DOCKETED	
Docket Number:	01-AFC-19C
Project Title:	SMUD Cosumnes Power Plant - Compliance
TN #:	244287-13
Document Title:	Biological Resources
Description:	N/A
Filer:	Patty Paul
Organization:	Ch2mhill/Carrier
Submitter Role:	Applicant Consultant
Submission Date:	8/1/2022 3:19:28 PM
Docketed Date:	8/1/2022

8.2 Biological Resources

8.2.1 Introduction

This section describes the biological resources that occur in the general project area, including potentially threatened and endangered species, and the potential impacts to those species as a result of the proposed project. Furthermore, it describes the laws and regulations that apply to biological protection, the setting and conditions of the affected site, the methods that were used to evaluate the potential presence of threatened and endangered species, and the potential adverse impacts to biological resources as a result of project implementation. This section also discusses the feasibility of potential mitigation measures that would avoid, minimize, or compensate for adverse impacts.

8.2.2 Applicable Laws, Ordinances, Regulations, and Standards

The following section describes the primary laws and regulations that apply to potential impacts to biological resources in the project area, and the agencies responsible for enforcing regulations. Table 8.2-1 describes the LORS applicable to CPP biological resources (all tables are at the end of this section).

8.2.2.1 Federal

Federal Endangered Species Act (FESA, 16 USC 153 et seq.)

Applicants for projects that could result in adverse impacts on any federally-listed species are required to consult with and mitigate potential impacts in consultation with the U.S. Fish and Wildlife Service (USFWS). An adverse impact is defined as a “take,” which is prohibited except through authorization of a Section 7 or Section 10 consultation and Incidental Take Authorization. Take under federal definition includes "such act as may include significant habitat modification or degradation"(50 CFR §17.3). Species that are candidates for listing do not have the full protection of FESA; however, the USFWS advises project applicants that a candidate species could be elevated to listed status at any time, and, therefore, applicants should regard these species with special consideration.

Migratory Bird Treaty Act (16 USC 703 to 711) Protects all migratory birds, including nests and eggs.

Bald and Golden Eagle Protection Act (16 USC 668) Specifically protects bald and golden eagles from harm or trade in parts of these species.

8.2.2.2 State

California Endangered Species Act (Fish and Game Code Section 2050 et seq. Species listed under the Act cannot be "taken" or harmed, except under specific permit. At present, “take” means to hunt, pursue, catch, capture, or kill or to attempt to do so.

Fish and Game Code Section 3511 describes bird species, primarily raptors, which are “fully protected.” Fully protected birds may not be taken or possessed except under specific permit requirements.

Fish and Game Code Section 3503.5 protects all birds of prey and their eggs and nests.

Fish and Game Code Section 3513 makes it unlawful to take or possess or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird.

Fish and Game Code Section 4700, 5050, and 5515 list species that are fully protected in California.

Fish and Game Code Sections 1900 et seq. Native Plant Protection Act lists threatened, endangered, and rare plants listed by the state.

Title 14, California Code of Regulations, Sections 670.2 and 670.5 list animals designated as threatened or endangered in California. Species of Special Concern (CSC) is a category conferred by California Department of Fish and Game (CDFG) for those species that are considered to be indicators of regional habitat changes, or are considered to be potential future protected species. CSC do not have any special legal status, but are intended by CDFG for use as a management tool to take these species into special consideration when decisions are made concerning the future of any land parcel.

California Fish and Game Code (Sections 1601 through 1607) prohibits alteration of any stream, including intermittent and seasonal channels and many artificial channels, without a permit from CDFG. The limit of CDFG jurisdiction is subject to the judgment of the Department, up to the 100-year flood level. This applies to any channel modifications that would be required to meet the drainage, transportation, or flood control objectives of the project.

California Environmental Quality Act (Public Resources Code Section 15380) defines "rare" in a broader sense than the definitions of threatened, endangered, or CSC. Under this definition, CDFG can request additional consideration of species not otherwise protected.

