Natural Community Conservation Plan (ECCCHC, 2006), areas categorized as urban are exempted from mitigation fees. Based on conversations with ECCCHC staff, it is assumed areas protected by ESA fencing and silt fencing are also exempted from mitigation fees. Therefore, the total permanent impact that would require mitigation would be 17.0 acres (Table I.1). The entire project parcel would be located within Development Fee Zone I.

Vegetation at the project parcel is vineyard agriculture consisting primarily of wine grapes (*Vitus vinifera*). A cluster of six interior live oak trees (*Quercus wislizeni*) is also present within the vineyard. Removal of the six interior live oaks will be coordinated with the City of Oakley's tree removal permitting process. The remainder of the project parcel (2.98 acres) is vegetated with ruderal species such as ripgut brome (*Bromus diandrus*), redstem stork's bill (*Erodium cicutarium*), miniature lupine (*Lupinus bicolor*), and common deerweed (*Lotus scoparius*). A row of Tasmanian blue gum (*Eucalyptus globulus*) lines the northern edge of the parcel and encompasses 0.6 acres. Approximately 25 feet of Eucalyptus trees within the row will be removed to incorporate a roadway between the parcels on either side. The removal of the Eucalyptus will be coordinated with the City of Oakley's tree removal permitting process. ESA fencing and silt fencing will be installed to protect the remaining Eucalyptus trees (Figure 3a).

An isolated wetland area, constructed in 1996 as mitigation for offsite impacts related to the Lauritzen Yacht Harbor, is adjacent to and part of the western end of the project parcel. The entire conservation easement area is 1.6 acres in size. The wetland receives runoff from the adjacent vineyard and from portions of the DuPont property. Common tule (*Schoenoplectus acutus*) and common cattail (*Typha latifolia*) are the dominant species present in the open water portion of the 0.62-acre wetland, while willows (*Salix lasiolepis*) dominate the narrow slope between the edge of water and top of the bank. The wetland easement is isolated from other wetlands, and hydrology is supported by direct precipitation, sheetflow runoff from Bridgehead Road, and surface water inputs from the project parcel.

This wetland, known as Wetland E, was delineated as part of a wetland delineation study of the entire DuPont property in 2006 (DuPont Engineering, 2007; 2008). The U.S. Army Corps of Engineers (USACE) declared this wetland to be non-jurisdictional because it lacks a connection to jurisdictional waters (is an isolated wetland) (Dady, 2008). This wetland, however, is under perpetual conservation easement. The Applicant has designed the OGS stormwater drainage system as a system of bioswales, in accordance with the Contra Costa County C.3 drainage design requirements and in consultation with the California Department of Fish and Game (CDFG), to ensure that existing drainage from the project parcel is not altered in a way that impairs this wetland.

Table I.1.
Permanent Project Impacts by Habitat Cover Category

Habitat Cover	Total Area (Acres)	Area Inside ESA Fencing (Acres)	Mitigation Acres Required	Fee Zone
Non-Native Woodland	0.6	0.5	0.1	I
Ruderal	3.0	0	3.0	I
Urban	2.8	0	0	I
Vineyard	13.9	0	13.9	I
Wetland E Conservation Easement	1.6	1.6	0	
Total (Fee Zone I)	**21.9**	**0.5**	**17.0**	

Temporary Impacts

Construction Laydown Area

The proposed construction laydown area and stockpile areas are also located on the former DuPont manufacturing facility site (Figure 1b). The proposed construction worker parking and laydown area is located east of the proposed project site and consists of two distinct sections. One of these is DuPont's former titanium dioxide disposal site, which is approximately 13 acres and consists of open ruderal grasslands. The second section consists of approximately 6.5 acres that is entirely paved. A row of mature Eucalyptus trees is between the two sections, with several additional trees growing atop a berm near the eastern edge of the laydown area. ESA and silt fencing will be installed around the row of Eucalyptus trees and the group of trees growing in the ruderal grasslands (Figure 3a). Therefore, no tree removal is expected as part of the preparation of the construction laydown areas.

Assuming the paved areas and the areas protected by ESA fencing do not require mitigation, the mitigation required for the total temporary construction laydown impact would be 12.2 acres (Table I.2). The entire construction laydown parcel would be located within Development Fee Zone I and it is assumed the disturbance and recovery would be approximately 4 years.

Table I.2.
Temporary Construction Laydown Area Impacts by Habitat Cover Category

Habitat Cover	Total Area (Acres)	Area Inside ESA Fencing (Acres)	Mitigation Acres Required	Years of Disturbance (minimum is 2 years per guidelines)	Fee Zone
Non-Native Woodland	0.61	0.57	0.04	4	I
Ruderal	13.1	0.1	13.0	4	I
Urban	6.5	0	0	**4**	I
Total (Fee Zone I)	**20.2**	**0.7**	**13.0**	**4**	

Soil Stockpile Areas

Soil from the project parcel will be temporarily stockpiled in three areas north of the project (Figure 3a). Stockpile area 1 (2.22 acres) will be located on an existing paved surface. Stockpile areas 2 (2.68 acres) and 3 (2.30 acres) are located further north in ruderal grassland on either side of a row of beach sheoak (*Casuarina equisetifolia*). No tree removal is expected as part of the preparation of the soil stockpile areas. Stockpile area 2 is south of the beach sheoak and is 84 feet north of Wetland F (0.37-acre). Stockpile area 3 is north of the beach sheoak and is 46 feet south of Wetland D (0.38-acre). Vegetation in both areas is composed of such species as rat-tail fescue (*Vulpia myuros*), redmaids (*Calandrinia* sp.), and old-man-in-the-Spring (*Senecio vulgaris*). Wetlands F and D are both classified as palustrine emergent and are outside the project parcel, the construction laydown area, and the soil stockpile areas.

Assuming the paved areas do not require mitigation, the mitigation required for the temporary stockpile impacts would be 5.0 acres (Table I.3). The entire construction laydown parcel would be located within Development Fee Zone I and it is assumed the disturbance and recovery would take place in approximately 2 years.

Table I.3
Temporary Soil Stockpile Impacts by Habitat Cover Category

Habitat Cover	Total Area (Acres)	Area Inside ESA Fencing (Acres)	Mitigation Acres Required	Years of Disturbance (minimum is 2 years per guidelines)	Fee Zone
Ruderal	5.0	0	5.0	2	I
Urban	2.2	0	0	2	I
Total (Fee Zone I)	**7.2**	**0**	**5.0**	**2**	

Electrical Transmission Line Route

The proposed 230-kV transmission line will connect OGS to the existing PG&E Contra Costa Substation in Antioch, approximately 2.4 miles southwest of the project parcel. Within the City of Oakley, the transmission line crosses areas zoned for utility and commercial uses. Within the City of Antioch, the alignment is within areas zoned as Planned Development Districts (P-D) associated with the State Route 4 Industrial Frontage Focus Area (LSA, 2003). The 230-kV transmission line would require the replacement of 18 existing steel-lattice towers with 18 tubular steel poles. The existing ROW for the transmission line is 80 feet wide. The current 60-kV towers are located in a variety of land uses, including active industrial and commercial properties (categorized as urban), vacant lots composed of ruderal grassland (categorized as ruderal), active vineyard agricultural (categorized as vineyard), landscaped residential (categorized as ruderal), and inactive non-native ruderal grassland habitat (categorized as ruderal) (Figures 3a - 3l). Six trees were indentified to be removed from the Oakley Generating Station transmission line upgrade route. Two of the 6 trees indentified (Interior live oak) are protected under the Oakley Municipal Code, and the removal of these trees will be coordinated with the City of Oakley's tree removal permitting process. The remaining 4 trees include 3 almond and 1 ponderosa pine. The upgrade will be completed and the ROW will be restored within two years. The transmission tower locations are presented in Figures 3a – 3l and Figure 4.

Assuming the concrete areas and areas protected by ESA and silt fencing do not require mitigation, the mitigation required for the temporary transmission line corridor impacts would be 17.1 acres (Table I.4). Approximately 5.2 acres are located in Development Fee Zone I. The remaining 11.9 acres will be located within Development Fee Zone IV. It is assumed the disturbance and recovery would take place in approximately 3 years.

Table I.4.
Temporary Transmission Line Corridor Impacts by Habitat Cover Category

Habitat Cover	Total Area (Acres)	Area Inside ESA Fencing (Acres)	Mitigation Acres Required	Years of Disturbance (minimum is 2 years per guidelines)	Fee Zone
Ruderal	2.9	0	2.9	3	I
Urban	2.8	0	0	3	I
Vineyard	2.3	0	2.3	3	I
Riparian	0	0	0	3	I
Total (Fee Zone I)	**8.0**	**0**	**5.2**	**3**	
Ruderal	9.2	0	9.2	3	IV
Urban	1.4	0	0	3	IV
Vineyard	2.7	0	2.7	3	IV
Riparian	0.2	0.2	0	3	IV
Total (Fee Zone IV)	**13.5**	**0.2**	**11.9**	**3**	

Transmission Line Pull Sites

The proposed transmission line pull and tensioning sites are located in a variety of land uses, including active industrial and commercial properties (categorized as urban), vacant lots composed of ruderal grassland (categorized as ruderal), active vineyard agricultural (categorized as vineyard), and inactive non-native ruderal grassland habitat (categorized as ruderal) (Figures 3b, 3f, and 3l). The pull site access road through the vineyards on Figure 3f was classified as an urban land use because the road is currently used as an agricultural access road.

Assuming the urban areas do not require mitigation, the mitigation required for the temporary transmission line pull site impacts would be 7.2 acres (Table I.5). Approximately 5.2 acres are

located in Development Fee Zone I. The remaining 2.0 acres will be located within Development Fee Zone IV. It is assumed the disturbance and recovery would take place in approximately 3 years.

Table I.5.
Temporary Transmission Line Pull Site Impacts by Habitat Cover Category

Habitat Cover	Total Area (Acres)	Area Inside ESA Fencing (Acres)	Mitigation Acres Required	Years of Disturbance (minimum is 2 years per guidelines)	Fee Zone
Ruderal	0.5	0	0.5	3	I
Urban	0.7	0	0	3	I
Vineyard	0.2	0	0.2	2	I
Total (Fee Zone I)	**1.4**	**0**	**0.7**	**2**	
Ruderal	2.0	0	2.0	2	IV
Total (Fee Zone IV)	**2.0**	**0**	**2.0**	**2**	

Sanitary Sewer Force Main Corridor

A portion of the existing sanitary sewer extending from the project tie-in location on Bridgehead Road to the gravity main located in Main Street would have insufficient capacity for the project's sanitary sewer discharge. For this reason, OGS will construct a dedicated project sanitary sewer force main from the project site to an interconnection point in Main Street (Figure 3a-3d). The new sanitary sewer will extend south from an interconnection point in Bridgehead Road for 0.33 miles to Main Street. It will then turn east and run for 0.11 miles to the interconnection point with Ironhouse Sanitary District's gravity main. The existing ROW assumed in the Habitat Survey for the force main is 30 feet wide. The existing force main is located under the paved road surface.

There are thin strips of ruderal vegetation along the sides of the road that consist of ripgut brome (*Bromus diandrus*), yellow star thistle (*Centaurea solstitialis*), Italian ryegrass (*Lolium perenne ssp. Multiflorum*), spiny sowthistle (*Sonchus asper*), telegraph weed (*Heterotheca grandiflora*), and wild oats (*Avnea sp*.). Additionally, there is evidence of routine herbicide spraying of the roadsides, presumably for weed control and fire suppression. In addition to the ruderal ground vegetation several tree species were observed growing along the shoulders of Bridgehead Road, including interior live oak (*Quercus wislizeni*), sweet almond (*Prunus dulcis*), tree of heaven (*Ailanthus altissima*), and black walnut (*Juglans nigra*). The majority of these trees are less than 20 feet in height and there is evidence of routine tree trimming near the existing power lines that run adjacent to Bridgehead Road. No tree removal is expected as part of the force main installation.

It is assumed the force main will primarily impact areas within the existing paved roadway and that the ruderal areas impacted (less than 1.0 acre) are marginal areas already impacted by routine roadside maintenance. Furthermore, the upgrade will be completed and the ROW will be restored within one year. The pavement will be restored in Bridgehead Road and Main Street when construction is complete. Therefore, it is concluded that no mitigation will be required for the installation of the force main (Table I.6).

Table I.6
Temporary Force Main Impacts by Habitat Cover Category

Habitat Cover	Total Area (Acres)	Area Inside ESA Fencing (Acres)	Mitigation Acres Required	Fee Zone
Urban	1.6	0	0	I
Total (Fee Zone I)	**1.6**	**0**	**0**	**I**

II. Existing Conditions and Impacts

Land Cover Types

In completing the checklist in Table 1, click in the appropriate fields and type the relevant information. Please calculate acres of terrestrial land cover types to nearest tenth of an acre. Calculate the areas of all jurisdictional wetlands and waters land cover types to the nearest hundredth of an acre. If the field is not applicable, please enter N/A. The sum of the acreages in the *Acreage of land to be "permanently disturbed" and "temporarily disturbed" by project* column should equal the total impact acreage listed above.

Land cover types and habitat elements identified with an ([a]) in Table 1 require identification and mapping of habitat elements for selected covered wildlife species. In Table 2a and 2b below, check the land cover types and habitat elements found in the project area and describe the results. Insert a map of all land cover types present on-site and other relevant features overlaid on an aerial photo below as Figure 3.

Table 1. Land Cover Types on the Project Site as Determined in the Field and Shown in Figure 3.

Land Cover Type (acres, except where noted)	Impact Acres on the following segments of the Project: Project Site, Laydown Areas, and Soil Stockpile Areas		Impacts on the Electrical Transmission Line Route and Pull Sites	
	Acreage of Land to be "Permanently Disturbed" by Project[b]	Acreage of Land to be "Temporarily Disturbed" by Project[b]	Acreage of Land to be "Permanently Disturbed" by Project[b]	Acreage of Land to be "Temporarily Disturbed" by Project[b]
Grassland[a]				
☐ Annual grassland	NA	NA	NA	NA
☐ Alkali grassland	NA	NA	NA	NA
☒ Ruderal	3.0-acres	18.0-acres	NA	14.6-acres
☐ **Chaparral and scrub**	NA	NA	NA	NA
☐ **Oak savanna[a]**	NA	NA	NA	NA
☐ **Oak woodland**	NA	NA	NA	NA
Jurisdictional wetlands and waters				
☒ Riparian woodland/scrub	NA	NA	NA	0.0-acres (0.2 acres protected by ESA fencing)
☐ Permanent wetland[a]	NA	NA	NA	NA
☐ Seasonal wetland[a]	NA	NA	NA	NA
☐ Alkali wetland[a]	NA	NA	NA	NA
☐ Aquatic (Reservoir/Open Water)[a]	NA	NA	NA	NA
☐ Slough/Channel[a]	NA	NA	NA	NA
☐ Pond[a]	NA	NA	NA	NA
☐ Stream (acres) [a, d]	NA	NA	NA	NA

Land Cover Type (acres, except where noted)	Impact Acres on the following segments of the Project: Project Site, Laydown Areas, and Soil Stockpile Areas		Impacts on the Electrical Transmission Line Route and Pull Sites	
	Acreage of Land to be "Permanently Disturbed" by Project[b]	Acreage of Land to be "Temporarily Disturbed" by Project[b]	Acreage of Land to be "Permanently Disturbed" by Project[b]	Acreage of Land to be "Temporarily Disturbed" by Project[b]
☐ Total stream length (feet) [a, d]	NA	NA	NA	NA
Stream length by width category				
☐ ≤ 25 feet wide	NA	NA	NA	NA
☐ > 25 feet wide	NA	NA	NA	NA
Stream length by type and order[e]				
☐ Perennial	NA	NA	NA	NA
☐ Intermittent	NA	NA	NA	NA
☐ Ephemeral, 3rd or higher order	NA	NA	NA	NA
☐ Ephemeral, 1st or 2nd order	NA	NA	NA	NA
Irrigated agriculture[a]				
☐ Cropland	NA	NA	NA	NA
☐ Pasture	NA	NA	NA	NA
☐ Orchard	NA	NA	NA	NA
☒ Vineyard	13.9-acres	NA	NA	5.2-acres
Other				
☒ Nonnative woodland	0.1-acres	NA	NA	NA
☐ Wind turbines	NA	NA	NA	NA
Developed*				
☒ Urban	2.8-acres	10.3-acres	4.9-acres	4.9-acres
☐ Aqueduct	NA	NA	NA	NA
☐ Turf	NA	NA	NA	NA
☐ Landfill	NA	NA	NA	NA
Uncommon Vegetation Types (subtypes of above land cover types)				
☐ Purple needlegrass grassland	NA	NA	NA	NA
☐ Wildrye grassland	NA	NA	NA	NA
☐ Wildflower fields	NA	NA	NA	NA
☐ Squirreltail grassland	NA	NA	NA	NA
☐ One-sided bluegrass grassland	NA	NA	NA	NA
☐ Serpentine grassland	NA	NA	NA	NA

Land Cover Type (acres, except where noted)	Impact Acres on the following segments of the Project: Project Site, Laydown Areas, and Soil Stockpile Areas		Impacts on the Electrical Transmission Line Route and Pull Sites	
	Acreage of Land to be "Permanently Disturbed" by Project[b]	Acreage of Land to be "Temporarily Disturbed" by Project[b]	Acreage of Land to be "Permanently Disturbed" by Project[b]	Acreage of Land to be "Temporarily Disturbed" by Project[b]
☐ Saltgrass grassland (= alkali grassland)	NA	NA	NA	NA
☐ Alkali sacaton bunchgrass grassland	NA	NA	NA	NA
☐ Other uncommon vegetation types (please describe)	NA			
Uncommon Landscape Features or Habitat Elements				
☐ Rock outcrop	NA	NA	NA	NA
☐ Cave[a]	NA	NA	NA	NA
☐ Springs/seeps	NA	NA	NA	NA
☐ Scalds	NA	NA	NA	NA
☐ Sand deposits	NA	NA	NA	NA
☐ Mines[a]	NA	NA	NA	NA
☐ Buildings (bat roosts) [a]	NA	NA	NA	NA
☒ Potential nest sites (trees or cliffs) [a]	NA	NA	NA	NA
TOTAL (*Developed acre types)	2.8-acres	10.3-acres	4.9-acres	4.9-acres
TOTAL (Acre to be impacted, minus the developed acre types)	17.0-acres	18.0-acres	0.0-acres	19.8-acres

[a] Designates habitat elements that may trigger specific survey requirements and/or best management practices for key covered wildlife species. See Chapter 6 in the HCP/NCCP for details.

[b] See Section 9.3.1 of the HCP/NCCP for a definition of "permanently disturbed" and "temporarily disturbed." In nearly all cases, all land in the subject parcel is considered permanently disturbed.

[c] Dedication of land in lieu of fees must be approved by the local agency and the Implementing Entity before they can be credited toward HCP/NCCP fees. See Section 8.6.7 on page 8-32 of the Plan for details on this provision. Stream setback requirements are described in Conservation Measure 1.7 in Section 6.4.1 and in Table 6-2.

[d] Specific requirements on streams are discussed in detail in the HCP/NCCP. Stream setback requirements pertaining to stream type and order can be found in Table 6-2. Impact fees and boundary determination methods pertaining to stream width can be found in Table 9-5. Restoration/creation requirements in lieu of fees depend on stream type and can be found in Tables 5-16 and 5-17.

[e] See glossary (Appendix A) for definition of stream type and order.

Field-Verified Land Cover Map

Insert field-verified land cover map. The map should contain all land cover types present on-site. The map should be representative of an aerial photo. Identify all pages of the field-verified land cover map as **(Figure 3a). Please attach representative photos of the project site (Figure 3b).**

See attached Figures 3a-3l, Land Cover Survey Maps.

Jurisdictional Wetlands and Waters

Jurisdictional wetlands and waters are defined on pages 1-18 and 1-19 of the Final HCP/NCCP as the following land cover types: permanent wetland, seasonal wetland, alkali wetland, aquatic, pond, slough/channel, and stream. (It should be noted that definitions of these features differ for state and federal jurisdictions.) If you have identified any of these land cover types to be present on the project site in Table 1, complete the section below.

Indicate agency that certified the wetland delineation:

☒ USACE, ☐ RWQCB, or ☐ the ECCC Habitat Conservancy.

☒ Wetland delineation is attached (Jurisdictional Determination)

Provide any additional information on Impacts to Jurisdictional Wetland and Waters below.

Project Parcel

An isolated wetland area, constructed in 1996 as mitigation for offsite impacts related to the Lauritzen Yacht Harbor, is adjacent to and part of the western end of the project parcel. The entire conservation easement area is 1.6 acres in size. The wetland receives runoff from the adjacent vineyard and from portions of the DuPont property. Common tule (*Schoenoplectus acutus*) and common cattail (*Typha latifolia*) are the dominant species present in the open water portion of the 0.62-acre wetland, while willows (*Salix lasiolepis*) dominate the narrow slope between the edge of water and top of the bank. The wetland easement is isolated from other wetlands, and hydrology is supported by direct precipitation, sheetflow runoff from Bridgehead Road, and surface water inputs from the project parcel.