California Environmental Quality Act (CEQA) requires that the effects of a project on environmental resources must be analyzed and assessed using criteria determined by the lead agency.

Warren Alquist Act is a CEQA-equivalent process implemented by the California Energy Commission. Preparation of this AFC will result in an Initial Study prepared by the CEC staff in fulfillment of the requirements of CEQA.

8.2.2.3 Local

Applicable Habitat Conservation Plans

There are no Habitat Conservation Planning (HCP) areas in the project area in Sacramento County. The Cosumnes River Nature Preserve is a large natural area of riparian forests and floodplains bordering the Cosumnes and parts of Laguna Creek northwest of the project site. Also, the District plans to use property generally east of Rancho Seco Reservoir to develop a habitat mitigation bank for fairy shrimp and other vernal pool species. San Joaquin County, which is located 10 miles south of the project site, recently approved a county-wide HCP.

Sacramento County General Plan

The Conservation Element of the County General Plan (1993) contains specific objectives to preserve water quality (see Section 8.14 and Table 8.2.2), and soils (see Section 8.9) that have benefits to biological resources. It also contains specific policies and goals for preserving marsh and riparian areas, vernal pools and ephemeral wetlands, urban streams, trees, rare and endangered species, fisheries, and for promoting resource conservation areas.

City of Elk Grove General Plan

Portions of the proposed gas pipeline pass through the jurisdictions of Sacramento and the newly-formed city of Elk Grove. The Elk Grove General Plan is being developed presently, and until complete, relevant portions of the county plan area are being used. Both allow linear features such as gas pipelines in public rights of way and along streets, which is consistent with the project objectives. Because no other project features are anticipated in these jurisdictions, no extensive discussion of biological resource objectives is provided.

8.2.3 Setting

The following sections describe the biological conditions in the project area, beginning with the vegetation types and habitat present in the project area, a description of wildlife typical to the area, and a discussion of specific special-status species known to occur in the general region. Specific conditions of the project setting that would support these resources are discussed subsequently in Section 8.2.4.

8.2.3.1 Location

The project site is located in south Sacramento County, on the eastern edge of the Sacramento Valley. The project is at 150 feet elevation, at the base of the foothills that rise to the Sierra Nevada east of the project. The water supply line and electrical transmission line are in the same location and habitat conditions.

The new 24-inch gas pipeline begins in south Sacramento, crosses extensive road and railroad rights of way in the south County, crosses under several foothill streams and irrigation ditches typical of the Sacramento Valley, and then lies in a road ROW along Twin Cities Road and Clay East Road, in predominantly hay, alfalfa, and vineyards. The region's climate is Mediterranean, characterized by hot, dry summers and cool, wet winters. Summer high temperatures frequently exceed 100 degrees Fahrenheit (°F), winter temperatures are generally mild, with fewer than 20 freezing days per year. Rainfall averages 16.7 inches per year, most of which falls between November and March.

8.2.3.2 Habitat

Habitat types potentially affected in the project area comprise agricultural, annual grassland, vernal pools, ephemeral streams and irrigation ditches, riparian shrub, and landscape and urban communities. See Figure 8.2-1 for location of biologically sensitive resources in the project area.

Agricultural

Agricultural uses dominate both the project site and habitat along linear corridors. Habitat on the project site is pasture, while areas along the gas pipeline include vineyards, row crops, alfalfa farms, and pastures.

The project site is pasture, dominated by annual grasslands used for cattle grazing. The parcel is dominated by brome (*Bromus hordeaceous, B. diandrus),* oats (*Avena fatua*), and barley *(Hordeum murinum*), which are interspersed with forbs such as storksbill (*Erodium cicutarium*), wild radish (*Raphanus sativa*), and mustard (*Brassica nigra*). Other species identified in field surveys were bristly ox-tongue (*Picris echioides*), common bindweed (*Convolvulus arvensis*), broadleaf plantain (*Plantago major*), Italian ryegrass (*Lolium multiflorum*), slender wild oats (*Cavena barbata*), shepherds purse (*Capsella bursa-pastori*), *Sonchus* sp., and common malva (*Malva neglecta*). These species are widespread and are typical of disturbed grasslands. Most of the parcel is "natural," with the exception of Clay East Road, the southern access road to the Rancho Seco Plant. Surrounding parcels to the west and south are similar to the project site, also comprising pasture lands.

The wildlife species that commonly use pasture lands are the same as those that use annual grassland habitats. They include, California hare (*Lepus californicus*), voles (*Microtus californicus*), coyote (*Canis latrans*), and striped skunks (*Mephitis mephitis*). A wide variety of grassland birds such as Savannah sparrow (*Passerculus sandwichensis),* red-wing blackbird (*Agelaius phoeniceus),* and red tailed hawk (*Buteo jamaicensis)* are also present. The habitat is regionally plentiful and the species that occur there are generally widely distributed and abundant.

In more developed agricultural sites, such as vineyards or row crops, small ground-dwelling mammals are limited, but birds such as Brewer's and red winged blackbirds, starlings, house finches, and northern harriers are abundant. Larger mammals such as coyote, red fox, and striped skunks would be expected to forage in vineyards and row-cropped habitats.

Annual Grassland

Annual grassland and ruderal vegetation dominate the project site, and the eastern portions of the gas pipeline. Annual grassland or ruderal grassland is present along roadways and the railroad rights of way throughout the gas pipeline corridor.

Introduced mediterranean grasses such as brome, oats, and barley characterize annual grassland. Dominant forbs also tend to be introduced species such as storksbill, wild radish, and mustard. Other species that occur commonly are the same as identified in pastures above (bristly ox-tongue, common bindweed, broadleaf plantain, Italian ryegrass, slender oat grass, shepherds purse, thistle, and common malva). These species are widespread and are typical of disturbed grasslands.

Wildlife species that use annual grassland are the same as listed above for pasture lands.

Vernal Pools

Vernal pools are present on parcels north and east of the project site, and at several locations along the gas-line corridor.

Vernal pools that form from winter rains dry out in summer. The annual variation in hydrology and temperature support a community of highly adapted native species, and effectively exclude most of the invasive annuals that occupy most open upland habitats. Plants such as legenere, downingia, orcutt grass, and navarretia are endemic to vernal pools, as are fairy shrimp, tadpole shrimp and tiger salamander (See Table 8.2-3 at the end of this section). Development and hydrologic modification have greatly reduced the area of California that supports vernal pools. The grassy plateau east of Rancho Seco Plant supports hundreds of vernal pools in a nearly natural state. Between the project site and the Rancho Seco Plant, there is a dense complex of vernal pools that is crossed by existing power lines and underground pipelines. Transmission lines and water supply lines for this project would also cross through this area. This particular complex of vernal pools is at a lower elevation than those east of the reservoir, and appear to support sparse vegetation and turbid water indicating a degraded condition.

Ephemeral ponds and drainage ditches that occur along roadsides and railroad berms can also exhibit some of the characteristics of vernal pools, including the seasonal hydrology, vegetation, and characteristic fauna. The Army Corps of Engineers evaluates these on a case-by-case basis to determine whether they are jurisdictional "wetlands" for the purposes of Section 404 of the Clean Water Act. Similarly, the USFWS generally defines these habitats based on whether they support or have the potential to support listed species such as fairy shrimp. Drainage ditches and ephemeral ponds occur along both sides of the Western Pacific Railroad south of Carson Ice-Gen Project, near the north end of the gas pipeline.

Riparian Communities

Riparian communities occur near the project and along the gas pipeline corridor.

Approximately 0.25 mile east of the project site, old mine tailings detain surface runoff and support small oaks, willows, and pepper trees around ponded water. Further east, Rancho Seco Reservoir supports a substantial riparian forest community, including oaks, willows, cottonwood, and blackberry shrubs.