This wetland, known as Wetland E, was delineated as part of a wetland delineation study of the entire DuPont property in 2006 (DuPont Engineering, 2007; DuPont Engineering, 2008). The USACE declared this wetland to be non-jurisdictional because it lacks a connection to jurisdictional waters (is an isolated wetland) (Dady, 2008). This wetland, however, is under perpetual conservation easement. The Applicant has designed the stormwater drainage system as a system of bioswales, in accordance with the Contra Costa County C.3 drainage design requirements and in consultation with CDFG, to ensure that existing drainage from the project parcel is not altered in a way that impairs this wetland.

Transmission Line Route

The transmission line will traverse East Antioch Creek; (see Figure 3j, Land Cover Habitat Survey); however, the nearest tower replacement and removal will take place 120-feet up slope from this feature. East Antioch Creek eventually flows into Lake Alhambra and then into the San Joaquin River. In addition, access to this area will be by an existing paved and earthen walking trail that crosses the wetland via a culvert. It is expected that ESA fencing will be installed to protect the riparian habitat. Therefore, no current plan exists to enhance this access or impact this wetland feature.

Species-Specific Planning Survey Requirements

Based on the land cover types found on-site and identified in Table 1, check the applicable boxes in Table 2a then provide the results of the planning surveys below. In Table 3 check corresponding preconstruction survey or notification requirements that are triggered by the presence of particular landcover types or species habitat elements as identified in Table 2a. The species-specific planning survey requirements are described in more detail in Section 6.4.3 of the HCP/NCCP.

Table 2a. Species-Specific Planning Survey Requirements Triggered by Land Cover Types and Habitat Elements in the project area based on Chapter 6 of the Final HCP/NCCP.

Land Cover Type in the project area?	Species	Habitat Element in the project area?	**Planning Survey Requirement**
☒ Grasslands, oak savanna, agriculture, ruderal	San Joaquin kit fox	Assumed if within modeled range of species	Identify and map potential breeding and denning habitat and potential dens if within modeled range of species (see Appendix D of HCP/NCCP).
	Western burrowing owl	Assumed	Identify and map potential breeding habitat.
☒ Aquatic (ponds, wetlands, streams, slough, channels, & marshes)	Giant garter snake	☒ Aquatic habitat accessible from San Joaquin River	Identify and map potential habitat.
	California tiger salamander	☐ Ponds and wetlands in grassland, oak savanna, oak woodland ☐ Vernal pools ☐ Reservoirs ☐ Small lakes	Identify and map potential breeding habitat. Document habitat quality and features. Provide Implementing Entity with photo-documentation and report.
	California red-legged frog	☒ Slow-moving streams, ponds, and wetlands	Identify and map potential breeding habitat. Document habitat quality and features. Provide Implementing Entity with photo-documentation and report.
☐ Seasonal wetlands	Covered shrimp	☐ Vernal pools ☐ Sandstone rock outcrops ☐ Sandstone depressions	Identify and map potential breeding habitat.

Land Cover Type in the project area?	Species	Habitat Element in the project area?	**Planning Survey Requirement**
Any	Townsend's big-eared bat	☐ Rock formations with caves ☐ Mines ☐ Abandoned buildings outside urban areas	Map and document potential breeding or roosting habitat.
	Swainson's hawk	☒ Potential nest sites (trees within species' range usually below 200')	Inspect large trees for presence of nest sites.
	Golden eagle	☒ Potential nest sites (secluded cliffs with overhanging ledges; large trees)	Document and map potential nests.

[a] Vernal pool fairy shrimp, vernal pool tadpole shrimp, longhorn fairy shrimp, and midvalley fairy shrimp.

Results of Species-Specific Planning Surveys Required in Table 2a

1. Describe the results of the planning survey conducted as required in Table 2a. Planning surveys will assess the location, quantity, and quality of suitable habitat for specified covered wildlife species on the project site. Covered species are assumed to occupy suitable habitat in impact areas and mitigation is based on assumption of take.

Biological Surveys

Biological field surveys of the project parcel, construction laydown areas, stockpile areas, the transmission line route, and the force main were conducted by the following CH2M HILL biologists: Michael Clary on March 4 and April 13, 2009; Dan Williams on April 13, 2009; and Richard Crowe on January 15, February 17, April 22, and August 5, 2010. Botanical surveys of the project parcel, construction laydown areas, stockpile areas, and the transmission line route were performed by consulting botanist Virginia Danes on March 4,' 2009, and by CH2MHILL botanist Russell Huddleston on April 22, 2010.

Biological resources evaluated for project impacts included plant communities, wildlife habitat, wetlands, and special-status species within the temporary and permanent project site and transmission line ROW. Information obtained during the literature review and field surveys was used to determine which special-status species might have the potential to occur within the project parcel and along the transmission line and force main ROWs. Information on species status, habitat preferences, geographic distribution, elevation range, and known locations near the project site was researched before starting the field surveys.

Habitat and plant community surveys were conducted within a 1-mile radius of the proposed project parcel and within 1,000 feet of the proposed single-pole electrical transmission tower footings. Plant community and wildlife habitat assessments were conducted within the survey area to determine whether sensitive habitats occur within or near the project parcel, electrical transmission towers, or within the force main ROW.

San Joaquin Kit Fox

The San Joaquin kit fox is a federally listed endangered species and a California state listed threatened species. The ECCC HCP/NCCP states that San Joaquin kit fox may occur in a variety of habitats, including grasslands, scrublands, vernal pool areas, alkali meadows, and playas, and

in an agricultural matrix of row crops, irrigated pastures, orchards, vineyards, and grazed annual grasslands (U.S. Fish and Wildlife Service [USFWS], 1998). They prefer habitats with loose-textured soils (Grinnell et al., 1937; Hall, 1946; Egoscue, 1962) that are suitable for digging, but they occur on virtually every soil type. Dens are generally located in open areas with grass or grass and scattered brush and seldom occur in areas with thick brush. Preferred sites are relatively flat, well-drained terrain (USFWS, 1998; Roderick and Mathews, 1999). They are seldom found in areas with shallow soils due to high water tables (McCue et al., 1981) or impenetrable bedrock or hardpan layers (O'Farrell and Gilbertson, 1979; O'Farrell et al., 1980). However, kit foxes may occupy soils with a high clay content where they can modify burrows dug by other animals such as ground squirrels (*Spermophilus beecheyi*) (Orloff et al., 1986). In the northern part of its range (including San Joaquin, Alameda, and Contra Costa Counties), where most habitat on the valley floor has been eliminated, kit foxes now occur primarily in foothill grasslands (Swick, 1973; Hall, 1983; USFWS, 1998), valley oak savanna, and alkali grasslands (Bell, 1994). Less frequently, they occur adjacent to and forage in tilled and fallow fields and irrigated row crops (Bell, 1994). Kit foxes will den within small parcels of native habitat that is surrounded by intensively maintained agricultural lands (Knapp, 1978) and is adjacent to dryland farms (Jensen, 1972; Orloff et al., 1986; USFWS, 1998).

The ECCC HCP/NCCP indicates that the project parcel is adjacent to the reported range of this species and is within modeled potential habitat. The nearest reported San Joaquin kit fox siting is 5 miles southwest of the project parcel in non-native annual grassland containing a small drainage (CNDDB, 2009).

No San Joaquin kit foxes were observed on the project site or within the transmission line and force main survey areas; however, potential habitat for this species is present in ruderal grasslands and vineyards in the areas surveyed. A potential burrow was observed in a berm associated with a row of Tasmanian blue gum trees near the eastern edge of the laydown area. Also, numerous large burrows exist within un-landscaped portions of the transmission line ROW. Participation in the HCP and adherence to HCP conservation measures will ensure impacts are avoided and actions are taken to benefit the species.

Western Burrowing Owl

The western burrowing owl is a California state species of special concern. Additionally, it is protected under the Migratory Bird Treaty Act (MBTA) and several CDFG codes, including 3503, 3503.5, and 3513. This species is widespread throughout the western United States but has declined in Contra Costa County and many other areas because of habitat modification, poisoning of its prey, and introduced nest predators. The western burrowing owl is diurnal and usually non-migratory in this portion of its range. This species is known to establish nests within abandoned burrows from ground squirrels and other wildlife. The species can occur in much higher densities near agricultural lands where rodent and insect prey tend to be more abundant. Western burrowing owl conservation is tied to the preservation and management of open agricultural lands, similar to Swainson's hawk habitats.

Two western burrowing owl occurrences are reported in the CNDDB within 1,000 feet of the electrical transmission line corridor (Figure 5). Occurrence #947 is a report from November 2005 of one pair and one adult in open, level grassland with low-lying shrubs, sandy soils, and ruderal vegetation. Occurrence #1210 is a report from June 2006 of two adults in sandy, non-native annual grassland north of a freshwater marsh associated with East Antioch Creek.

No western burrowing owls or burrows were observed by CH2M HILL biological survey staff during field surveys conducted on the project parcel, construction laydown areas, stockpile areas, transmission line or force main ROW; however, the areas in and around the project parcel and transmission line ROW provide suitable western burrowing owl nesting and foraging habitat.

California Red-legged Frog (CRLF)

The CRLF (*Rana aurora draytonii*) is federally listed as threatened and state listed as a species of special concern. The CRLF is the largest native frog in the western United States, ranging from 4

to 13 centimeters long. The abdomen and hind legs of adults are largely red. The back has small black flecks and larger irregular dark blotches; lateral folds are prominent on the back. The CRLF occupies a fairly distinct habitat, combining both specific aquatic and riparian components. Adults need dense, shrubby, or emergent riparian vegetation closely associated with deep (greater than 2-1/3-foot deep), still, or slow-moving water. CRLF breed from November through March with earlier breeding records occurring in southern localities. In areas where frogs have been found in the vicinity and suitable habitat is present, the USFWS advises that suitable habitat accessible to frog populations occurring within five miles should be presumed to be occupied by the species (USFWS, 2010).

The closest occurrence of CRLF is 3.5 miles southwest of the project parcel and transmission line corridor. The only suitable habitat for CRLF is along the transmission line ROW where it intersects East Antioch Creek (see Figure 3j, Land Cover Habitat Survey). This feature flows from a culvert that begins at the transmission line ROW and becomes an open meandering stream with emergent vegetation as it flows north to Lake Alhambra and eventually to the San Joaquin River. Access to this area of the transmission line ROW will be via an existing paved access road that turns into an earthen road.

Giant Garter Snake (GGS)

The giant garter snake (*Thamnophis gigas*), which is federally listed threatened and state listed threatened, inhabits agricultural wetlands and other waterways such as irrigation and drainage canals, sloughs, ponds, small lakes, low gradient streams, and adjacent uplands in the Central Valley. Because of direct loss of natural habitat, the giant garter snake now relies heavily on marginal habitat such as rice fields, agricultural canals, and managed marsh areas. This species is typically absent from larger rivers because of lack of suitable habitat and emergent vegetative cover, and it is absent from wetlands with sand, gravel, or rock substrates. Giant garter snakes feed primarily on small fishes, tadpoles, and frogs. Habitat requirements consist of adequate water during the snake's active season (early-spring through mid-fall) to provide food and cover; emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat during the active season; grassy banks and openings in waterside vegetation for basking; and higher elevation uplands for cover and refuge from flood waters during the snake's dormant season in the winter. They breed from March and April through late July and early September (USFWS, 2004).

The closest occurrence of GGS is on Sherman Island near the northern bank of the San Joaquin River, 1.3 miles north of the project parcel and transmission line corridor. The only suitable habitat for GGS is along the transmission line ROW where it intersects East Antioch Creek (see Figure 3j, Land Cover Habitat Survey). East Antioch Creek flows from a culvert that begins at the transmission line ROW and becomes an open meandering stream with emergent vegetation as it flows north to Lake Alhambra and eventually to the San Joaquin River.

Swainson's hawk

Swainson's hawks generally inhabit a variety of open habitats. In California's Central Valley, suitable primary habitat consists of suitable nest trees and proximity to high-quality foraging habitat. This species nests within riparian forest or in remnant riparian trees, and it forages in agricultural lands such as fallow fields and alfalfa fields (Estep, 1989; Babcock, 1995). Swainson's hawks also use isolated trees near forage habitat. Agricultural patterns and cover types influence suitability of foraging and home-range habitat. Habitat with the highest foraging value includes ruderal fields, fallow fields, grain crops, and alfalfa fields.

The project parcel is near the edge of Swainson's hawk summer range (Zeiner et al., 1998) and is adjacent to areas identified in the ECCC HCP/NCCP as suitable nesting and foraging habitat. As reported in the CNDDB, the nearest Swainson's hawk occurrence (occurrence #1312) was observed 3.7 miles southeast of the project parcel in a eucalyptus tree surrounded by agricultural fields.

The project site contains marginal Swainson's hawk nesting and foraging habitat; however, Swainson's hawk were observed foraging above grasslands near the soil stockpile areas north of the project parcel during field surveys, and large trees are present within the project parcel that could provide suitable nesting habitat. Potential ruderal grassland foraging habitat is also located in the laydown area and at the western end of the transmission line.

Golden Eagle

No known nesting habitat for bald eagles is present within 10 miles of the project parcel; however, these species may forage in the San Joaquin River and may occasionally forage over the project parcel and in nearby open areas. The eucalyptus trees at the site may provide suitable winter roosting habitat. Bald eagles have been reported in the project region through the Audubon Society Christmas Bird Counts (National Audubon Society, Inc., 2009).

Habitat for golden eagles is typically rolling foothills, mountain areas, and desert. Golden eagles need open terrain for hunting and prefer grasslands, deserts, savannah, and early successional stages of forest and shrub habitats. This species prefers to nest in rugged, open habitats with canyons and escarpments and with overhanging ledges and cliffs and large trees used as cover. Golden eagles are reported in the region by the Christmas Bird Counts and the CNDDB. The nearest golden eagle occurrence reported in the CNDDB (occurrence #145) is a nest observed in blue oak savannah and grasslands approximately 9.8 miles southwest of the project parcel in the Diablo Range.

2. Reference and attach the Planning Survey Species Habitat Maps as required in Table 2a (Figure 4).

To Be Completed.

Covered and No-Take Plants

On suitable land cover types, surveys for covered and no-take plants must be conducted using approved CDFG/USFWS methods during the appropriate season to identify any covered or no-take plant species that may occur on the site (see page 6-9 of the Final HCP/NCCP). Based on the land cover types found in the project area and identified in Table 1, check the applicable boxes in Table 2b and provide a summary of survey results as required below. If any no-take plants are found in the project area, the provisions of Conservation Measure 1.11 must be followed (see *Avoidance and Minimization Measures* below).

Table 2b. Covered and No-Take Plant Species, Typical Habitat Conditions, and Typical Blooming Periods

Land Cover Type in the project area?	Plant Species	Covered (C) or No-Take (N)?	Typical Habitat or Physical Conditions, if Known	Typical Blooming Period[a]
☐ Oak savanna	Diablo Helianthella (*Helianthella castanea*)	C	Elevation above 650 feet[b]	Mar–Jun
	Mount Diablo fairy-lantern (*Calochortus pulchellus*)	C	Elevation between 650 and 2,600 feet[b]	Apr–Jun
☐ Oak woodland	Brewer's dwarf flax (*Hesperolinon breweri*)	C		May–Jul
	Diablo Helianthella (*Helianthella castanea*)	C	Elevation above 650 feet[b]	Mar–Jun

Land Cover Type in the project area?	Plant Species	Covered (C) or No-Take (N)?	Typical Habitat or Physical Conditions, if Known	Typical Blooming Period[a]
	Mount Diablo fairy-lantern (*Calochortus pulchellus*)	C	Elevation between 650 and 2,600 feet[b]	Apr–Jun
	Showy madia (*Madia radiata*)	C		Mar–May
☐ Chaparral and scrub	Brewer's dwarf flax (*Hesperolinon breweri*)	C		May–Jul
	Diablo Helianthella (*Helianthella castanea*)	C	Elevation above 650 feet[b]	Mar–Jun
	Mount Diablo buckwheat (*Eriogonum truncatum*)	N		Apr–Sep; uncommonly Nov–Dec.
	Mount Diablo fairy-lantern (*Calochortus pulchellus*)	C	Elevation between 650 and 2,600 feet[b]	Apr–Jun
	Mount Diablo Manzanita (*Arctostaphylos auriculata*)	C	Elevation between 700 and 1,860 feet; restricted to the eastern and northern flanks of Mt. Diablo[b]	Jan–Mar
☐ Alkali grassland	Brittlescale (*Atriplex depressa*)	C	Restricted to soils of the Pescadero or Solano soil series; generally found in southeastern region of plan area[b]	May–Oct
	Caper-fruited tropidocarpum (*Tropidocarpum capparideum)*	N		Mar-Apr
	Contra Costa goldfields (*Lasthenia conjugens*)	N	Generally found in vernal pools	Mar–Jun
	Recurved larkspur (*Delphinium recurvatum*)	C		Mar–Jun
	San Joaquin spearscale (*Atriplex joaquiniana*)	C		Apr-Oct
☐ Alkali wetland	Alkali milkvetch (*Astragalus tener* ssp. *tener*)	N		Mar–Jun
	Brittlescale (*Atriplex depressa*)	C	Restricted to soils of the Pescadero or Solano soil series; generally found in southeastern region of plan area[b]	May–Oct

Land Cover Type in the project area?	Plant Species	Covered (C) or No-Take (N)?	Typical Habitat or Physical Conditions, if Known	Typical Blooming Period[a]
	San Joaquin spearscale (*Atriplex joaquiniana*)	C		Apr–Oct
☐ Annual grassland	Alkali milkvetch (*Astragalus tener* ssp. *tener*)	N		Mar–Jun
	Big tarplant (*Blepharizonia plumosa*)	C	Elevation below 1500 feet[b]	Jul–Oct
	Brewer's dwarf flax (*Hesperolinon breweri*)	C	Restricted to grassland areas within a 500+ buffer from oak woodland and chaparral/scrub[b]	May–Jul
	Contra Costa goldfields (*Lasthenia conjugens*)	N	Generally found in vernal pools	Mar–Jun
	Diamond-petaled poppy (*Eschscholzia rhombipetala*)	N		Mar–Apr
	Large-flowered fiddleneck (*Amsinckia grandiflora*)	N		Apr–May
	Mount Diablo buckwheat (*Eriogonum truncatum*)	N		Apr–Sep; uncommonly Nov–Dec
	Mount Diablo fairy-lantern (*Calochortus pulchellus*)	C	Elevation between 650 and 2,600[b]	Apr–Jun
	Round-leaved filaree (*California macrophylla*)[1]	C		Mar–May
	Showy madia (*Madia radiata*)	C		Mar–May
☐ Seasonal wetland	Adobe navarretia (*Navarretia nigelliformis* ssp. *nigelliformis*)	C	Generally found in vernal pools[b]	Apr–Jun
	Alkali milkvetch (*Astragalus tener* sp. *tener*)	N		Mar–Jun
	Contra Costa goldfields (*Lasthenia conjugens*)	N	Generally found in vernal pools	Mar–Jun

[a] From California Native Plant Society. 2007. *Inventory of Rare and Endangered Plants* (online edition, v7-07d). Sacramento, CA. Species may be identifiable outside of the typical blooming period; a professional botanist shall determine if a covered or no take plant occurs on the project site.

[b] See Species Profiles in Appendix D of the Final HCP/NCCP.

Results of Covered and No-Take Plant Species Planning Surveys Required in Table 2b

Describe the results of the planning survey conducted as required in Table 2b. Describe the methods used to survey the site for all covered and no-take plants, including the dates and times of all survey's conducted (see Tables 3-8 and 6-5 of the HCP/NCCP for covered and no-take plants). In order to complete all the necessary covered and no-take plant surveys, both spring and fall surveys are required, check species survey requirements below.

If any covered or no-take plants were found, include the following information in the results summary:

- Description and number of occurrences and their rough population size.
- Description of the "health" of each occurrence, as defined on pages 5-49 and 5-50 of the HCP/NCCP.
- A map of all the occurrences.
- Justification of surveying time window, if outside of the plant's blooming period.
- The CNDDB form(s) submitted to CDFG (if this is a new occurrence).
- A description of the anticipated impacts that the covered activity will have on the occurrence and/or how the project will avoid impacts to all covered and no-take plant species. All projects must demonstrate avoidance of all six no-take plants (see table 6-5 of the HCP/NCCP).

Rare Plant Surveys

Rare plant surveys were conducted on the project parcel and transmission line ROW by Consulting Botanist Virginia Dains on March 4, 2009, and the results are provided in Attachment 1. Additional rare plant surveys were conducted by CH2M HILL botanist Russell Huddleston on April 22, 2010, on the transmission line ROW, and these results are also provided in Attachment 1. The regional special-status plant species list was evaluated against observed conditions and the results of botanical surveys to develop a list of plant species with a potential to occur within the survey area. This list includes regulatory status, habitat requirements, occurrence determination, and a rationale for the occurrence determination.

Of the 59 special-status plant species determined during the pre-field investigation to have potential to occur within the region, field surveys determined that 15 of these have potential to occur within the survey area (See Attachment 1, Table 1). Special-status plant species with potential to occur in the survey area occur within the marsh, grassland, and inland dune communities. Of the 15 special-status plant species determined to have potential to occur within the survey area, none were observed during surveys or were previously reported within the project parcel or transmission line ROW.

III. Species-Specific Monitoring and Avoidance Requirements

This section discusses subsequent actions that are necessary to ensure project compliance with Plan requirements. Survey requirements and Best Management Practices pertaining to selected covered wildlife species are detailed in Section 6.4.3, *Species-Level Measures*, beginning on page 6-36 of the Final HCP/NCCP.

Preconstruction Surveys for Selected Covered Wildlife

If habitat for selected covered wildlife species identified in Table 2a was found to be present in the project area. In Table 3, identify the species for which preconstruction surveys or notifications are required based on the results of the planning surveys. Identify whether a condition of approval has been inserted into the development contract to address this requirement.

Table 3. Applicable Preconstruction Survey and Notification Requirements based on Land Cover Types and Habitat Elements Identified in Table 2a.

Species	Preconstruction Survey and Notification Requirements
☐ None	
☒ San Joaquin kit fox (p. 6-38)	Map all dens (>5 in. diameter) and determine status. Determine if breeding or denning foxes are in the project area. Provide written preconstruction survey results to FWS within 5 working days after surveying.
☒ Western burrowing owl (p. 6-40)	Map all burrows and determine status. Document use of habitat (e.g. breeding, foraging) in/near disturbance area (within 500 ft.)
☒ Giant garter snake (p. 6-44)	Delineate aquatic habitat up to 200 ft. from water's edge. Document any sightings of garter snake.
☐ California tiger salamander (p. 6-46) (notification only)	Provide written notification to USFWS and CDFG regarding timing of construction and likelihood of occurrence in the project area.
☒ California red-legged frog (p. 6-47) (notification only)	Provide written notification to USFWS and CDFG regarding timing of construction and likelihood of occurrence in the project area.
☐ Covered shrimp species (p. 6-47)	Document and evaluate use of all habitat features (e.g., vernal pools, rock outcrops). Document occurrences of covered shrimp.
☐ Townsend's big-eared bat (p. 6-37)	Determine if site is occupied or shows signs of recent occupation (guano).
☒ Swainson's hawk (p. 6-42)	Determine whether nests are occupied.
☒ Golden eagle (p. 6-39)	Determine whether nests are occupied.
Note: Page numbers refer to the HCP/NCCP.	

Preconstruction Surveys as Required for Selected Covered Wildlife in Table 3

Describe the preconstruction survey's or notification conditions applicable to any species checked in Table 3. All preconstruction surveys shall be conducted in accordance with the requirements set forth in Section 6.4.3, *Species-Level Measures*, and Table 6-1 of the HCP/NCCP.

San Joaquin Kit Fox

Prior to any ground disturbance related to covered activities, a USFWS/CDFG– approved biologist will conduct a preconstruction survey in areas identified in the planning surveys as supporting suitable breeding or denning habitat for San Joaquin kit fox. The surveys will establish the presence or absence of San Joaquin kit foxes and/or suitable dens and evaluate use by kit foxes in accordance with USFWS survey guidelines (U.S. Fish and Wildlife Service 1999). Preconstruction surveys will be conducted within 30 days of ground disturbance. On the parcel where the activity is proposed, the biologist will survey the proposed disturbance footprint and a 250-foot radius from the perimeter of the proposed footprint to identify San Joaquin kit foxes and/or suitable dens. Adjacent parcels under different land ownership will not be surveyed. The status of all dens will be determined and mapped. Written results of preconstruction surveys will be submitted to USFWS within 5 working days after survey completion and before the start of ground disturbance. Concurrence is not required prior to initiation of covered activities.

If San Joaquin kit foxes and/or suitable dens are identified in the survey area, the measures described in the following section (Construction Monitoring and Avoidance) will be implemented.

Western Burrowing Owl

Prior to any ground disturbance related to covered activities, a USFWS/CDFG approved biologist will conduct a preconstruction survey in areas identified in the planning surveys as having potential burrowing owl habitat. The surveys will establish the presence or absence of western burrowing owl and/or habitat features and evaluate use by owls in accordance with CDFG survey guidelines (California Department of Fish and Game 1993).

On the parcel where the activity is proposed, the biologist will survey the proposed disturbance footprint and a 500-foot radius from the perimeter of the proposed footprint to identify burrows and owls. Adjacent parcels under different land ownership will not be surveyed. Surveys should take place near sunrise or sunset in accordance with CDFG guidelines. All burrows or burrowing owls will be identified and mapped. Surveys will take place no more than 30 days prior to construction. During the breeding season (February 1–August 31), surveys will document whether burrowing owls are nesting in or directly adjacent to disturbance areas. During the nonbreeding season (September 1–January 31), surveys will document whether burrowing owls are using habitat in or directly adjacent to any disturbance area. Survey results will be valid only for the season (breeding or nonbreeding) during which the survey is conducted.

Giant Garter Snake

Prior to any ground disturbance related to covered activities, a USFWS/CDFG–approved biologist will conduct a preconstruction survey in areas identified in the planning surveys as having suitable garter snake habitat and 200 feet of adjacent uplands, measured from the outer edge of each bank. The surveys will delineate suitable habitat and document any sightings of giant garter snake.

California Red-legged Frog (CRLF)

No preconstruction surveys are required.

Swainson's hawk

Prior to any ground disturbance related to covered activities that occurs during the nesting season (March 15–September 15), a qualified biologist will conduct a preconstruction survey no more than 1 month prior to construction to establish whether Swainson's hawk nests within 1,000 feet of the project site are occupied. If potentially occupied nests within 1,000 feet are off the project site, then their occupancy will be determined by observation from public roads or by observations of Swainson's hawk activity (e.g., foraging) near the project site. If nests are occupied, the minimization measures and construction monitoring described in the following section are required (see Construction Monitoring and Avoidance).

Golden Eagle

Prior to implementation of covered activities, a qualified biologist will conduct a preconstruction survey to establish whether nests of golden eagles are occupied (see Section 6.3.1, *Planning Surveys*). If nests are occupied, the minimization measures and construction monitoring described in the following section are required (see Construction Monitoring and Avoidance).

Construction Monitoring & Avoidance and Minimization Measures for Selected Covered Species

If preconstruction surveys for key covered wildlife species establish the presence of any such species, construction monitoring will be necessary. In Table 4, check the boxes for the species that will be assessed during the preconstruction surveys (see Table 3). A summary of the construction monitoring requirements for each species is provided in Table 4 and these measures must be implemented in the event that preconstruction surveys described in Table 3 detect the covered species. A summary of avoidance measures is also provided in Table 4 and these measures must be implemented if construction monitoring detects the species or its sign. These construction monitoring and avoidance requirements are described in detail in Section 6.4.3, Species-Level Measures, of the Final HCP/NCCP.

Construction Monitoring Plan Requirements in Section 6.3.3, Construction Monitoring, of the Final HCP/NCCP:

☒ **Before implementing a covered activity, the applicant will develop and submit a construction-monitoring plan to the Implementing Entity[4] for approval.**

Table 4. Applicable Construction Monitoring Requirements

Species Assessed by Preconstruction Surveys	Monitoring Action Required if Species Detected
☐ None	N/A
☒ San Joaquin kit fox (p. 6-38)	Establish exclusion zones (>50 ft) for potential dens. Establish exclusion zones (>100 ft) for known dens. Notify USFWS of occupied natal dens.
☒ Western burrowing owl (p. 6-40)	Establish buffer zones (250 ft) around nests. Establish buffer zones (160 ft) around burrows.

[4] The East Contra Costa County Habitat Conservancy and the local land use Jurisdiction must review and approve the plan **prior** to the commencement of all covered activities (i.e. construction).

Species Assessed by Preconstruction Surveys	Monitoring Action Required if Species Detected
☒ Giant garter snake (p. 6-44)	Delineate 200-ft buffer around potential habitat. Provide field report on monitoring efforts. Stop construction activities if snake is encountered; allow snake to passively relocate. Remove temporary fill or debris from construction site. Mandatory training for construction personnel.
☐ Covered shrimp species (p. 6-47)	Establish buffer around outer edge of all hydric vegetation associated with habitat (50 feet of limit of immediate watershed supporting the wetland, whichever is larger). Mandatory training for construction personnel.
☒ Swainson's hawk (p. 6-42)	Establish 1,000-ft buffer around active nest and monitor compliance.
☒ Golden eagle (p. 6-39)	Establish 0.5-mile buffer around active nest and monitor compliance.

Construction Monitoring & Avoidance and Minimization Measures as Required for Selected Covered Wildlife in Table 4

Describe the construction monitoring and avoidance and minimization measures applicable to any species checked in Table 4. A summary of avoidance measures is provided in Table 4, these measures must be implemented if construction monitoring detects the presence of the species. The construction monitoring & avoidance and minimization measures requirements are described in detail in Section 6.4.3, Species-Level Measures, of the HCP/NCCP.

Biological Resources Mitigation Implementation and Monitoring Plan

A Biological Resources Mitigation Implementation and Monitoring Plan will be prepared prior to construction that outlines how the project would implement the mitigation and protection measures developed specifically for the project. The mitigation and protection measures will be developed through consultation and discussions with the California Energy Commission (CEC), USFWS, and CDFG.

Worker Environmental Awareness Program

A site-specific Worker Environmental Awareness Program (WEAP), which is intended to educate construction workers and operators on the sensitive resources in the area and the measures that should be undertaken to avoid or minimize impacts to these resources, will be administered by the designated biologist as part of the mitigation plan. The WEAP will include an oral, video/powerpoint, and/or written materials presentation that discusses the types of construction activities that may impact biological resources and the measures developed to avoid such impacts. The WEAP will also include appropriate contact information and procedures. The program will include information regarding encounters with wildlife and dealing with situations involving biological resources.

Special-Status Species

With regard to special-status species, the following "Construction Monitoring & Avoidance and Minimization Measuremeasures" will be implemented:

San Joaquin kit fox:

- If a San Joaquin kit fox den is discovered in the proposed development footprint, the den will be monitored for 3 days by a USFWS/CDFG– approved biologist using a tracking medium or an infrared beam camera to determine if the den is currently being used.
- Unoccupied dens should be destroyed immediately to prevent subsequent use.
- If a natal or pupping den is found, USFWS and CDFG will be notified immediately. The den will not be destroyed until the pups and adults have vacated and then only after further consultation with USFWS and CDFG.
- If kit fox activity is observed at the den during the initial monitoring period, the den will be monitored for an additional 5 consecutive days from the time of the first observation to allow any resident animals to move to another den while den use is actively discouraged. For dens other than natal or pupping dens, use of the den can be discouraged by partially plugging the entrance with soil such that any resident animal can easily escape. Once the den is determined to be unoccupied it may be excavated under the direction of the biologist. Alternatively, if the animal is still present after 5 or more consecutive days of plugging and monitoring, the den may have to be excavated when, in the judgment of a biologist, it is temporarily vacant (i.e., during the animal's normal foraging activities).

If dens are identified in the survey area outside the proposed disturbance footprint, exclusion zones around each den entrance or cluster of entrances will be demarcated. The configuration of exclusion zones should be circular, with a radius measured outward from the den entrance(s). No covered activities will occur within the exclusion zones. Exclusion zone radii for potential dens will be at least 50 feet and will be demarcated with four to five flagged stakes. Exclusion zone radii for known dens will be at least 100 feet and will be demarcated with staking and flagging that encircles each den or cluster of dens but does not prevent access to the den by kit fox.

Western burrowing owl:

If burrowing owls are found during the breeding season (February 1–August 31), the project proponent will avoid all nest sites that could be disturbed by project construction during the remainder of the breeding season or while the nest is occupied by adults or young. Avoidance will include establishment of a nondisturbance buffer zone (described below). Construction may occur during the breeding season if a qualified biologist monitors the nest and determines that the birds have not begun egg-laying and incubation or that the juveniles from the occupied burrows have fledged. During the nonbreeding season (September 1–January 31), the project proponent should avoid the owls and the burrows they are using, if possible. Avoidance will include the establishment of a buffer zone (described below).

If occupied burrows for burrowing owls are not avoided, passive relocation will be implemented. Owls should be excluded from burrows in the immediate impact zone and within a 160-foot buffer zone by installing one-way doors in burrow entrances. These doors should be in place for 48 hours prior to excavation. The project area should be monitored daily for 1 week to confirm that the owl has abandoned the burrow. Whenever possible, burrows should be excavated using hand tools and refilled to prevent reoccupation (California Department of Fish and Game 1995). Plastic tubing or a similar structure should be inserted in the tunnels during excavation to maintain an escape route for any owls inside the burrow.

Giant garter snake:

To the maximum extent practicable, impacts on giant garter snake habitat as a result of covered activities will be avoided. If feasible, in areas near construction activities, a buffer of 200 feet from suitable habitat will be delineated within which vegetation disturbance or use of heavy equipment is prohibited. If impacts on giant garter snake habitat as a result of covered activities are not avoided, the following measures will be implemented. These measures are based on USFWS's *Standard Avoidance and Minimization Measures during Construction Activities in Giant Garter Snake Habitat* (U.S. Fish and Wildlife Service 1999).

- Limit construction activity that disturbs habitat to the period between May 1 and September 30. This is the active period for giant garter snake, and direct mortality is minimized because snakes are more likely to independently move away from disturbed area. If activities are necessary in giant garter snake habitat between October 1 and April 30, the USFWS Sacramento Field Office will be contacted to determine if additional measures beyond those described below are necessary to minimize and avoid take.

- In areas where construction is to take place, dewater all irrigation ditches, canals or other aquatic habitat between April 15 and September 30 to remove habitat of garter snakes. Dewatered areas must remain dry, with no puddle water remaining, for at least 15 consecutive days prior to the excavation or filling of that habitat. If a site cannot be completely dewatered, netting and salvage of prey items may be necessary.

If suitable habitat for giant garter snake cannot be avoided between October 1 and April 30 the USFWS Sacramento Field Office will be contacted to determine if additional measures beyond those described below are necessary, and the following actions will be performed. A USFWS-approved biologist will conduct a construction survey no more than 24 hours before construction in suitable habitat and will be on site during construction activities in potential aquatic and upland habitat to ensure that individuals of giant garter snake encountered during construction will be avoided. The biologist will provide USFWS with a field report form documenting the monitoring efforts within 24 hours of commencement of construction activities. The monitor will be available thereafter. If a snake is encountered during construction activities, the monitor will have the authority to stop construction activities until appropriate corrective measures have been completed or it is determined that the snake will not be harmed. Giant garter snakes encountered during construction activities should be allowed to move away from the construction area on their own. Only personnel with a USFWS recovery permit pursuant to Section 10(a)(1)(A) of the ESA will have the authority to capture and/or relocate giant garter snakes that are encountered in the construction area. The project area will be reinspected whenever a lapse in construction activity of 2 weeks or more has occurred.

To ensure that construction equipment and personnel do not affect nearby aquatic habitat for giant garter snake outside construction areas, silt fencing will be erected to clearly define the aquatic habitat to be avoided; restrict working areas, spoils, and equipment storage and other project activities to areas outside of aquatic or wetland habitat; and maintain water quality and limit construction runoff into wetland areas through the use of fiber bales, filter fences, vegetation buffer strips, or other appropriate methods.

Fill or construction debris may be used by giant garter snakes as over-wintering sites. Therefore, upon completion of construction activities, any temporary fill or construction debris must be removed from the site.

Construction personnel will be trained to avoid harming giant garter snakes. A qualified biologist approved by USFWS will inform all construction personnel about the life history of giant garter snakes; the importance of irrigation canals, marshes/wetlands, and seasonally flooded areas such as rice fields to giant garter snakes; and the terms and conditions of the Plan related to avoiding and minimizing impacts on giant garter snake.

Swainson's hawk:

During the nesting season (March 15–September 15), covered activities within 1,000 feet of occupied nests or nests under construction will be prohibited to prevent nest abandonment. If site-specific conditions or the nature of the covered activity (e.g., steep topography, dense vegetation, limited activities) indicate that a smaller buffer could be used, the Implementing Entity will coordinate with CDFG/USFWS to determine the appropriate buffer size.

If young fledge prior to September 15, covered activities can proceed normally. If the active nest site is shielded from view and noise from the project site by other development, topography, or other features, the project applicant can apply to the Implementing Entity for a waiver of this

avoidance measure. Any waiver must also be approved by USFWS and CDFG. While the nest is occupied, activities outside the buffer can take place. All active nest trees will be preserved on site, if feasible. Nest trees, including non-native trees, lost to covered activities will be mitigated by the project proponent according to the requirements below.

Mitigation for Loss of Nest Trees

The loss of non-riparian Swainson's hawk nest trees will be mitigated by the project proponent by:

- If feasible on-site, planting 15 saplings for every tree lost with the objective of having at least 5 mature trees established for every tree lost according to the requirements listed below.

  AND either

  1. Pay the Implementing Entity an additional fee to purchase, plant, maintain, and monitor 15 saplings on the HCP/NCCP Preserve System for every tree lost according to the requirements listed below, OR
  2. The project proponent will plant, maintain, and monitor 15 saplings for every tree lost at a site to be approved by the Implementing Entity (e.g., within an HCP/NCCP Preserve or existing open space linked to HCP/NCCP preserves), according to the requirements listed below.

The following requirements will be met for all planting options:

- Tree survival shall be monitored at least annually for 5 years, then every other year until year 12. All trees lost during the first 5 years will be replaced. Success will be reached at the end of 12 years if at least 5 trees per tree lost survive without supplemental irrigation or protection from herbivory. Trees must also survive for at least three years without irrigation.
- Irrigation and fencing to protect from deer and other herbivores may be needed for the first several years to ensure maximum tree survival.
- Native trees suitable for this site should be planted. When site conditions permit, a variety of native trees will be planted for each tree lost to provide trees with different growth rates, maturation, and life span, and to provide a variety of tree canopy structures for Swainson's hawk. This variety will help to ensure that nest trees will be available in the short term (5-10 years for cottonwoods and willows) and in the long term (e.g., Valley oak, sycamore). This will also minimize the temporal loss of nest trees.
- Riparian woodland restoration conducted as a result of covered activities (i.e., loss of riparian woodland) can be used to offset the nest tree planting requirement above, if the nest trees are riparian species.
- Whenever feasible and when site conditions permit, trees should be planted in clumps together or with existing trees to provide larger areas of suitable nesting habitat and to create a natural buffer between nest trees and adjacent development (if plantings occur on the development site).
- Whenever feasible, plantings on the site should occur closest to suitable foraging habitat outside the UDA.
- Trees planted in the HCP/NCCP preserves or other approved offsite location will occur within the known range of Swainson's hawk in the inventory area and as close as possible to high-quality foraging habitat.

Golden Eagle:

Covered activities will be prohibited within 0.5 mile of active nests. Nests can be built and active at almost any time of the year, although mating and egg incubation occurs late January through August, with peak activity in March through July. If site-specific conditions or the nature of the covered activity (e.g., steep topography, dense vegetation, limited activities) indicate that a smaller buffer could be appropriate or that a larger buffer should be implemented, the Implementing Entity will coordinate with CDFG/USFWS to determine the appropriate buffer size.

Construction monitoring will focus on ensuring that no covered activities occur within the buffer zone established around an active nest. Although no known golden eagle nest sites occur within or near the ULL, covered activities inside and outside of the Preserve System have the potential to disturb golden eagle nest sites. Construction monitoring will ensure that direct effects to golden eagles are minimized.

IV. Landscape and Natural Community-Level Avoidance and Minimization Measures

Describe relevant avoidance and minimization measures required to address the conservation measures listed below. If a conservation measure is not relevant to the project, explain why.

For All Projects

HCP/NCCP Conservation Measure 1.10. Maintain Hydrologic Conditions and Minimize Erosion

Briefly describe how the project complies with this measure. See page 6-21 of the Final HCP/NCCP for details.

Drainage Erosion and Sediment Control/Stormwater Pollution Prevention Plan

A draft Construction Drainage, Erosion, and Sediment Control/ Stormwater Pollution Prevention Plan (DESCP/SWPPP) has been developed for the OGS project and submitted to the CEC for review. A final DESCP/SWPPP will be prepared prior to the start of construction and will be available for review upon request. These plans will maintain hydrologic conditions and will minimize erosion during construction.

The OGS stormwater management design meets the Contra Costa County C.3 requirements and includes bioswales for treatment of runoff and minimization of erosion from the project parcel.

HCP/NCCP Conservation Measure 1.11. Avoid Direct Impacts on Extremely Rare Plants, Fully Protected Wildlife Species, or Covered Migratory Birds

Briefly describe how the project complies with this measure. See page 6-23 of the Final HCP/NCCP for details.

Extremely Rare Plants

Extremely rare plants have not been identified on the project parcel or along the transmission line ROW.

Fully Protected Wildlife Species

The white-tailed kite and golden eagle are listed in the HCP as “no take species,” and no direct take of individuals is allowed (HCP Table 6-5). MBTA species could breed in a variety of habitats, including grasslands, cultivated fields, oak woodlands, and suburban areas where prey is abundant. Preconstruction surveys for white-tailed kite and golden eagle will be performed as part of preconstruction surveys.