Clay Creek and Hadselville Creek do not support riparian communities in the project vicinity, but downstream of Twin Cities Road, portions of these streams support large willows, oaks, and cottonwoods. The most developed riparian communities border the Cosumnes River on both sides. The tall riparian forest in this area is a well-preserved example of "gallery forest," a tall climax community with a high closed canopy and open understory supporting abundant shrub growth.

Wetlands and Marshes

The project site is crossed by two tributaries to Clay Creek that are considered seasonal ephemeral wetlands with sections categorized as seasonal marsh. These narrow swales contain water during the winter and spring, and pond water in the locations identified as marsh. In early summer, parts of these swales support sparse wild rye, spike rush, coyote thistle, pepper grass, curly dock, and velvet grass. In the areas identified as marsh there is enough water to support small areas of water primrose and aquatic buttercup. There is apparently not enough water to support cattails or bulrushes.

Wetland habitats on the project site imply conditions suitable to support Pacific treefrogs and potentially help amphibians such as tiger salamanders to move across the landscape, but do not have permanent water and dense cover that would support fish or highly aquatic species such as the giant garter snake.

The gas pipeline crosses or passes close to wetland and marsh habitats ranging from completely aquatic sites (Cosumnes River, Badger Creek, Laguna Creek), cattail and bullrush marsh (Cosumnes River), farm ponds (Arno Road, Valensin Road), roadside ditches and swales (near town of Franklin, south of CCF), and, as described above, vernal pools. Wetland and marshes support a high-density and variety of wildlife species, and many listed species. Swainson's hawks, giant garter snakes, and western spadefoot toad are all closely associated with wetland habitats, as are all fish. These sites are universally regarded as sensitive, and a variety of methods are used to avoid impacts to the biological resources that occur there.

8.2.3.3 Special-Status Species

Special-status plant and animal species were determined from the California Natural Diversity Data Base (CNDDB) (see Appendix 8.2A), consultations with agency personnel (see Appendix 8.2B), and field surveys. Special-status species that are recorded or that could potentially occur in the project area are listed in Table 8.2-3 at the end of this section. The District has done extensive field surveys work in the vicinity of the project. The site was field surveyed for the original development of the Rancho Seco Plant (ca. 1969), has been surveyed various times recently to develop a mitigation bank for fairy shrimp, and was surveyed in 1994 as part of the Master Plan for development of the Rancho Seco Park (SMUD, 1994). The District also retained biologists from Davis Environmental and Garcia and Associates to prepare a special-status biological resources survey for the project site and approximately 0.5 mile radius (Garcia, 2001), as well as a wetland delineation (Davis, 2001). CH2M HILL biologists also performed reconnaissance surveys on April, July and August, 2001 to confirm prior information. The qualifications of field surveyors in 2001 are provided in Appendix 8.2C.

Records of special-status species occurring along the gas pipeline were determined from CNDDB searches by Davis Consulting. These were supplemented by mapping habitats that could support special-status species (such as vernal pools, wetlands, riparian forest, farm ponds) on recent aerial photographs at a scale of 1:6,000. Data on these maps and personal knowledge of the resources of the area were used to plan the gas pipeline for locations that would have less potential to adversely affect special-status species. Potential impacts to species along the pipeline are generally temporary, and largely avoidable. Therefore, the description of these species is abbreviated here, and mitigation is focussed on avoiding the types of habitat that support these species (e.g., vernal pools and other wetlands).

Special-Status Plants

There are 16 special-status species plants that could potentially occur in the project vicinity and along the gas pipeline corridor. Special-status plants that occur in the project vicinity can be generally grouped by the habitat they occupy. Ione manzanita, Ione buckwheat and Parry's horkelia are all specific to the Ione formation of soils. Bisbee

Peak rush-rose is confined to serpentine soils. Neither of these habitats occurs in, near, or would be affected by the project.

Rose-mallow, Mason's lilaeopsis and Sanford's arrowhead are specific to shallow freshwater marsh habitat, which does not occur on the project site, but is present in several areas crossed by the gas pipeline. There are no known records of these species in the locations crossed, but the District will avoid impacts to these species by avoiding the habitats that could support them.

Vernal pool species that could potentially occur in the project area or along the gas pipeline include Boggs Lake hedge hyssop, legenere, pincushion navarretia, slender Orcutt grass, and Sacramento orcutt grass. Several of these are known from vernal pools in the south Sacramento area, although there are no known records of these species directly on project alignments or on the project site. Garcia and Associates' botanists, Virginia Danes and Lisa Infante, intensively surveyed the project site on March 12, April 2, and May 7, 2001. The vernal pools that occur east of the project site and on both sides of the gas line near Franklin Boulevard are potentially suitable habitat for several of these species.

Special-Status Animals

Sixteen special-status animals potentially occur in the project area and along the gas supply lines (see Figures 8.2-2a through 8.2-2c). Of these, four species are likely to occur in the vicinity of the project site or in features crossed by the gas pipeline. The vernal pool fairy shrimp, vernal pool tadpole shrimp, and tiger salamander are known to occur in vernal pools east of the project site, and the former could occur in vernal pools along the northern end of the gas pipeline.

Vernal pool fairy shrimp and vernal pool tadpole shrimp are short-lived crustaceans, approximately 1-inch long, that live in vernal pools and occasionally ditches or swales that have similar hydrology to vernal pools. They exist as cysts (eggs) in the summer, and hatch when hydrated by winter rains. They are known to occur in vernal pools east of Rancho Seco, and north of the project site. There are no known localities on the project site that would be directly affected, but because the species is readily transferred among pools in close proximity, any vernal pools in the project vicinity are considered by the USFWS as potential habitat. The gas pipeline alignment crosses many railroad-berm ditches, in the vicinity of Franklin Boulevard that have hydrology similar to vernal pools, and there is a high likelihood that the species is present there.

The giant garter snake (GGS) is known to occur in the Cosumnes River Nature Preserve, and could be present in Badger Creek, Laguna Creek, or connected waterways that support appropriate habitat. Appropriate habitat for GGS comprises dense cattail or bulrush cover, with downed woody debris and partial shading to provide thermal cover.

Valley elderberry shrubs are the obligate host of the valley elderberry longhorn beetle. CNDDB records indicate this species is likely to occur along the Cosumnes River or any crossing where elderberries are present.

The Swainson's hawk is a state-listed species that spends the winter in Mexico and South America and migrates to the prairie states and California to breed in the summer.

There is evidence to indicate that the population that breeds in California is distinct from those in the central United States and may warrant additional protection. Swainson's hawks nest in large riparian cottonwoods or oaks, and forage over short-grass prairies and farm fields up to 10 miles from the nest. Swainson's hawks are sensitive to disturbance during nesting and CDFG recommends a 0.5-mile buffer between construction and active nests. There is only one recorded nest within 0.5 mile of the proposed gas pipeline, and none near the project site. However, suitable trees occur frequently along the gas pipeline route, and around the reservoir east of the project site. A Swainson's hawk could nest in any of these in any year. No Swainson's hawks were observed foraging on the project site during field surveys although the habitat is suitable.

California tiger salamander is a species of special concern that breeds in vernal pools and ephemeral ponds. When the pools dry, the adult salamanders spend the summer in burrows in upland grasslands near the pools. They are known to move up to a mile from breeding sites. There are records of the species in pools east of Rancho Seco, but no suitable breeding habitat occurs on the project site. The gas pipeline crosses several wetland areas that are potentially suitable, but there are no known records of tiger salamander in these areas.