Migratory Birds

Breeding habitat for birds of prey protected by the CDFG Commission Code, Section 1600, and the federal MBTA occurs in the project area. These species include the white-tailed kite *(Elanus lecurus*) and red-tailed hawk (*Buteo jamaicensis*), which were observed during field visits; other migratory birds (passerines and raptors), including Swainson’s hawk and golden eagle, receive additional protection under the MBTA and Migratory Bird Treaty Reform Act (USFWS, 2005). All

birds covered by the HCP are also considered migratory birds and are subject to the prohibitions of the MBTA (see HCP Conservation Measure 1.11:pg 6-23). Red-tailed hawk is not covered by the HCP but is covered by the MBTA. Actions conducted under the HCP must comply with the provisions of the MBTA and avoid killing or possessing covered migratory birds, their young, nests, feathers, or eggs (see HCP Conservation Measure 1.11: pg 6-23). To fulfill the requirements of the MBTA, covered activities must not result in take as defined by the MBTA of covered bird species.

Preconstruction surveys for MBTA species will be performed as part of preconstruction surveys for Swainson's hawk and golden eagle. If active nests are indentified within 1,000 feet of the project parcel and transmission line ROW, a construction biological monitor will ensure that no covered activities occur within the buffer zone established around an active nest. Biological construction monitoring will ensure that direct effects to MBTA species are minimized.

For Projects on or adjacent to Streams or Wetlands

HCP/NCCP Conservation Measure 1.7. Establish Stream Setbacks

Briefly describe how the project complies with this measure. See page 6-15 and Table 6-2 of the Final HCP/NCCP for details. For questions on the stream setback requirements, please contact the Conservancy.

Stream Setback—East Antioch Creek

The project would intersect GGS upland habitat at the intersection of the transmission line ROW and East Antioch Creek (see Figure 3j, Land Cover Habitat Survey), with the replacement of an existing steel-lattice tower with a tubular steel pole approximately 120 feet upslope from the creek bank. East Antioch Creek flows into Lake Alhambra and then into the San Joaquin River. Access to this area will be by an existing paved and earthen walking trail, which crosses the wetland via a culvert. It is expected that ESA fencing will also be installed to protect the riparian habitat.

HCP/NCCP Conservation Measure 2.12. Wetland, Pond, and Stream Avoidance and Minimization

Briefly describe how the project complies with this measure. See page 6-33 of the Final HCP/NCCP for details.

Wetland E

A wetland preserve, called Wetland E, is located at the western end of the project parcel. This wetland is under conservation easement. The project would avoid this wetland, and the project has been designed so that it will not have any adverse effect on the functions and values of this wetland. In addition, the project will implement a wetland management plan that includes removal of existing refuse from the 0.6-acre wetland and surrounding 1.0-acre conservation area, removal of non-native species and planting of native species, and enhancements to drainage and stormwater control.

Stream Setback—East Antioch Creek

See the response under Conservation Measure 1.7, above.

The project would not encounter any other streams, wetlands, or ponds.

For Projects adjacent to Protected Natural Lands (existing and projected)

Covered activities adjacent to permanently protected natural lands will require a variety of special considerations to address issues associated with characteristics of the urban-wildland interface. These considerations are intended to minimize the impacts of development on the integrity of habitat preserved and protected under the terms of the Plan. Permanently protected natural lands are defined as any of the following (see the latest Preserve System map on the Conservancy web site, www.cocohcp.org).

- Publicly owned open space with substantial natural land cover types including but not limited to state and regional parks and preserves and public watershed lands (local and urban neighborhood parks are excluded).
- Deed-restricted private conservation easements.
- HCP/NCCP Preserve System lands.
- Potential HCP/NCCP Preserve System lands (see Figure 5-3 in the HCP/NCCP).

HCP/NCCP Conservation Measure 1.6. Minimize Development Footprint Adjacent to Open Space

Briefly describe how the project complies with this measure. See page 6-14 of the Final HCP/NCCP for details.

Not Applicable. The project parcel and transmission line route are surrounded by urban, residential, and agricultural lands.

HCP/NCCP Conservation Measure 1.8. Establish Fuel Management Buffer to Protect Preserves and Property

Briefly describe how the project complies with this measure. See page 6-18 of the Final HCP/NCCP for details.

Not Applicable. The project parcel and transmission line ROW are not adjacent to HCP/NCCP preserves, likely HCP/NCCP acquisition sites, or existing public open space that is or will be linked to HCP/NCCP preserve.

HCP/NCCP Conservation Measure 1.9. Incorporate Urban-Wildland Interface Design Elements

Briefly describe how the project complies with this measure. See page 6-20 of the Final HCP/NCCP for details.

Not applicable.

For Rural Infrastructure Projects

Rural infrastructure projects provide infrastructure that supports urban development within the urban development area. Such projects are divided into three categories: transportation projects, flood protection projects, and utility projects. Most rural road projects covered by the Plan will be led by Contra Costa County. All flood protection projects covered by the Plan will be led by the County Flood Control District. Utility projects will likely be led by the private companies that own the utility lines. A complete discussion of rural infrastructure projects is presented in Section 2.3.2 of the Final HCP/NCCP beginning on page 2-18.

HCP/NCCP Conservation Measure 1.12. Implement Best Management Practices for Rural Road Maintenance

Briefly describe how the project complies with this measure. See page 6-25 of the Final HCP/NCCP for details.

Not Applicable: The project site, laydown areas, stockpile areas, force main alignment, and approximately 0.8 miles of transmission line are within the initial urban development area. The remaining transmission line is outside the initial urban development area but does not create or impact rural roads. Therefore, the Conservation Measure 1.12 is not applicable for OGS.

HCP/NCCP Conservation Measure 1.13. Implement Best Management Practices for Flood Control Facility Maintenance

Briefly describe how the project complies with this measure. See page 6-26 of the Final HCP/NCCP for details.

Not Applicable: The project site, laydown areas, stockpile areas, force main alignment, and approximately 0.8 miles of transmission line are within the initial urban development area. The remaining transmission line is outside the initial urban development area but does not create or impact rural roads. Therefore, the Conservation Measure 1.12 is not applicable for OGS.

HCP/NCCP Conservation Measure 1.14. Design Requirements for Covered Roads outside the Urban Development Area

Briefly describe how the project complies with this measure. See page 6-27 of the Final HCP/NCCP for details.

Not Applicable: The project site, laydown areas, stockpile areas, force main alignment, and approximately 0.8 miles of transmission line are within the initial urban development area. The remaining transmission line is outside the initial urban development area but does not create or impact rural roads. Therefore, the Conservation Measure 1.12 is not applicable for OGS.

V. Mitigation Measures

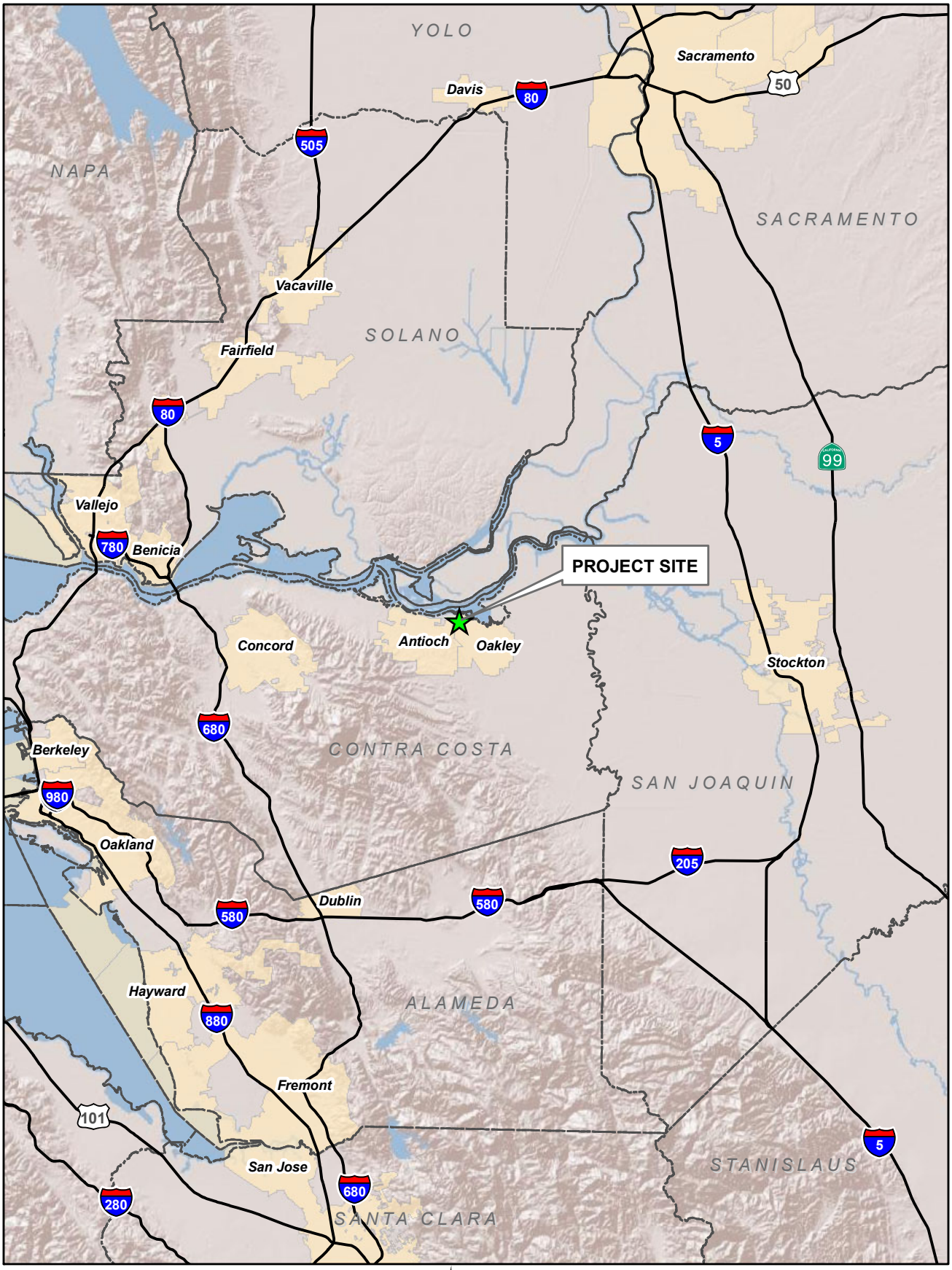
Complete and Attach Exhibit 1 (Permanent Impact Fees) and/or Exhibit 2 (Temporary Impact Fees) Fee Calculator(s) for Permanent and Temporary Impacts.

- Briefly describe the amount of fees to be paid and when.

- See Section 9.3.1 of the HCP/NCCP for details. If land is to be dedicated in lieu of fees or if restoration or creation of jurisdictional wetlands or waters is to be performed in lieu of fees, summarize these actions here and attach written evidence that the Conservancy has approved these actions in lieu of fees.

The permanent project mitigation fees total $179,997 and the temporary mitigation fees total $50,084 for a total project mitigation fee of $230,081. The permanent and temporary fee calculation exhibits are included in Attachment 2. Contra Costa Generating Station, LLC proposes to remit the fees at the time construction begins, which is scheduled for June 2011.

Figures



LEGEND

★ PROJECT SITE

N

0 5 10

Miles

FIGURE 1
Project Vicinity

Oakley Generating Station
Oakley, California

CH2MHILL

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This map was compiled from various scale source data and maps and is intended for use as only an approximate representation of actual locations.

N

0 1,000 2,000

Feet

FIGURE 1b
PROJECT LOCATION

Oakley Generating Station
Oakley, California

CH2MHILL

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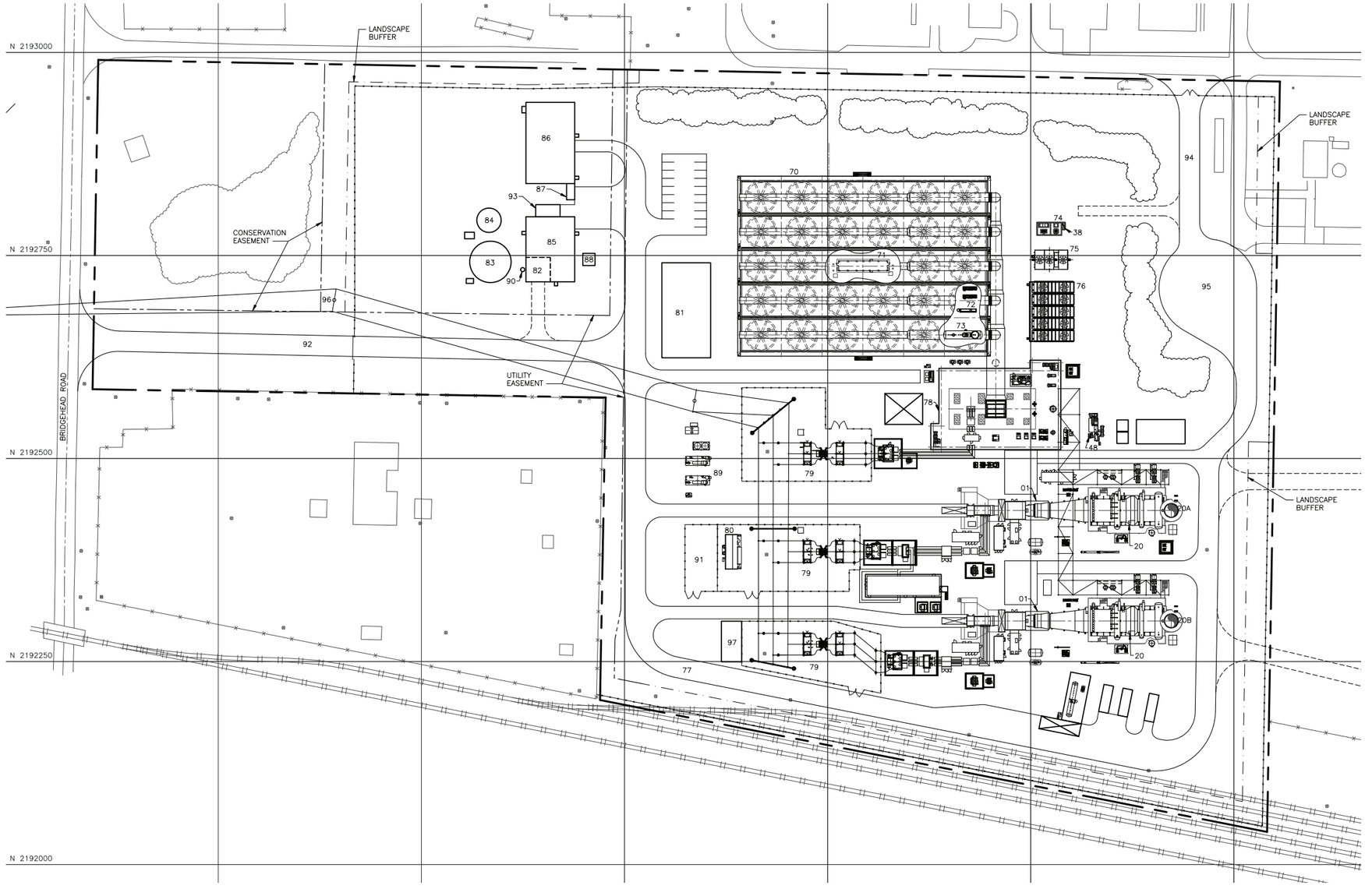


FACILITIES LEGEND

ID	FACILITY	STRUCTURE HEIGHT	TIEDOWN LOCATION NORTH	TIEDOWN LOCATION EAST	REMARKS
01	COMBUSTION TURBINE	70'	–	–	–
20	HEAT RECOVERY STEAM GENERATOR (HRSG)	103'	–	–	–
20A	HRSG EXHAUST STACK A	155'	2192436.00	6202665.00	CL EXHAUST STACK
20B	HRSG EXHAUST STACK B	155'	2192300.00	6202665.00	CL EXHAUST STACK
38	SAFETY SHOWER EYEWASH STATION	–	–	–	–
48	AUXILIARY BOILER	50'	2192527.61	6202572.26	CL EXHAUST STACK
70	AIR COOLED CONDENSER (ACC)	124'	–	–	–
71	ACC ELECTRICAL ENCLOSURE	14'	–	–	–
72	CONDENSER AIR EXTRACTION SKIDS	6'	–	–	–
73	ACC CONDENSATE COLLECTION TANK	28'	–	–	–
74	WET SURFACE AIR COOLER CHEMICAL FEED SKIDS	8'	–	–	–
75	WET SURFACE AIR COOLER	23'	2192744.67	6202523.00	CL COOLER
76	CLOSED CYCLE COOLING WATER HEAT EXCHANGER	19'	–	–	–
77	LOOP ROAD	–	–	–	–
78	STEAM TURBINE FOUNDATION	–	–	–	–
79	SWITCHYARD	18' & 45'	–	–	–
80	SWITCHYARD CONTROL ENCLOSURE	12'	–	–	–
81	CONTROL & ADMIN BUILDING	14'	–	–	–
82	FIRE WATER PUMP ROOM	20'	–	–	–
83	FIRE/SERVICE WATER STORAGE TANK	32'	–	–	–
84	DEMIN WATER STORAGE TANK	24'	–	–	–
85	WATER TREATMENT BUILDING	20'	–	–	–
86	WAREHOUSE/MAINTENANCE BUILDING	16'	–	–	–
87	LUBRICANT STORAGE SHED	10'	–	–	–
88	WASTE WATER LIFT STATION (IF REQUIRED)	–	–	–	–
89	GAS COMPRESSORS & GAS CONDITIONING	13'	–	–	–
90	DIESEL FIRE PUMP EXHAUST	16'	2192732.52	6201874.72	CL EXHAUST STACK
91	GAS METERING STATION	–	–	–	–
92	ACCESS ROAD	–	–	–	–
93	LEASED MIX BED EXCHANGER CONCRETE SLAB	–	–	–	–
94	EMERGENCY ACCESS ROAD	–	–	–	–
95	CUL DA SAC (TURNAROUND)	–	–	–	–
96	230KV POWER POLE	106'	–	–	–
97	OUTAGE MAINTENANCE TRAILERS AREA	–	–	–	–

NOTES

1. COORDINATES ARE BASED ON CALIFORNIA COORDINATE SYSTEM CCS83, ZONE 3. ELEVATION ARE BASED ON, NGVD 29 DATUM. BENCHMARK IS NATIONAL GEODETIC SURVEY BENCH MARK "W 563", LOCATED ADJACENT TO THE FLAGPOLE AT THE DUPONT PLANT ENTRANCE, ELEVATION = 11.168 FEET. TO OBTAIN DUPONT PLANT DATUM ELEVATION, ADD 0.70 FEET TO THE ELEVATIONS SHOWN. TOPOGRAPHIC DATA IS BASED ON AERIAL PHOTOGRAPH DATED JUNE 11, 2001. AERIAL SURVEY INFORMATION WAS OBTAINED BY RONALD GREENWELL & ASSOCIATES, INC.
2. SEE PLANT ARRANGEMENT DRAWING SM–2001, FOR LEGEND OF MAIN POWER BLOCK.
3. PROPERTY AND EASEMENT BOUNDARY INFORMATION IS BASED UPON DRAWING EXHIBIT D, BY RONALD GREENWELL & ASSOCIATES, INC. REVISION DATED 05/FEB/09.

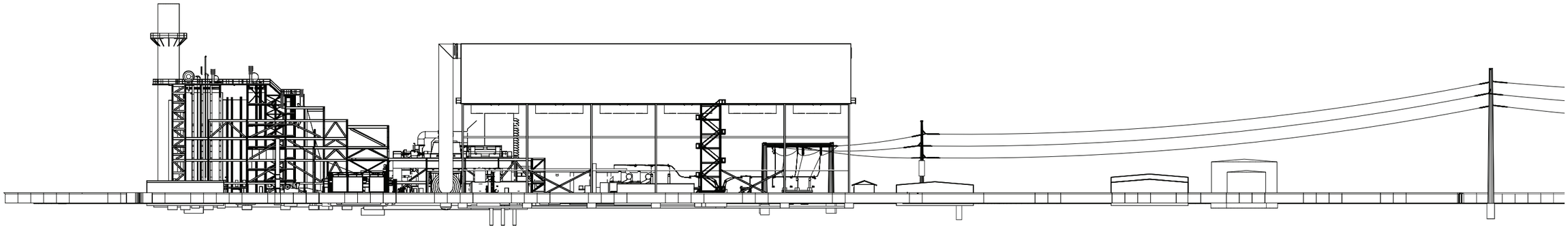
GENERAL LEGEND

- NEW FENCE
- EXISTING FENCE
- PROPERTY BOUNDRY (SEE NOTE 3)
- EASEMENT BOUNDARY (SEE NOTE 3)
- LANDSCAPE BUFFER

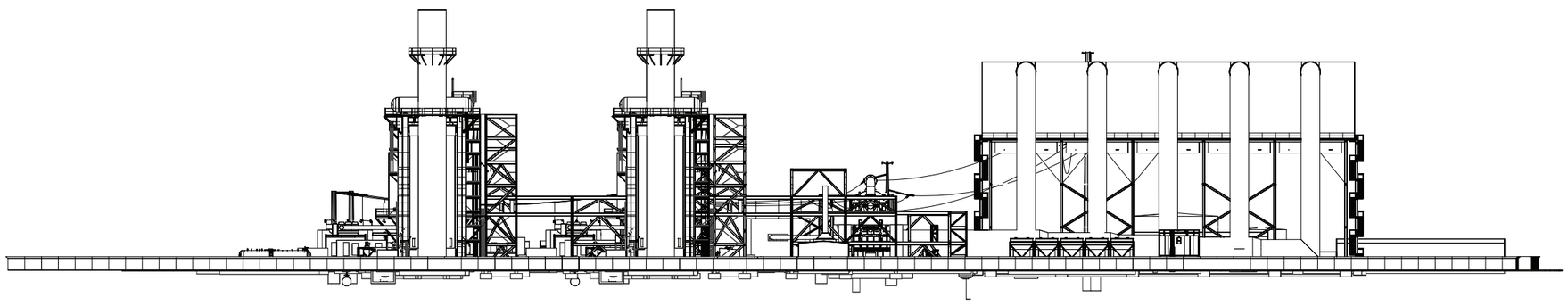
Source: Black & Veatch Holding Company, 03/26/09, Drawing 163994-SS-1002 R1

FIGURE 2.1
General Arrangement
Oakley Generating Station
Oakley, California

CH2MHILL



NORTH ELEVATION
LOOKING SOUTH

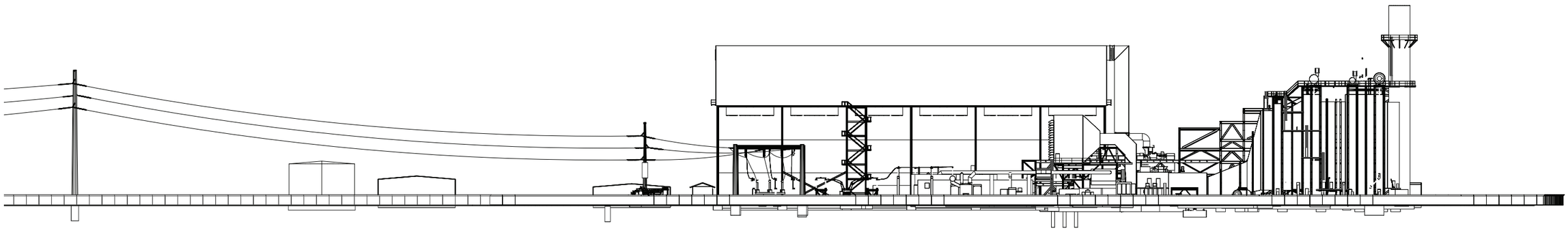


EAST ELEVATION
LOOKING WEST

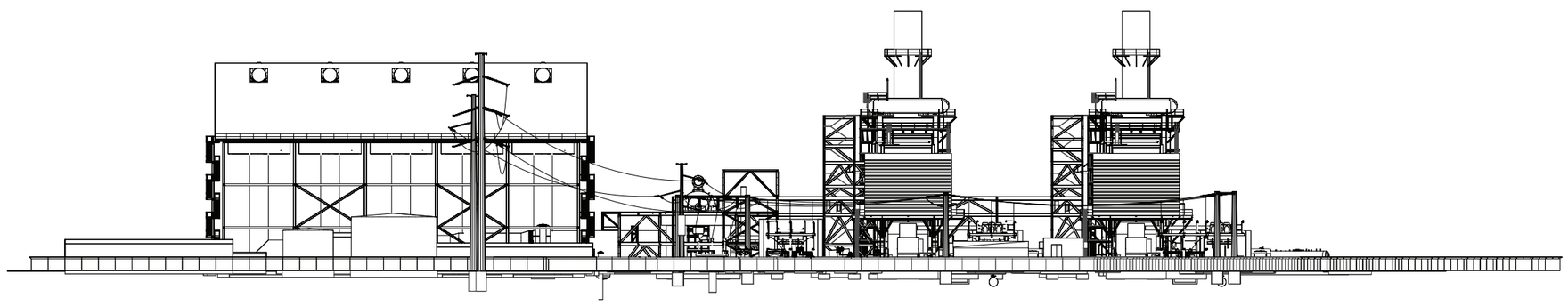
30' 20' 10' 0 30' 60'

FIGURE 2.2a
Plant Elevation
Oakley Generating Station
Oakley, California

Source: Black & Veatch Holding Company, 03/26/09, Drawing 163994-SM-2501 R1



SOUTH ELEVATION
LOOKING NORTH



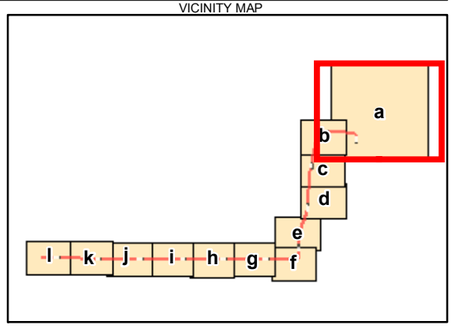
WEST ELEVATION
LOOKING EAST

30' 20' 10' 0 30' 60'

FIGURE 2.2b
Plant Elevation
Oakley Generating Station
Oakley, California

Source: Black & Veatch Holding Company, 03/26/09, Drawing 163994-SM-2501 R1

VICINITY MAP



LEGEND

- TOWER LOCATIONS
- PROPOSED 230kV TRANMISSION LINE
- Sanitary Sewer Force Main
- Wetland E Conservation Easement

Land Cover Habitat Survey

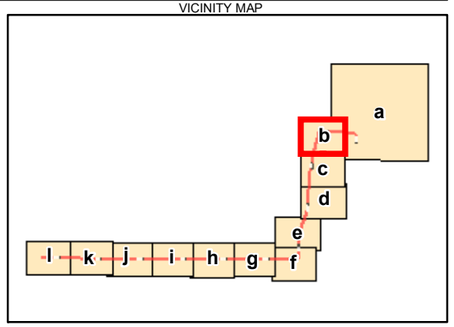
- Non-native Woodland
- Riparian
- Ruderal
- Urban
- Vineyard
- Wetland
- ESA Fencing
- Temporary Impacts
- Permanent Impacts
- Construction Laydown Area
- Pull Site
- Access Road
- New Access Road
- GGS Upland Habitat (200FT Buffer)
- Water Edge
- (2) Soil Stockpile Area

N

0 50 100 200
Feet

Figure 3a
Land Cover Habitat Survey
Oakley Generating Station
Oakley, California

VICINITY MAP



LEGEND

- TOWER LOCATIONS
- PROPOSED 230kV TRANMISSION LINE
- Sanitary Sewer Force Main
- Wetland E Conservation Easement

Land Cover Habitat Survey

- Non-native Woodland
- Riparian
- Ruderal
- Urban
- Vineyard
- Wetland
- ESA Fencing
- Temporary Impacts
- Permanent Impacts
- Construction Laydown Area
- Pull Site
- Access Road
- New Access Road
- GGS Upland Habitat (200FT Buffer)
- Water Edge

N

0 50 100 200
Feet

Figure 3b
Land Cover Habitat Survey
Oakley Generating Station
Oakley, California

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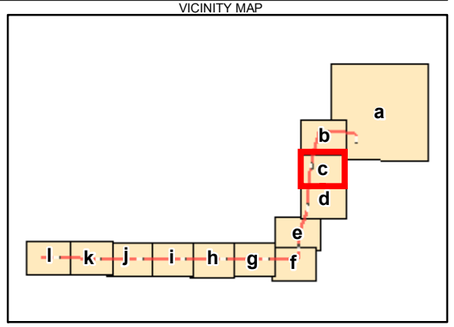
VICINITY MAP



LEGEND

- TOWER LOCATIONS
- PROPOSED 230kV TRANMISSION LINE
- Sanitary Sewer Force Main
- Wetland E Conservation Easement

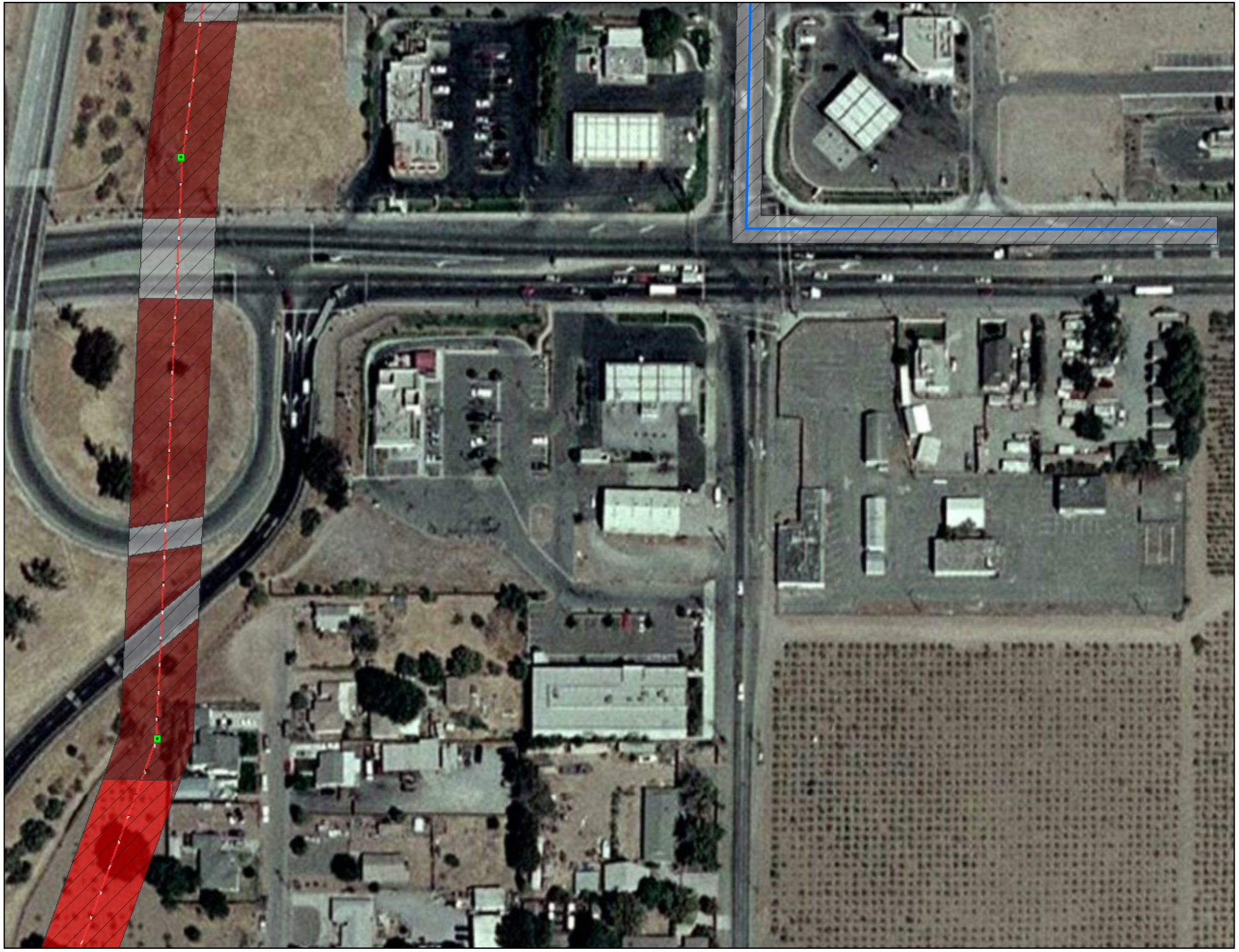
Land Cover Habitat Survey

- Non-native Woodland
- Riparian
- Ruderal
- Urban
- Vineyard
- Wetland
- ESA Fencing
- Temporary Impacts
- Permanent Impacts
- Construction Laydown Area
- Pull Site
- Access Road
- New Access Road
- GGS Upland Habitat (200FT Buffer)
- Water Edge

N

0 50 100 200
Feet

Figure 3c
Land Cover Habitat Survey
Oakley Generating Station
Oakley, California



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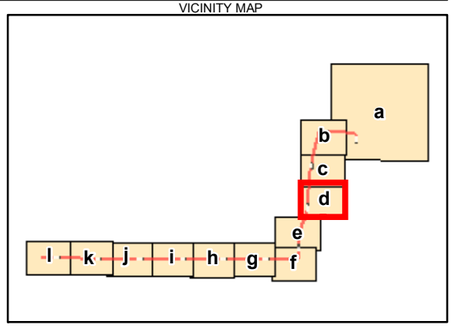


LEGEND

- TOWER LOCATIONS
- PROPOSED 230kV TRANMISSION LINE
- Sanitary Sewer Force Main
- Wetland E Conservation Easement

Land Cover Habitat Survey

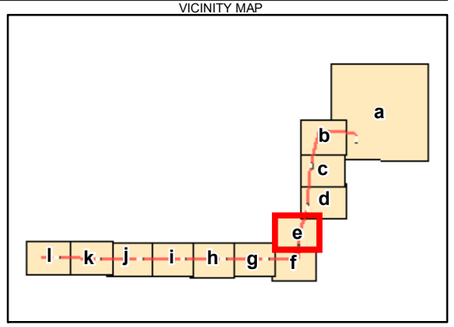
- Non-native Woodland
- Riparian
- Ruderal
- Urban
- Vineyard
- Wetland
- ESA Fencing
- Temporary Impacts
- Permanent Impacts
- Construction Laydown Area
- Pull Site
- Access Road
- New Access Road
- GGS Upland Habitat (200FT Buffer)
- Water Edge

N

0 50 100 200
Feet

Figure 3d
Land Cover Habitat Survey
Oakley Generating Station
Oakley, California

VICINITY MAP



LEGEND

- TOWER LOCATIONS
- PROPOSED 230kV TRANMISSION LINE
- Sanitary Sewer Force Main
- Wetland E Conservation Easement

Land Cover Habitat Survey

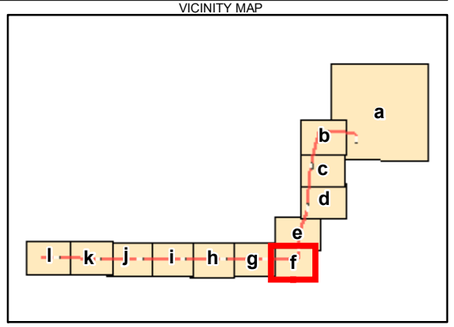
- Non-native Woodland
- Riparian
- Ruderal
- Urban
- Vineyard
- Wetland
- ESA Fencing
- Temporary Impacts
- Permanent Impacts
- Construction Laydown Area
- Pull Site
- Access Road
- New Access Road
- GGS Upland Habitat (200FT Buffer)
- Water Edge

N

0 50 100 200
Feet

Figure 3e
Land Cover Habitat Survey
Oakley Generating Station
Oakley, California

VICINITY MAP



LEGEND

- TOWER LOCATIONS
- PROPOSED 230kV TRANMISSION LINE
- Sanitary Sewer Force Main
- Wetland E Conservation Easement

Land Cover Habitat Survey

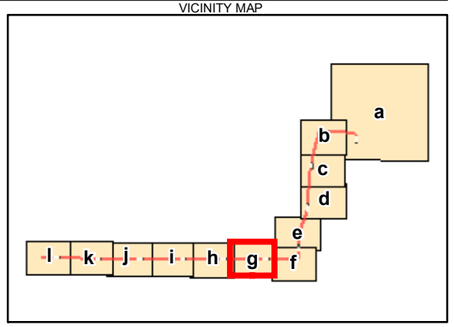
- Non-native Woodland
- Riparian
- Ruderal
- Urban
- Vineyard
- Wetland
- ESA Fencing
- Temporary Impacts
- Permanent Impacts
- Construction Laydown Area
- Pull Site
- Access Road
- New Access Road
- GGS Upland Habitat (200FT Buffer)
- Water Edge

N

0 50 100 200
Feet

Figure 3f
Land Cover Habitat Survey
Oakley Generating Station
Oakley, California

VICINITY MAP



LEGEND

- TOWER LOCATIONS
- PROPOSED 230kV TRANMISSION LINE
- Sanitary Sewer Force Main
- Wetland E Conservation Easement

Land Cover Habitat Survey

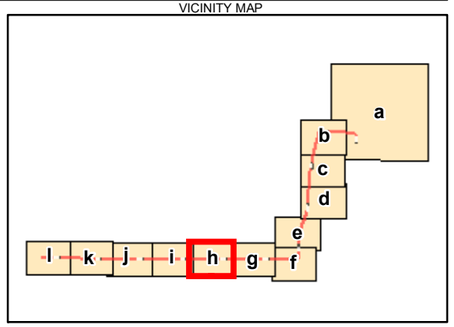
- Non-native Woodland
- Riparian
- Ruderal
- Urban
- Vineyard
- Wetland
- ESA Fencing
- Temporary Impacts
- Permanent Impacts
- Construction Laydown Area
- Pull Site
- Access Road
- New Access Road
- GGS Upland Habitat (200FT Buffer)
- Water Edge

N

0 50 100 200
Feet

Figure 3g
Land Cover Habitat Survey
Oakley Generating Station
Oakley, California

VICINITY MAP



LEGEND

- TOWER LOCATIONS
- PROPOSED 230kV TRANMISSION LINE
- Sanitary Sewer Force Main
- Wetland E Conservation Easement

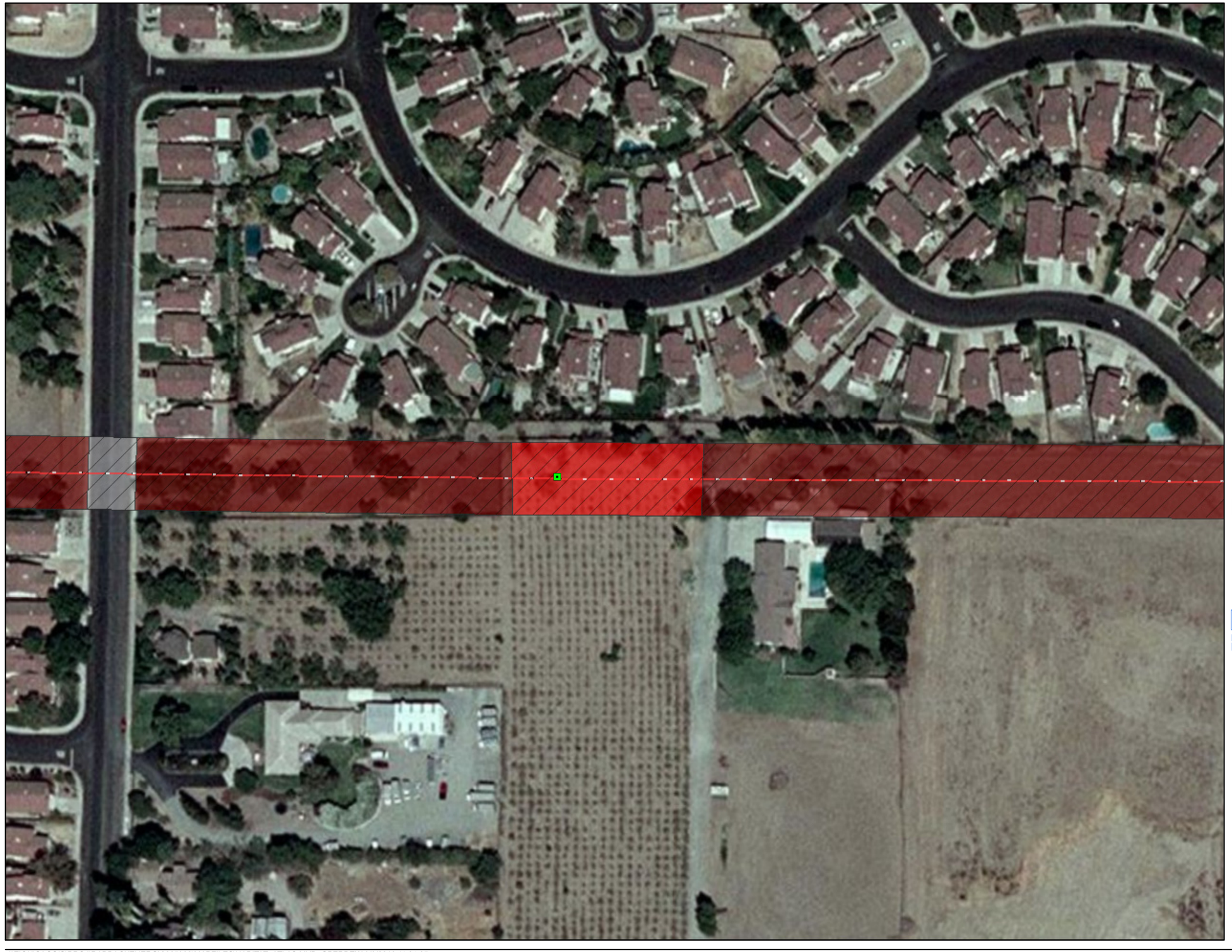
Land Cover Habitat Survey

- Non-native Woodland
- Riparian
- Ruderal
- Urban
- Vineyard
- Wetland
- ESA Fencing
- Temporary Impacts
- Permanent Impacts
- Construction Laydown Area
- Pull Site
- Access Road
- New Access Road
- GGS Upland Habitat (200FT Buffer)
- Water Edge

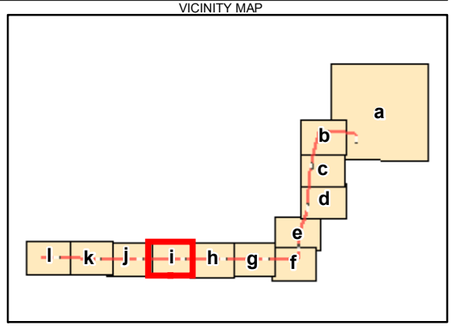
N

0 50 100 200
Feet

Figure 3h
Land Cover Habitat Survey
Oakley Generating Station
Oakley, California



VICINITY MAP



LEGEND

- TOWER LOCATIONS
- PROPOSED 230kV TRANMISSION LINE
- Sanitary Sewer Force Main
- Wetland E Conservation Easement

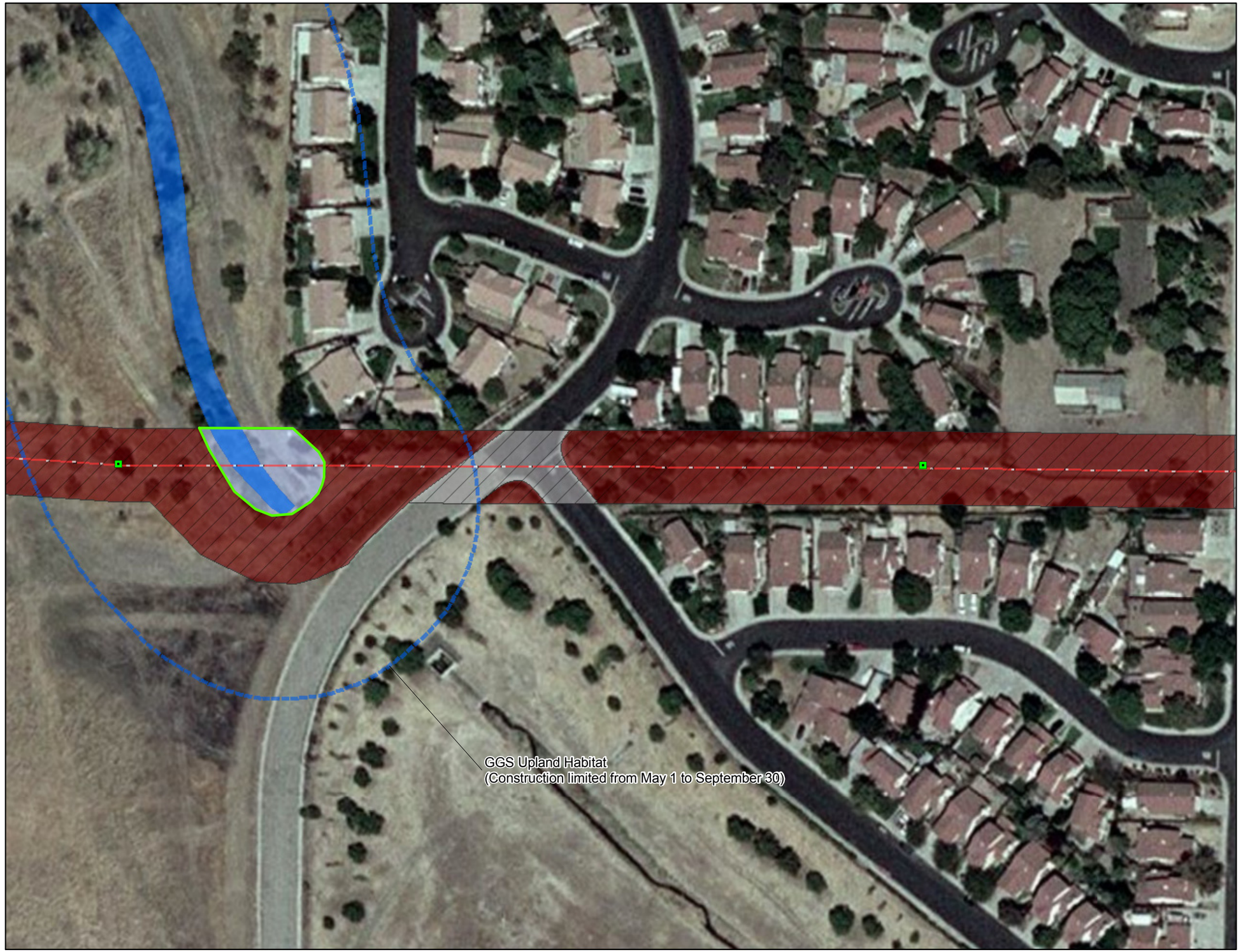
Land Cover Habitat Survey

- Non-native Woodland
- Riparian
- Ruderal
- Urban
- Vineyard
- Wetland
- ESA Fencing
- Temporary Impacts
- Permanent Impacts
- Construction Laydown Area
- Pull Site
- Access Road
- New Access Road
- GGS Upland Habitat (200FT Buffer)
- Water Edge

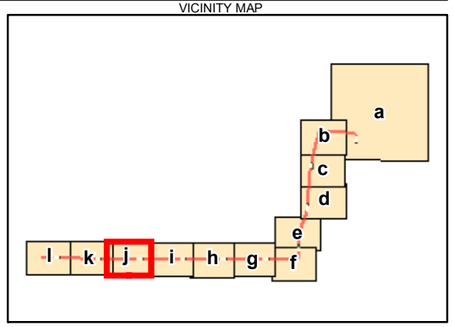
N

0 50 100 200
Feet

Figure 3i
Land Cover Habitat Survey
Oakley Generating Station
Oakley, California



VICINITY MAP



LEGEND

- TOWER LOCATIONS
- PROPOSED 230kV TRANMISSION LINE
- Sanitary Sewer Force Main
- Wetland E Conservation Easement

Land Cover Habitat Survey

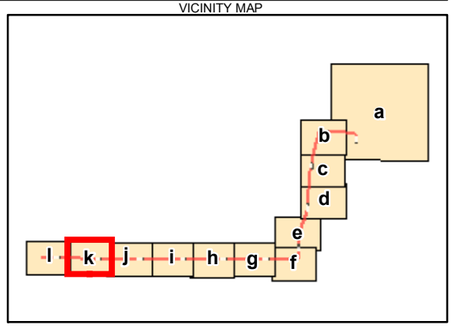
- Non-native Woodland
- Riparian
- Ruderal
- Urban
- Vineyard
- Wetland
- ESA Fencing
- Temporary Impacts
- Permanent Impacts
- Construction Laydown Area
- Pull Site
- Access Road
- New Access Road
- GGS Upland Habitat (200FT Buffer)
- Water Edge

N

0 50 100 200
Feet

Figure 3j
Land Cover Habitat Survey
Oakley Generating Station
Oakley, California

VICINITY MAP



LEGEND

- TOWER LOCATIONS
- PROPOSED 230kV TRANMISSION LINE
- Sanitary Sewer Force Main
- Wetland E Conservation Easement

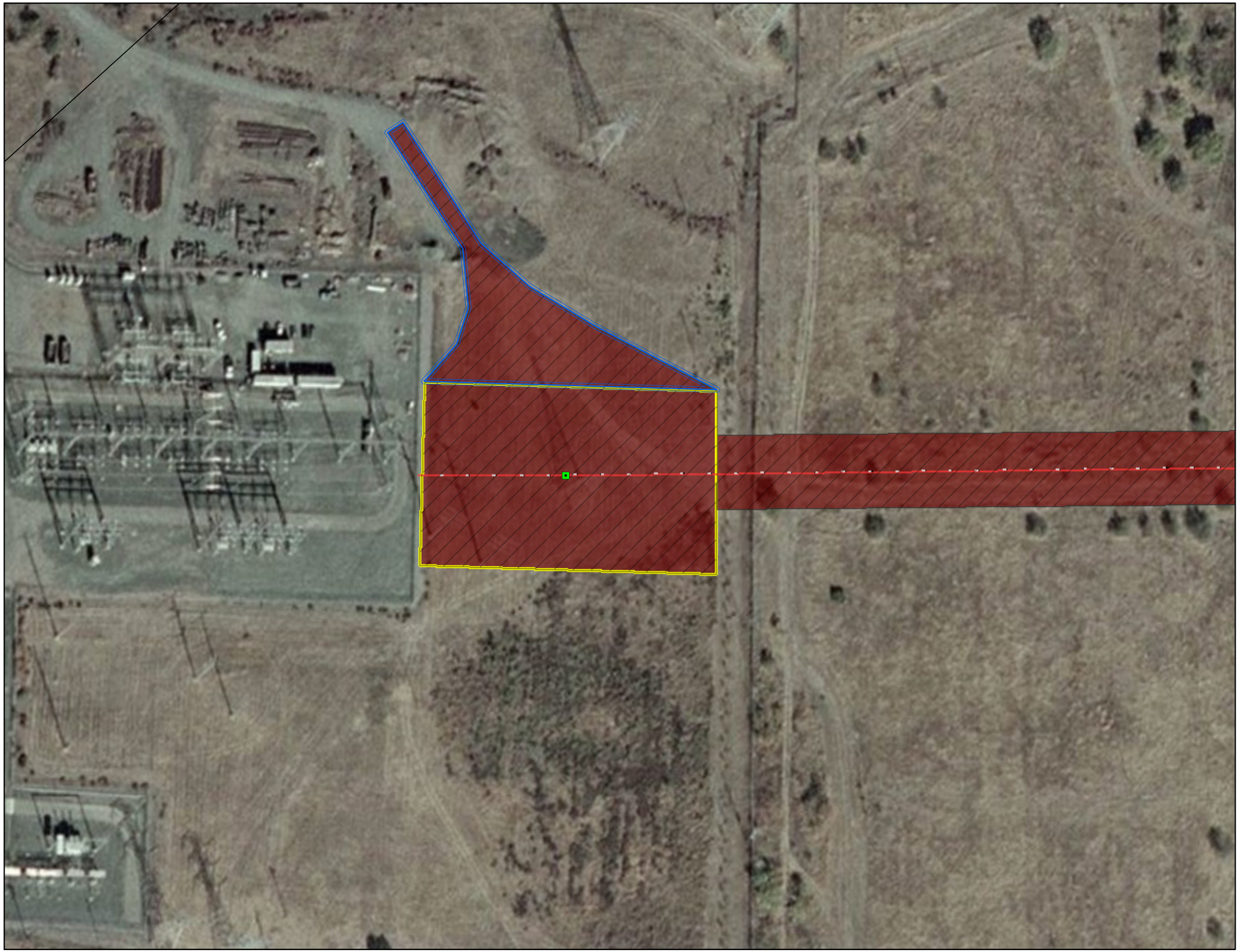
Land Cover Habitat Survey

- Non-native Woodland
- Riparian
- Ruderal
- Urban
- Vineyard
- Wetland
- ESA Fencing
- Temporary Impacts
- Permanent Impacts
- Construction Laydown Area
- Pull Site
- Access Road
- New Access Road
- GGS Upland Habitat (200FT Buffer)
- Water Edge

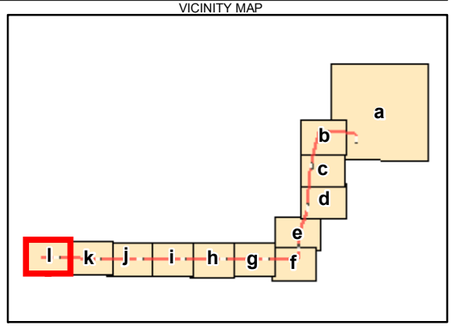
N

0 50 100 200
Feet

Figure 3k
Land Cover Habitat Survey
Oakley Generating Station
Oakley, California



VICINITY MAP



LEGEND

- TOWER LOCATIONS
- PROPOSED 230kV TRANMISSION LINE
- Sanitary Sewer Force Main
- Wetland E Conservation Easement

Land Cover Habitat Survey

- Non-native Woodland
- Riparian
- Ruderal
- Urban
- Vineyard
- Wetland
- ESA Fencing
- Temporary Impacts
- Permanent Impacts
- Construction Laydown Area
- Pull Site
- Access Road
- New Access Road
- GGS Upland Habitat (200FT Buffer)
- Water Edge

N

0 50 100 200
Feet

Figure 3l
Land Cover Habitat Survey
Oakley Generating Station
Oakley, California

This map was compiled from various scale source data and maps and is intended for use as only an approximate representation of actual locations.

N

0 1,000 2,000

Feet

FIGURE 4
TRANSMISSION TOWER LOCATIONS

Oakley Generating Station
Oakley, California

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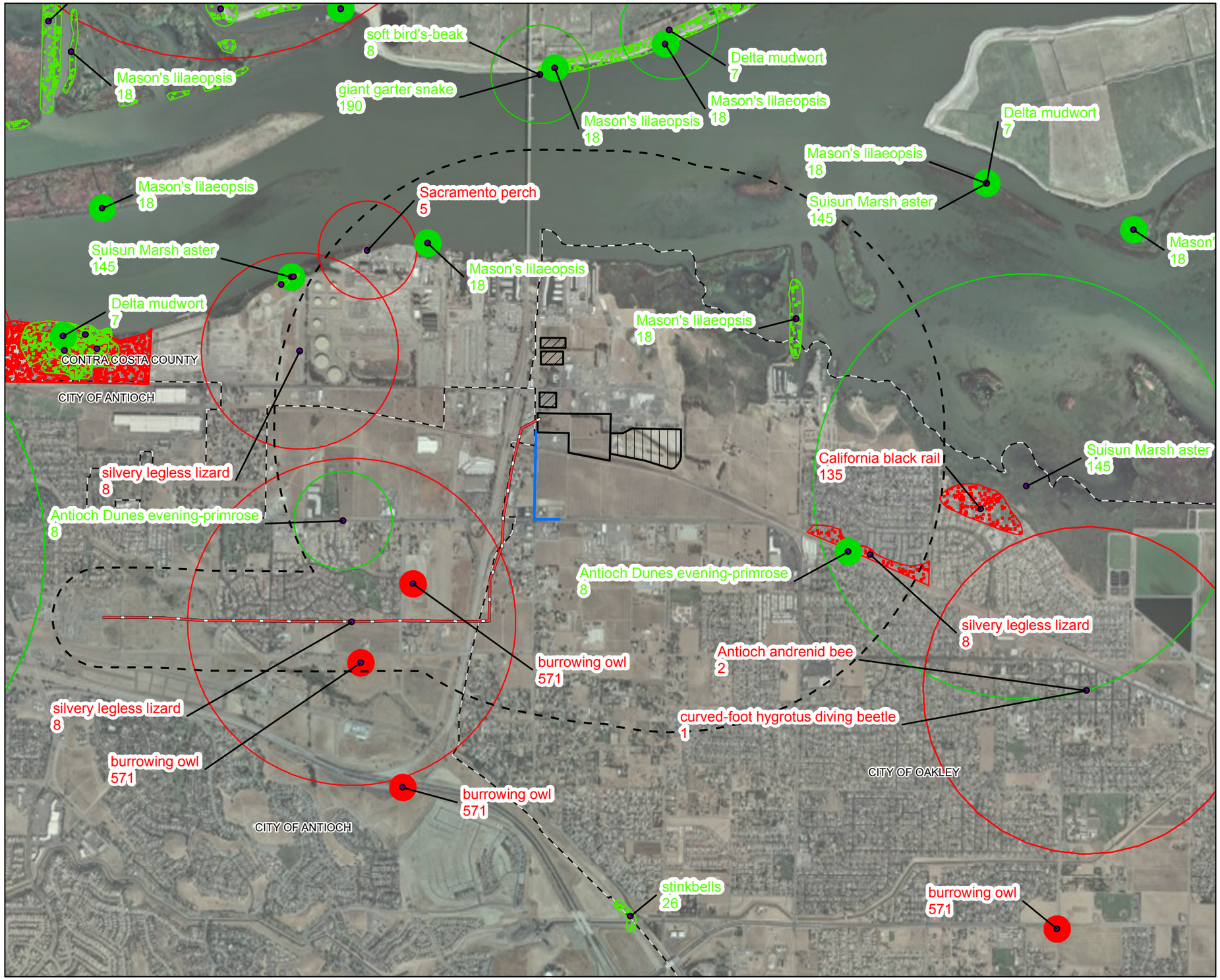

LEGEND

- SANITARY SEWER FORCE MAIN
- EXISTING 60kV TRANSMISSION LINE
- DIRT STOCKPILE AREAS
- LAYDOWN AREA
- PROJECT SITE
- CITY LIMITS
- BUFFER

CNDDB DATA MAY 2010

- PLANT (80m)
- PLANT (SPECIFIC)
- PLANT (NON-SPECIFIC)
- PLANT (CIRCULAR)
- ANIMAL (80m)
- ANIMAL (SPECIFIC)
- ANIMAL (NON-SPECIFIC)
- ANIMAL (CIRCULAR)

Notes:
1. Source: California Dept. of Fish and Game, California Natural Diversity Database (CNDDB) May, 2010.
2. 1 mile around Project Site, 1000 feet around existing Transmission Corridor.

This map was compiled from various scale source data and maps and is intended for use as only an approximate representation of actual locations.

N

0 1,000 2,000
Feet

FIGURE 5
SPECIAL-STATUS SPECIES WITHIN THE OGS SURVEY AREA
OAKLEY GENERATING STATION
OAKLEY, CALIFORNIA

Attachment 1
June 2009 and April 2010 Rare Plant Surveys

Contra Costa Generating Station Botanical Survey Results
June 3, 2009

Virginia Dains, Consulting Botanist
3371 Ayres Holmes Road
Auburn, Ca 95602

530-888-9180/geobot@hughes.net

Background

Methods

Field surveys of the proposed CCGS project site were conducted by botanist Virginia Dains and CH2M Hill biologist Michael Clary on March 25, 2009. Prior to the March field surveys, a regional list of special status plants was compiled (Table 1). Those special status plants with general habitat requirements and distributions that occur within 1 mile of the CCGS site were considered target species for field surveys and site-specific habitat assessments (Table 2).

The purpose of the field survey was to look for sensitive plant species during the early flowering season and assess habitat suitability for other sensitive plant species within the 42-acre facility. An assessment of habitat for special status plants within a 1-mile radius of the proposed CCGS site was also conducted.

All of the CCGS proposed work areas within the 42-acre project site were surveyed on foot. Habitats outside the facility including the electrical transmission line and private inaccessible lands within one mile of the CCGS site were surveyed from the roadway with the help of a 1-inch=2,000 foot scale true color aerial photograph that aided in the identification of potential rare plant habitats. Specific attention was given to the presence of wetlands, natural landforms, and historic or known locations of special status plants. A list of plant species observed during the field survey was compiled and is attached.

Findings

The project site includes buildings and roads with horticultural plantings and other disturbed industrial areas supporting introduced annual grassland vegetation. Vineyards and railroad sidings adjacent to the industrial site are included in the CCGS study area. Isolated and shallow wetland depressions that collect local run-off are found in the northwest portion of the property. These support ryegrass (*Lolium perenne*), salt grass (*Distichlis spicata*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), rabbits foot grass (*Polypogon monspeliensis*), decadent stands of tule (*Scirpus acutis*), Himalayan berry (*Rubus discolor*) and Goodding's willow (*Salix gooddingii*). A ponded

wetland that was created for mitigation of wetland impacts off-site is found adjacent to the southwest corner of the property. Soils throughout the site are derived from aeolian deposits of riverine sediments that comprise the Delhi sand soil series (Welch 1977). The proposed CCGS site supports no natural topography or undisturbed soil.

Important natural habitats supporting rare plant populations are found within a 1-mile radius of the proposed CCGS facility. These include freshwater marsh and inland stabilized dunes. Special status plants known to occur in these habitats were included on the target list of species potentially occurring on the CCGS site.

As indicated in Table 2, fifteen of the 59 special status plant species from the region had potential to occur within one mile of the project site. None of the early flowering sensitive plant species were observed during the March field survey. Based on habitat assessments made during the field survey, none of the later flowering species are expected to occur within any the CCGS work areas.

Several of the plant species on the target list for the vicinity of the project require specific habitats that are not present on the site. Twelve of the fifteen species known or potentially occurring within one mile of the project site are restricted to fresh or brackish water marsh habitats. No such habitat is found on the CCGS project site. Disturbed seasonal wetlands are present, but do not support a native marsh habitat community suitable for these species.

Three of the plants of local concern are known from sandy soils that correspond to those on the CCGS property. Two federally and state listed species, Contra Costa wallflower (*Erysimum capitatum* var. *angustatum*) and Antioch Dunes evening-primrose (*Oenothera deltoides* ssp. *howellii*), inhabit interior stabilized dunes. These are preserved natural landforms that are not present on the site. Historic locations for Antioch Dunes evening primrose are found elsewhere in the vicinity of the project, though changes in land use have led to the loss of these populations. Both of these species flower in the early spring and would have been identifiable during the March surveys. Neither of these species were present on the CCGS site.

Hoover's cryptantha (*Cryptantha hooveri*) is an annual plant thought to occur on stabilized dunes, though no populations of the plant are currently known and it is thought to be extinct. Recorded flowering dates for this species begin in April. During the late March survey, this species would have been identifiable vegetatively to the generic level, even if not in flower. No plants were recorded from the CCGS site that could be attributed to the *Cryptantha* or closely related *Plagiobothrys* genus. While this is annual plant and its population my vary from year to year, it is highly unlikely that populations may exist on the CCGS property and been undetected during 2009 surveys.

Summary

No special status plants were found in CCGS work areas during early spring 2009 surveys. The timing of these surveys coincided with the flowering period of local species of concern including the federally listed Antioch Dunes evening primrose and Contra Costa wallflower. These species are known to occur within one mile of the project area in protected natural areas. Other local species of concern are restricted to wetland habitats not found on the site. No mitigation or additional botanical surveys should be required for this project.

Welch, LE. 1977. Soil Survey of Contra Costa County, California US Department of Agriculture Soil Conservation Service in cooperation with University of California Agricultural Experiment Station

TABLE 1
Regional List of Special-status Plants

Scientific Name Common Name	Status Federal	 State	 CNPS List	 ECC HCP/ NCCP	Habitat Description	Potential Presence in the CCGS 1-mile
Bryophytes						
Bryaceae						
Anomobryum julaceum slender silver moss			2.2	No	Occurs in Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest/damp rock and soil on outcrops, usually on roadcuts. Elevation 100 to 1000 meters. (CNPS 2009)	None. No appropriate habitat present.
Pottiaceae						
Didymodon norrisii Norris' beard moss			2.2	No	Occurs in Cismontane woodland, Lower montane coniferous forest/intermittently mesic, rock. Elevation 600 to 1973 meters. (CNPS 2009)	None. No appropriate habitat present.
Triquetrella californica coastal triquetrella			1B.2	No	Occurs in Coastal bluff scrub, Coastal scrub/soil. Elevation 10 to 100 meters. (CNPS 2009)	None. No appropriate habitat present.
Monocots						
Alismataceae						
Sagittaria sanfordii Sanford's arrowhead			1B.2	No	Occurs in marshes and swamps (assorted shallow freshwater). Blooms May-October. Elevation 0 to 650 meters. (CNPS 2009)	Low. No known local occurrences, salt influence in ditches may preclude establishment.
Cyperaceae						
Carex comosa bristly sedge			2.1	No	Occurs in Coastal prairie, marshes and swamps (lake margins), Valley and foothill grassland. Blooms May-September. Elevation 0 to 625 meters. (CNPS 2009)	Low. No known local occurrences. Marsh habitat is recent or altered.

TABLE 1
Regional List of Special-status Plants

Scientific Name Common Name	Status Federal	 State	 CNPS List	 ECC HCP/ NCCP	Habitat Description	Potential Presence in the CCGS 1-mile
Carex vulpinoidea brown fox sedge			2.2	No	Occurs in marshes and swamps (freshwater), Riparian woodland. Blooms May-June. Elevation 30 to 1200 meters. (CNPS 2009)	None. No appropriate habitat present.
Liliaceae						
Calochortus pulchellus Mt. Diablo fairy-lantern			1B.2	Yes	Occurs in Chaparral, Cismontane woodland, Riparian woodland, Valley and foothill grassland. Blooms April-June. Elevation 30 to 840 meters. (CNPS 2009)	None. No appropriate habitat present.
Fritillaria liliacea fragrant fritillary			1B.2	No	Occurs in Cismontane woodland, Coastal prairie, Coastal scrub, Valley and foothill grassland/often serpentinite. Blooms February-April. Elevation 3 to 410 meters. (CNPS 2009)	None. No appropriate habitat present.
Hesperolinon breweri Brewer's western flax			1B.2	Yes	Occurs in Chaparral, Cismontane woodland, Valley and foothill grassland/usually serpentinite. Blooms May-July. Elevation 30 to 900 meters. (CNPS 2009)	None. No appropriate habitat present.
Dicots						
Poaceae						
Neostapfia colusana Colusa grass	FT	SE	1B.1	No	Occurs in Vernal pools (adobe, large). Blooms May-August. Elevation 5 to 200 meters. (CNPS 2009)	None. No appropriate habitat present.
Apiaceae						
Cicuta maculata var. bolanderi Bolander's water-hemlock			2.1	No	Occurs in marshes and swamps in coastal, fresh or brackish water. Blooms July-September. Elevation 0 to 200 meters. (CNPS 2009)	Low. Habitat is present, but no known local occurrences.

TABLE 1
Regional List of Special-status Plants

Scientific Name Common Name	Status Federal	 State	 CNPS List	 ECC HCP/ NCCP	Habitat Description	Potential Presence in the CCGS 1-mile
Eryngium racemosum Delta button-celery		SE	1B.1	No	Occurs in Riparian scrub (vernally mesic clay depressions). Blooms June-September. Elevation 3 to 30 meters. (CNPS 2009)	None. No clay soil habitats present.
Lilaeopsis masonii Mason's lilaeopsis		SR	1B.1	No	Occurs in marshes and swamps (brackish or freshwater), Riparian scrub. Blooms April-November. Elevation 0 to 10 meters. (CNPS 2009)	Present. Populations are known from the Antioch area.
Sanicula saxatilis rock sanicle		SR	1B.2	No	Occurs in Broadleafed upland forest, Chaparral, Valley and foothill grassland/rocky. Blooms April-May. Elevation 620 to 1175 meters. (CNPS 2009)	None. No appropriate habitat present.
Asteraceae						
Blepharizonia plumosa big tarplant			1B.1	Yes	Occurs in Valley and foothill grassland. Blooms July-October. Elevation 30 to 505 meters. (CNPS 2009)	None. No appropriate habitat present.
Centromadia parryi ssp. congdonii Congdon's tarplant			1B.2	No	Occurs in Valley and foothill grassland (alkaline). Blooms May-October (Nov). Elevation 1 to 230 meters. (CNPS 2009)	None. No appropriate habitat present.
Centromadia parryi ssp. parryi pappose tarplant			1B.2	No	Occurs in Chaparral, Coastal prairie, Meadows and seeps, marshes and swamps (coastal salt), Valley and foothill grassland (vernally mesic)/often alkaline. Blooms May-November. Elevation 2 to 420 meters. (CNPS 2009)	None. No appropriate habitat present.
Helianthella castanea Diablo helianthella			1B.2	Yes	Occurs in Broadleafed upland forest, Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland, Valley and foothill grassland. Blooms March-June. Elevation 60 to 1300 meters. (CNPS 2009)	None. No appropriate habitat present.

TABLE 1
Regional List of Special-status Plants

Scientific Name Common Name	Status Federal	 State	 CNPS List	 ECC HCP/ NCCP	Habitat Description	Potential Presence in the CCGS 1-mile
Isocoma arguta Carquinez goldenbush			1B.1	No	Occurs in Valley and foothill grassland (alkaline). Blooms August-December. Elevation 1 to 20 meters. (CNPS 2009)	None. No appropriate habitat present.
Lasthenia conjugens Contra Costa goldfields	FE		1B.1	No	Occurs in Cismontane woodland, Playas (alkaline), Valley and foothill grassland, Vernal pools/mesic. Blooms March-June. Elevation 0 to 470 meters. (CNPS 2009)	None. No appropriate habitat present.
Madia radiata showy golden madia			1B.1	Yes	Occurs in Cismontane woodland, Valley and foothill grassland. Blooms March-May. Elevation 25 to 900 meters. (CNPS 2009)	None. No appropriate habitat present.
Senecio aphanactis chaparral ragwort			2.2	No	Occurs in Chaparral, Cismontane woodland, Coastal scrub/sometimes alkaline. Blooms January-April. Elevation 15 to 800 meters. (CNPS 2009)	None. No appropriate habitat present.
Symphyotrichum lentum Suisun Marsh aster			1B.2	No	Occurs in Marshes and swamps (brackish and freshwater). Blooms May-November. Elevation 0 to 3 meters. (CNPS 2009)	Present. Known occurrences in the Antioch area.
Boraginaceae						
Amsinckia grandiflora large-flowered fiddleneck	FE	SE	1B.1	No	Occurs in Cismontane woodland, Valley and foothill grassland. Blooms April-May. Elevation 275 to 550 meters. (CNPS 2009)	None. No appropriate habitat present.
Cryptantha hooveri Hoover's cryptantha			1A	No	Occurs in Inland dunes, Valley and foothill grassland (sandy). Blooms April-May. Elevation 9 to 150 meters. (CNPS 2009)	Low. Potential habitat may exist on interior stabilized dunes. Plant is considered extinct.
Plagiobothrys hystriculus bearded popcorn-flower			1B.1	No	Occurs in Valley and foothill grassland (mesic), Vernal pools margins/often vernal swales. Blooms April-May. Elevation 0 to 274 meters. (CNPS 2009)	None. No appropriate habitat present.

TABLE 1
Regional List of Special-status Plants

Scientific Name Common Name	Status Federal	 State	 CNPS List	 ECC HCP/ NCCP	Habitat Description	Potential Presence in the CCGS 1-mile
Brassicaceae						
Erysimum capitatum var. angustatum Contra Costa wallflower	FE	SE	1B.1	No	Occurs in Inland dunes. Blooms March-July. Elevation 3 to 20 meters. (CNPS 2009)	Present. Known occurrences in protected sites on interior stabilized dunes.
Streptanthus albidus ssp. peramoenus most beautiful jewel-flower			1B.2	No	Occurs in Chaparral, Cismontane woodland, Valley and foothill grassland/serpentinite. Blooms (March) April-September (Oct). Elevation 94 to 1000 meters. (CNPS 2009)	None. No appropriate habitat present.
Streptanthus hispidus Mt. Diablo jewel-flower			1B.3	No	Occurs in Chaparral, Valley and foothill grassland/rocky. Blooms March-June. Elevation 365 to 1200 meters. (CNPS 2009)	None. No appropriate habitat present.
Tropidocarpum capparideum caper-fruited tropidocarpum			1B.1	No	Occurs in Valley and foothill grassland (alkaline hills). Blooms March-April. Elevation 1 to 455 meters. (CNPS 2009)	None. No appropriate habitat present.
Campanulaceae						
Campanula exigua chaparral harebell			1B.2	No	Occurs in Chaparral (rocky, usually serpentinite). Blooms May-June. Elevation 275 to 1250 meters. (CNPS 2009)	None. No appropriate habitat present.
Downingia pusilla dwarf downingia			2.2	No	Occurs in Valley and foothill grassland (mesic), Vernal pools. Blooms March-May. Elevation 1 to 445 meters. (CNPS 2009)	None. No appropriate habitat present.
Caprifoliaceae						
Viburnum ellipticum oval-leaved viburnum			2.3	No	Occurs in Chaparral, Cismontane woodland, Lower montane coniferous forest. Blooms May-June. Elevation 215 to 1400 meters. (CNPS 2009)	None. No appropriate habitat present.

TABLE 1
Regional List of Special-status Plants

Scientific Name Common Name	Status Federal	 State	 CNPS List	 ECC HCP/ NCCP	Habitat Description	Potential Presence in the CCGS 1-mile
Chenopodiaceae						
Atriplex cordulata heartscale			1B.2	No	Occurs in Chenopod scrub, Meadows and seeps, Valley and foothill grassland (sandy)/saline or alkaline. Blooms April-October. Elevation 1 to 375 meters. (CNPS 2009)	None. No appropriate habitat present.
Atriplex depressa brittlescale			1B.2	Yes	Occurs in Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland, Vernal pools/alkaline, clay. Blooms April-October. Elevation 1 to 320 meters. (CNPS 2009)	None. No appropriate habitat present.
Atriplex joaquiniana San Joaquin spearscale			1B.2	Yes	Occurs in Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland/alkaline. Blooms April-October. Elevation 1 to 835 meters. (CNPS 2009)	None. No appropriate habitat present.
Convolvulaceae						
Calystegia atriplicifolia ssp. buttensis Butte County morning-glory			1B.2	No	Occurs in Chaparral, Lower montane coniferous forest/rocky, sometimes roadside. Blooms May-July. Elevation 600 to 1524 meters. (CNPS 2009)	None. No appropriate habitat present.
Ericaceae						
Arctostaphylos auriculata Mt. Diablo manzanita			1B.3	Yes	Occurs in Chaparral (sandstone), Cismontane woodland. Blooms January-March. Elevation 135 to 650 meters. (CNPS 2009)	None. No appropriate habitat present.
Arctostaphylos manzanita ssp. laevigata Contra Costa manzanita			1B.2	No	Occurs in Chaparral (rocky). Blooms January-March (April). Elevation 500 to 1100 meters. (CNPS 2009)	None. No appropriate habitat present.

TABLE 1
Regional List of Special-status Plants

Scientific Name Common Name	Status Federal	 State	 CNPS List	 ECC HCP/ NCCP	Habitat Description	Potential Presence in the CCGS 1-mile
Fabaceae						
Astragalus tener var. tener alkali milk-vetch			1B.2	No	Occurs in Playas, Valley and foothill grassland (adobe clay), Vernal pools/alkaline. Blooms March-June. Elevation 1 to 60 meters. (CNPS 2009)	None. No appropriate habitat present.
Lathyrus jepsonii var. jepsonii Delta tule pea			1B.2	No	Occurs in marshes and swamps (freshwater and brackish). Blooms May-July(September). Elevation 0 to 4 meters. (CNPS 2009)	Moderate. Habitat may be present, but no known local occurances.
Geraniaceae						
California macrophylla round-leaved filaree			1B.1	No	Occurs in Cismontane woodland, Valley and foothill grassland/clay. Blooms March-May. Elevation 15 to 1200 meters. (CNPS 2009)	None. No appropriate habitat present.
Hydrophyllaceae						
Phacelia phacelioides Mt. Diablo phacelia			1B.2	No	Occurs in Chaparral, Cismontane woodland/rocky. Blooms April-May. Elevation 500 to 1370 meters. (CNPS 2009)	None. No appropriate habitat present.
Juglandaceae						
Juglans hindsii Northern California black walnut			1B.1	No	Occurs in Riparian forest, Riparian woodland. Blooms April-May. Elevation 0 to 440 meters. (CNPS 2009)	None. No appropriate habitat present.
Lamiaceae						
Monardella antonina ssp. antonina San Antonio Hills monardella			3	No	Occurs in Chaparral, Cismontane woodland. Blooms June-August. Elevation 500 to 1000 meters. (CNPS 2009)	None. No appropriate habitat present.

TABLE 1
Regional List of Special-status Plants

Scientific Name Common Name	Status Federal	 State	 CNPS List	 ECC HCP/ NCCP	Habitat Description	Potential Presence in the CCGS 1-mile
Scutellaria galericulata marsh skullcap			2.2	No	Occurs in Lower montane coniferous forest, Meadows and seeps (mesic), marshes and swamps. Blooms June-September. Elevation 0 to 2100 meters. (CNPS 2009)	Low. Habitat may be present but no known local occurrences.
Scutellaria lateriflora side-flowering skullcap			2.2	No	Occurs in Meadows and seeps (mesic), marshes and swamps. Blooms July-September. Elevation 0 to 500 meters. (CNPS 2009)	Low. Habitat may be present but no known local occurrences.
Malvaceae						
Hibiscus lasiocarpus woolly rose-mallow			2.2	No	Occurs in marshes and swamps (freshwater). Blooms June-September. Elevation 0 to 120 meters. (CNPS 2009)	Moderate. Habitat is present but no known local occurrences.
Malacothamnus hallii Hall's bush-mallow			1B.2	No	Occurs in Chaparral, Coastal scrub. Blooms May-September (Oct). Elevation 10 to 760 meters. (CNPS 2009)	None. No appropriate habitat present.
Onagraceae						
Oenothera deltoides ssp. howellii Antioch Dunes evening-primrose	FE	SE	1B.1	No	Occurs in Inland dunes. Blooms March-September. Elevation 0 to 30 meters. (CNPS 2009)	Present. Known occurrences in protected sites on interior stabilized dunes.
Papaveraceae						
Eschscholzia rhombipetala diamond-petaled California poppy			1B.1	No	Occurs in Valley and foothill grassland (alkaline, clay). Blooms March-April. Elevation 0 to 975 meters. (CNPS 2009)	None. No appropriate habitat present.

TABLE 1
Regional List of Special-status Plants

Scientific Name Common Name	Status Federal	 State	 CNPS List	 ECC HCP/ NCCP	Habitat Description	Potential Presence in the CCGS 1-mile
Polemoniaceae						
Eriastrum brandegeae Brandegee's eriastrum			1B.2	No	Occurs in Chaparral, Cismontane woodland/volcanic, sandy. Blooms April-August. Elevation 305 to 1030 meters. (CNPS 2009)	None. No appropriate habitat present.
Polygonaceae						
Eriogonum truncatum Mt. Diablo buckwheat			1B.1	No	Occurs in Chaparral, Coastal scrub, Valley and foothill grassland/sandy. Blooms April-September (Nov-December). Elevation 3 to 350 meters. (CNPS 2009)	None. No appropriate habitat present.
Potamogetonaceae						
Potamogeton zosteriformis eel-grass pondweed			2.2	No	Occurs in marshes and swamps (assorted freshwater). Blooms June-July. Elevation 0 to 1860 meters. (CNPS 2009)	Low. No local occurrences. Freshwater wetland habitats limited.
Ranunculaceae						
Delphinium californicum ssp. interius Hospital Canyon larkspur			1B.2	No	Occurs in Chaparral (openings), Cismontane woodland(mesic). Blooms April-June. Elevation 230 to 1095 meters. (CNPS 2009)	None. No appropriate habitat present.
Delphinium recurvatum recurved larkspur			1B.2	Yes	Occurs in Chenopod scrub, Cismontane woodland, Valley and foothill grassland/alkaline. Blooms March-June. Elevation 3 to 750 meters. (CNPS 2009)	None. No appropriate habitat present.
Scrophulariaceae						
Cordylanthus mollis ssp. mollis soft bird's-beak	FE	SR	1B.2	No	Occurs in marshes and swamps (coastal salt). Blooms July-November. Elevation 0 to 3 meters. (CNPS 2009)	Present. Known occurrence in the north bank of the San Joaquin River

TABLE 1
Regional List of Special-status Plants

Scientific Name Common Name	Status Federal	 State	 CNPS List	 ECC HCP/ NCCP	Habitat Description	Potential Presence in the CCGS 1-mile
Cordylanthus nidularius Mt. Diablo bird's-beak		SR	1B.1	No	Occurs in Chaparral (serpentinite). Blooms July-August. Elevation 600 to 800 meters. (CNPS 2009)	None. No appropriate habitat present.
Limosella subulata Delta mudwort			2.1	No	Occurs in marshes and swamps. Blooms May-August. Elevation 0 to 3 meters. (CNPS 2009)	High. Local occurrences in the San Joaquin river upstream of Antioch.

Status Notes:
Federal Status
FE = federally listed as endangered
FT = federally listed as threatened

State Status
SE = state listed as endangered
ST = state listed as threatened
SR = state listed as rare

California Native Plant Society (CNPS) Status
List 1A = plants presumed extinct in California
List 1B = plants rare, threatened, or endangered in California, but more common elsewhere
List 2 = plants rare, threatened, or endangered in California, but more common elsewhere
List 3 = plants for which we need more information, a review list

CNPS List: Threat Code extensions and their meanings:
1 - Seriously endangered in California over 80% of occurrences threatened / high degree and immediacy of threat)
.2 – Fairly endangered in California (20-80% occurrences threatened)
.3 – Not very endangered in California (<20% of occurrences threatened)

East Contra Costa HCP/NCCP (ECC HCP/NCCP)
Yes = covered species
No = not a covered species

TABLE 2
Special-status Plants with General Habitat Requirements and Distributions that Occur Within 1 Mile of the CCGS Site

Scientific Name Common Name	Status				Habitat Description	Potential Presence CCGS project site
	Federal	State	CNPS List	ECC HCP/ NCCP		
Monocots						
Alismataceae						
Sagittaria sanfordii Sanford's arrowhead			1B.2	No	Occurs in marshes and swamps (assorted shallow freshwater). Blooms May-October. Elevation 0 to 650 meters. (CNPS 2009)	None. No marsh or swamp habitat present.
Cyperaceae						
Carex comosa bristly sedge			2.1	No	Occurs in Coastal prairie, marshes and swamps (lake margins), Valley and foothill grassland. Blooms May-September. Elevation 0 to 625 meters. (CNPS 2009)	None. No marsh or swamp habitat present.
Dicots						
Apiaceae						
Cicuta maculata var. bolanderi Bolander's water-hemlock			2.1	No	Occurs in marshes and swamps in coastal, fresh or brackish water. Blooms July-September. Elevation 0 to 200 meters. (CNPS 2009)	None. No marsh or swamp habitat present.
Lilaeopsis masonii Mason's lilaeopsis		SR	1B.1	No	Occurs in marshes and swamps (brackish or freshwater), Riparian scrub. Blooms April-November. Elevation 0 to 10 meters. (CNPS 2009)	None. No marsh or swamp habitat present.
Asteraceae						
Symphyotrichum lentum Suisun Marsh aster			1B.2	No	Occurs in Marshes and swamps (brackish and freshwater). Blooms May-November. Elevation 0 to 3 meters. (CNPS 2009)	None. No marsh or swamp habitat present.
Boraginaceae						
Cryptantha hooveri Hoover's cryptantha			1A	No	Occurs in Inland dunes, Valley and foothill grassland (sandy). Blooms April-May. Elevation 9 to 150 meters. (CNPS 2009)	None. Potential habitat surveyed in late March. No plants attributed to genus *Cryptantha* or *Plagiobothrys* found.

TABLE 2
Special-status Plants with General Habitat Requirements and Distributions that Occur Within 1 Mile of the CCGS Site

Scientific Name Common Name	Status				Habitat Description	Potential Presence CCGS project site
	Federal	State	CNPS List	ECC HCP/ NCCP		
Brassicaceae						
Erysimum capitatum var. angustatum Contra Costa wallflower	FE	SE	1B.1	No	Occurs in Inland dunes. Blooms March-July. Elevation 3 to 20 meters. (CNPS 2009)	Not present. No plants found during surveys of disturbed sandy soils in March.
Fabaceae						
Lathyrus jepsonii var. jepsonii Delta tule pea			1B.2	No	Occurs in marshes and swamps (freshwater and brackish). Blooms May-July(September). Elevation 0 to 4 meters. (CNPS 2009)	None. No marsh or swamp habitat present.
Lamiaceae						
Scutellaria galericulata marsh skullcap			2.2	No	Occurs in Lower montane coniferous forest, Meadows and seeps (mesic), marshes and swamps. Blooms June-September. Elevation 0 to 2100 meters. (CNPS 2009)	None. No marsh or swamp habitat present.
Scutellaria lateriflora side-flowering skullcap			2.2	No	Occurs in Meadows and seeps (mesic), marshes and swamps. Blooms July-September. Elevation 0 to 500 meters. (CNPS 2009)	None. No marsh or swamp habitat present.
Malvaceae						
Hibiscus lasiocarpus woolly rose-mallow			2.2	No	Occurs in marshes and swamps (freshwater). Blooms June-September. Elevation 0 to 120 meters. (CNPS 2009)	None. No marsh or swamp habitat present.
Onagraceae						
Oenothera deltoides ssp. howellii Antioch Dunes evening-primrose	FE	SE	1B.1	No	Occurs in Inland dunes. Blooms March-September. Elevation 0 to 30 meters. (CNPS 2009)	Not present. No plants found during surveys of disturbed sandy soils in March

TABLE 2
Special-status Plants with General Habitat Requirements and Distributions that Occur Within 1 Mile of the CCGS Site

Scientific Name Common Name	Status Federal	 State	 CNPS List	 ECC HCP/ NCCP	Habitat Description	Potential Presence CCGS project site
Potamogetonaceae						
Potamogeton zosteriformis eel-grass pondweed			2.2	No	Occurs in marshes and swamps (assorted freshwater). Blooms June-July. Elevation 0 to 1860 meters. (CNPS 2009)	None. No marsh or swamp habitat present.
Scrophulariaceae						
Cordylanthus mollis ssp. mollis soft bird's-beak	FE	SR	1B.2	No	Occurs in marshes and swamps (coastal salt). Blooms July-November. Elevation 0 to 3 meters. (CNPS 2009)	None. No marsh or swamp habitat present.
Limosella subulata Delta mudwort			2.1	No	Occurs in marshes and swamps. Blooms May-August. Elevation 0 to 3 meters. (CNPS 2009)	None. No marsh or swamp habitat present.

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No = not a covered species

TABLE 3
Observed Plant List

Family	*Scientific Name*	Common Name
Aizoaceae		
	Tetragonia tetragonioides	New Zealand spinach
	Carpobrotus edulis	Iceplant
Amaranthaceae		
	Amaranthus blitum	purple amaranth
Anacardiaceae		
	Schinus molle	Peruvian peppertree
Apocynaceae		
	Nerium oleander	oleander
Araliaceae		
	Hedera helix	English ivy
Arecaceae		
	Washingtonia filifera	California fan palm
Asteraceae		
	Baccharis pilularis	coyote brush
	Carduus pycnocephalus	Italian thistle
	Centaurea melitensis	tocalote
	Cotula coronopifolia	brass-buttons
	Heterotheca grandiflora	telegraph weed
	Hypochaeris radicata	rough cat's ear
	Lactuca serriola	prickly lettuce
	Senecio vulgaris	common groundsel
	Silybum marianum	milk thistle
	Sonchus asper	spiny sowthistle
Boraginaceae		
	Amsinckia menziesii var. intermedia	orange-flowered Menzies' fiddleneck
Brassicaceae		
	Brassica nigra	black mustard
	Capsella bursa-pastoris	shepherd's purse
Caryophyllaceae		
	Cerastium glomeratum	mouse-ear chickweed
	Stellaria media	common chickweed
	Spergula arvensis	corn spurry
Chenopodiaceae		
	Chenopodium chenopodioides	goosefoot
	Salsola tragus	prickly Russian Thistle

TABLE 3
Observed Plant List

Family	*Scientific Name*	Common Name
Cucurbitaceae		
	Marah fabaceus	wild-cucumber
Cyperaceae		
	Schoenoplectus acutus	hardstem bulrush
Fabaceae		
	Lathyrus odoratus	sweet pea
	Lotus humistratus	short-podded lotus
	Lotus scoparius	deerweed
	Lotus wrangelianus	Chilean lotus
	Lupinus bicolor	miniature lupine
	Lupinus ludovicianus	Bush lupine
	Medicago polymorpha	California burclover
	Medicago sativa	alfalfa
	Vicia americana	pea-vine
	Vicia sativa	spring vetch
Geraniaceae		
	Erodium botrys	long-beaked filaree
	Erodium cicutarium	red-stemmed filaree
	Erodium moschatum	white-stemmed filaree
Lamiaceae		
	Lamium amplexicaule	giraffe head
Liliaceae		
	Asparagus officinalis ssp. officinalis	asparagus
Lythraceae		
	Lythrum hyssopifolium	hyssop loosestrife
Malvaceae		
	Malva parviflora	cheeseweed mallow
Myrtaceae		
	Eucalyptus globulus	blue gum
	Eucalyptus tereticornis	forest red gum
Onagraceae		
	Camissonia micrantha	small-flowered evening-primrose
	Epilobium brachycarpum	autumn willowweed
Oxalidaceae		
	Oxalis pes-caprae	Bermuda buttercup

TABLE 3
Observed Plant List

Family	*Scientific Name*	Common Name
Pinaceae		
	Pinus sp.	horticultural pine
Plantaginaceae		
	Plantago lanceolata	English plantain
	Plantago major	common plantain
Poaceae		
	Avena barbata	slender wild oats
	Bromus diandrus	ripgut brome
	Bromus madritensis ssp. rubens	red brome
	Bromus rubens	
	Cynodon dactylon	Bermudagrass
	Distichlis spicata	saltgrass
	Hordeum murinum	mouse barley
	Lolium perenne	English rye-grass
	Paspalum dilatatum	dallis grass
	Poa annua	annual blue grass
	Polypogon monspeliensis	annual beard grass
	Vulpia myuros	rattail fescue
Polygonaceae		
	Polygonum arenastrum	common knotweed
	Rumex crispus	curly dock
Portulacaceae		
	Calandrinia ciliata	red maids
	Claytonia perfoliata	miner's lettuce
Rosaceae		
	Malus sylvestris	domestic apple
	Prunus dulcis	almond
	Rubus discolor	Himalaya-berry
	Rubus ursinus	California blackberry
Salicaceae		
	Salix gooddingii	Goodding's black willow
Simaroubaceae		
	Ailanthus altissima	tree-of-heaven
Typhaceae		
	Typha latifolia	broadleaf cattail

TABLE 3
Observed Plant List

Family	*Scientific Name*	Common Name
Urticaceae		
	Urtica urens	dwarf nettle
Viscaceae		
	Phoradendron macrophyllum	big leaf mistletoe
Vitaceae		
	Vitus vinifera	*Wine grape*

Oakley Generating Station, Transmission Line Biological Field Surveys—April 2010

PREPARED FOR: Radback Energy

PREPARED BY: Russell Huddleston/CH2M HILL

COPIES: Doug Davy /CH2M HILL
Keith McGregor/CH2M HILL
Richard Crowe/CH2M HILL

DATE: May 7, 2010

Introduction

Contra Costa Generating Station, LLC, proposes to construct a 624-megawatt power generating plant in Oakley, Contra Costa County, California. The facility will be connected with the regional electrical grid by a 2.4-mile-long, single-circuit transmission line between the Oakley Generating Station switchyard and the existing Pacific Gas and Electric Company's (PG&E's) 230-kilovolt (kV) Contra Costa Substation. The interconnection will be achieved by upgrading and replacing the existing PG&E 60-kV transmission lines with new towers and conductors within the 80-foot-wide transmission line right-of-way (ROW) that runs between the project site and the substation. This memorandum documents the methods and findings of a biological survey for special-status plant species and potential wetland resources along the 2.4-mile transmission line ROW. Information on the project location and general environmental setting are provided below. Survey methods and results are presented in the following sections.

Project Location

The Oakley Generating Station will be located on a 21.95-acre parcel near the intersection of Bridgehead Road and Wilbur Avenue within the city limits of Oakley, California. This parcel is currently part of a larger, 210-acre parcel owned by E. I. du Pont de Nemours and Company in an area zoned Heavy Industrial. The new transmission line will be located entirely within the existing PG&E transmission line ROW and will extend from this facility site to the west across Bridgehead Road; the transmission line then parallels the eastern side of State Route (SR) 160 for approximately 0.75 mile. Approximately 0.1 mile north of Oakley Road, the alignment turns west, crossing over SR 160, and continues approximately 1.5 miles to the Contra Costa Substation. The location of the transmission line corridor is shown in Figure 1. Land uses in the project vicinity include industrial, vacant industrial, commercial, residential, walking paths, and agricultural.

Methods

Field surveys were conducted by CH2M HILL biologists Richard Crowe and Russell Huddleston on April 22, 2010. The entire 23.3-acre transmission line ROW was included in the assessment surveys, but specific attention was given to the areas immediately surrounding the existing tower locations. With the exception of some ornamental landscape plants, all (native or naturalized) plants observed were identified to the taxonomic level necessary to determine conservation status. Taxonomy follows the Jepson Manual (Hickman, 1993) and the current taxonomic nomenclature used by the Jepson Interchange (University of California, Berkeley, 2010).

Potential wetland areas were identified, characterized, and mapped on high-resolution aerial photographs.

Results

Vegetation and Special-status Plants

No special-status plants were observed during the April 2010 field surveys. Given the high level of disturbance and the lack of natural habitats in and around the ROW, the potential for special status plant species to occur is considered extremely low. A general description of vegetation and land use along the survey corridor is provided below.

The transmission line ROW is primarily located in developed, agricultural, and residential areas, as well as along significant transportation corridors (SR 160). Natural vegetation in these areas is primarily composed of plant species that adapted to high levels of disturbance such as non-native annual grasses and weedy forbs. A list of all plant species (excluding some horticultural landscape varieties) is included in Table 1. Descriptions of the land use and vegetation near the existing towers are provided below, starting with Tower #2. Tower #1 is located within the 21.95-acre parcel for the Oakley Generating Station.

Tower #2 is located along the southwestern edge of the Delta Diablo Sanitation District's Pump Station and near the base of the fill slope for SR 160. The existing tower is located in a cleared gravel area, but numerous small stems of tree of heaven (*Ailanthus altissima*) that had recently been cut were noted under and immediately surrounding the tower base. Vegetation in and around the transmission line ROW in this area is composed of numerous ruderal species, including rip-gut brome (*Bromus diandrus*), foxtail barley (*Hordeum murinum*), wild oats (*Avena barbata*), fescue (*Vulpia bromoides*), Italian ryegrass (*Lolium multiflorum*), yellow star thistle (*Centaurea solstitialis*), filaree (*Erodium botrys*), winter vetch (*Vicia villosa*), and black mustard (*Brassica nigra*). Numerous almond trees (*Prunus dulcis*) are found along the fill slope of SR 160, and a few small trees of heaven were noted along the western fence line of the pump station. South of the Atchison, Topeka, and Santa Fe Railroad tracks, the transmission line ROW passes through an industrial storage yard, a small business park and a hotel parking lot. Similar ruderal vegetation described above occurs along the western side of the transmission line ROW along the highway fill slope in the open undeveloped lots north of Main Street and in areas along the highway on- and off-ramps.

South of the SR 160 off-ramp, the habitat is a mixture of rural residential (landscaped) and vineyard habitat. The sandy soils associated with the vineyards in this area are maintained and were devoid of herbaceous plants at the time of the survey, but several large live oaks (*Quercus agrifolia*) are present throughout the vineyard.

West of SR 160, the transmission line ROW passes through a church parking lot, a rural residence, more vineyards, and a small section of a relatively new housing development with an existing paved walking trail. West of the housing development, the alignment crosses a former almond orchard. Most of the trees have since been removed in this area. Vegetation is predominantly non-native grasses and forbs such as rip-gut brome, foxtail barley, wild oats, black mustard, Italian thistle (*Carduus pycnocephalus*), and winter vetch.

Wetland Resources

One wetland area was identified along the existing transmission line ROW approximately 0.4 mile east of the Contra Costa Substation, just west of the housing development (Figures 2 through 4). This wetland and narrow riparian habitat is associated with a small unnamed creek that flows generally to the northwest for approximately 2.3 miles into the San Joaquin River. In this area, the creek emerges from a large set of culverts under Viera Avenue, which is adjacent to an existing walking trail and has an active flow channel that is approximately 20 feet wide. Less than 1 foot of flowing water was noted at the time of the survey, but debris and drift lines suggest that ordinary flows in this area reach upwards of 3 feet at times. Cattail (*Typha latifolia*) occurs throughout most of the flow channel in this area. Several red willow (*Salix laevigata*) trees are present along the outer edges on both sides of the creek.

FIGURE 2
Looking west along an existing walking trail off Viera Avenue. The proposed transmission line upgrade will clear span East Antioch Creek similar to the existing transmission lines.

FIGURE 3
Looking south toward culverts at Viera Avenue. Cattail wetland is within the creek channel, and red willow is along the banks.

FIGURE 4
Looking west at existing 60-kV transmission lines lattice tower along unnamed creek west of housing development. Red willow riparian habitat.

References

Hickman, James C. (editor). 1993. The Jepson Manual. University of California Press, Berkeley.

University of California, Berkeley. 2010. Jepson Online Interchange for California Floristics. Accessed May 7, 2010. Available at: http://ucjeps.berkeley.edu/active.html

TABLE 1
Plant Species Observed During the April 22, 2010, Field Survey of the Oakley Generating Station
2.4-mile Transmission Alignment

Scientific Name	Common Name	Native/ Non-native
Aizoaceae		
Carpobrotus edulis	Fig-marigold	Non-native
Apocynaceae		
Nerium oleander	Oleander	Non-native
Arecaceae		
Washingtonia filifera	California fan palm	Native
Asteraceae		
Carduus pycnocephalus	Italian thistle	Non-native
Chamomilla sauveolens	Pineapple weed	Non-native
Centaurea solstitialis	Yellow star-thistle	Non-native
Conyza canadensis	Horseweed	Native
Heterotheca grandiflora	Telegraph weed	Native
Lactuca saligna	Willow lettuce	Non-native
Lactuca serriola	Prickly lettuce	Non-native
Senecio vulgaris	Common groundsel	Non-native
Sonchus asper ssp. asper	Prickly sow thistle	Non-native
Tragopogon porrifolius	Salsify	Non-native
Boraginaceae		
Amsinckia menziesii	Rancher's fireweed	Native
Brassicaceae		
Brassica nigra	Black mustard	Non-native
Capsella bursa-pastoris	Shepherd's purse	Non-native
Lepidium latifolium	Perennial peppergrass	Non-native
Lepidium nitidum	Shining peppergrass	Native
Raphanus sativus	Wild Radish	Non-native
Caryophyllaceae		
Cerastium glomeratum	Mouse-ear chickweed	Non-native
Stellaria media	Common chickweed	Non-native
Chenopodiaceae		
Chenopodium album	Lamb's quarters	Non-native
Salsola tragus	Russian thistle	Non-native

TABLE 1
Plant Species Observed During the April 22, 2010, Field Survey of the Oakley Generating Station
2.4-mile Transmission Alignment

Scientific Name	Common Name	Native/ Non-native
Crassulaceae		
Crassula connata	Pygmy-weed	Native
Cucurbitaceae		
Marah fabaceus	California man-root	Native
Fabaceae		
Lotus purshianus	Spanish lotus	Native
Lupinus bicolor	Miniature lupine	Native
Medicago polymorpha	California burclover	Non-native
Melilotus albus	White sweetclover	Non-native
Robinia pseudoacacia	Black locust	Non-native
Trifolium hirtum	Rose clover	Non-native
Vicia sativa	Winter vetch	Non-native
Vicia villosa	Hairy vetch	Non-native
Fagaceae		
Quercus agrifolia	Coast live oak	Native
Geraniaceae		
Erodium botrys	Broadleaf filaree	Non-native
Erodium cicutarium	Red-stemmed filaree	Non-native
Geranium dissectum	Cut-leaf geranium	Non-native
Juglandaceae		
Juglans californica var. *hindsii*	Northern California black walnut	Native
Juglans regia	English walnut	Non-native
Juncaceae		
Juncus bufonius	Toad rush	Native
Malvaceae		
Malva nicaeensis	Bull mallow	Non-native
Myoporaceae		
Myoporum laetum	Ngaio tree	Non-native
Myrtaceae		
Callistemon rigidus	Bottlebrush tee	Non-native
Eucalyptus globulus	Blue gum	Non-native
Eucalyptus tereticornis.	Forest red gum	Non-native

TABLE 1
Plant Species Observed During the April 22, 2010, Field Survey of the Oakley Generating Station
2.4-mile Transmission Alignment

Scientific Name	Common Name	Native/ Non-native
Oleaceae		
Olea europaea	Olive	Non-native
Onagraceae		
Camissonia micrantha	Miniature suncup	Native
Epilobium sp.	Fireweed	Native
Papaveraceae		
Eschscholzia californica	California poppy	Native
Pinaceae		
Pinus canariensis	Canary Island pine	Non-native
Poaceae		
Avena barbata	Slender wild oat	Non-native
Bromus diandrus	Ripgut grass	Non-native
Bromus hordeaceus	Soft chess	Non-native
Cynodon dactylon	Bermuda grass	Non-native
Hordeum marinum	Mediterranean barley	Non-native
Hordeum murinum	Foxtail barley	Non-native
Lolium perenne	Perennial ryegrass	Non-native
Poa annua	Annual bluegrass	Non-native
Vulpia bromoides	Six-week's fescue	Non-native
Vulpia myuros	Rattail fescue	Non-native
Polygonaceae		
Polygonum arenastrum	Common knotweed	Non-native
Portulacaceae		
Calandrinia ciliata	Red maids	Native
Claytonia perfoliata	Miner's lettuce	Native
Rosaceae		
Prunus dulcis	Almond	Non-native
Rubus discolor	Himalayan blackberry	Non-native
Rubiaceae		
Galium aparine	Common bedstraw	Native
Salicaceae		
Populus balsamifera	Black cottonwood	Native

TABLE 1
Plant Species Observed During the April 22, 2010, Field Survey of the Oakley Generating Station
2.4-mile Transmission Alignment

Scientific Name	Common Name	Native/ Non-native
Salix lasiolepis	Arroyo willow	Native
Salix laevigata	Red willow	Native
Simaroubaceae		
Ailanthus altissima	Tree of heaven	Non-native
Typhaceae		
Typha latifolia	Broad-leaved cattail	Native
Urticaceae		
Urtica urens	Dwarf nettle	Non-native
Vitaceae		
Vitus vinifera	Wine grape	Non-native

Notes:

Taxonomy follows the Jepson Manual (Hickman, 1993) and updated nomenclature per the Jepson Interchange (University of California, Berkeley, 2010).

List includes only selected landscape species; most ornamental flowers, trees, and shrubs were not included.

This map was compiled from various scale source data and maps and is intended for use as only an approximate representation of actual locations.

0 1,000 2,000
Feet

FIGURE 1
PROJECT LOCATION
OAKLEY GENERATING STATION
OAKLEY, CALIFORNIA

CH2MHILL

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Attachment 2
Fee Calculator Exhibits 1 and 2

Permanent Impact Fee Table (Based on the 2010 fee schedule)

Construction Segments	Impact Acreage Development Fee Zone Fee Zone I	Cost per Acre ($10,588.09[1])	Acres of Developed Land Cover Types[2]	Fee Zone IV	Cost per Acre ($15,852.14[3])	Acres of Developed Land Cover Types[4]
Project Site	17.0	$ 179,997.53	2.8	0	$ -	0
Laydown Area	0	$ -	0	0	$ -	0
Soil Stockpile Areas	0	$ -	0	0	$ -	0
Electrical Transmission Line and Pull Sites	0	$ -	0	0	$ -	0
Total	**Acres**	**$ 179,997.53**	**Exempt**	**Acres**	**$ -**	**Exempt**

[1] Based on the March 15, 2010 – March 14, 2011 Fee Schedule
[2] Developed Land Cover Types field verified as urban, aqueduct, non-native woodland, turf, and landfill.
[3] Based on the March 15, 2010 – March 14, 2011 Fee Schedule
[4] Developed Land Cover Types field verified as urban, aqueduct, non-native woodland, turf, and landfill.

Permanent Impact Fee Table (Based on the 2010 fee schedule)

Impact Acreage Development Fee Zone						
Construction Segments (acres of impacts per segment)	Fee Zone I ($10,558.09)	Years of Disturbance (2 years is the minimum for ground-disturbing)	Estimated Cost	Fee Zone IV (15,852.14)	Years of Disturbance (2 years is the minimum for ground-disturbing)	Estimated Cost
Project Site	0	0	$ -	0	0	$ -
Laydown Area	13.0	4	$ 18,300.69	0	0	$ -
Soil Stockpile Areas	5.0	2	$ 3,519.36	0	0	$ -
Electrical Transmission Line	5.9	3	$ 6,229.27	13.9	3	$ 22,034.47
Total	**Acres**		**$ 28,049.33**	**Acres**		**$ 22,034.47**