Western pond turtle is a species of special concern that is highly aquatic, and nearly always found in or close to water. The pond turtle exits water to lay eggs in grasslands near the ponds, but does not move far from permanent water. Western pond turtle have been observed in Clay Creek, north of the project site, and are common in the Cosumnes River watershed crossed by the gas pipeline. They are also likely to occur in Badger Creek and Laguna Creek.

Burrowing owls are a species of concern to both USFWS and CDFG. While they occur from Canada to South America, their habitat in California and the western states is being reduced by land conversions for urban and agricultural uses. Most burrowing owls in this region are migratory, spending winters in southern California or Mexico, and appearing in Sacramento to breed in summer. Burrowing owls occupy and nest in abandoned ground squirrel burrows, particularly along the relatively barren area along railroad tracks and road cuts. They are likely to occur seasonally along the railroad tracks west of Franklin Boulevard, and along Twin Cities Road. Burrowing owls tend to use the same burrows from year to year, such that the presence of burrowing owls usually indicates they will be back in following years. None was seen on or adjacent to the project site, however, young owls could colonize any suitable squirrel burrows in any year.

The tricolored blackbird is listed as a California Species of Concern. Tricolored blackbirds are sporadic migrants and summer residents throughout California's Central Valley and the Sierra Nevada foothills. They generally breed near fresh water and emergent vegetation, such as tall, dense cattails or tules, or willow thickets. They are distinct from their smaller cousins, the red-winged blackbird in that they breed in huge colonies often of 1000 birds or more, but seldom breed in the same place every year. Their sporadic movements and unpredictable reproduction cycles make it especially difficult to predict when and where they will occur, although they tend to return to traditional nest sites every 3 years or so. Land conversion for agriculture and urban

development and massive nest predation has resulted in this species being greatly reduced from former numbers. There is no suitable nesting habitat on or adjacent to the site or project linears.

The western spadefoot toad is a species of special concern to CDFG. This homely gray amphibian is named for a horny protuberance on the hind leg that it uses for digging into hard clay soils to escape arid conditions. It breeds in vernal pools and ephemeral ponds in winter and spring, and by the time they dry, the toad has matured and crawls into the grassy uplands for refuge. Like many species that depend on vernal pools and ephemeral ponds, the range and number of spadefoot has been greatly reduced by habitat modifications, changes in hydrology, and urbanization. Their distribution in Sacramento is spotty and they are not recorded from the project site or from any records along the gas pipeline. Field surveys for both this project and the Rancho Seco Master Park Master Plan (SMUD, 1994) failed to detect any toads.

8.2.3.2 Biological Surveys

Biological surveys for the general project area were performed by biologists from Jones & Stokes on February 8, 9, 10, 19; March 5, 19; April 3; and May 19, 20, 21, 1993 in support of the Rancho Seco Master Plan (1994). Additional surveys were conducted on March 5, 6, 7, 16, 29 and April 5, 2001 by aquatic ecologists Robert Aramayo and Charleen Gavette. Botanists Virginia Danes and Lisa Infante walked meandering transects and intensively surveyed suitable habitat for special-status plants on March 12, April 2, and May 7, 2001. Wetland delineations of the project area were performed by Ellyn Davis on April 6 and April 10, 2000. EJ Koford performed reconnaissance survey of the site to confirm findings of the earlier surveys in April 2001. Qualifications of all field surveyors are provided in Appendix 8.2C. The field surveys, in conjunction with aerial photographs, were sufficient to determine the types of habitat present and the suitability for supporting special-status species on the project site and general vicinity.

8.2.4 Environmental Consequences

Potential impacts to biological resources were evaluated to determine permanent and temporary effects of project construction, operation, maintenance, and decommissioning of the CPP project and supporting facilities.

A summary of potential impacts is presented in Table 8.2-4.

8.2.4.1 Standards of Significance

Impacts on biological resources are considered significant if one or more of the following conditions could result from implementation of the proposed project:

- Substantial effect, reduction in numbers, restricted range, or loss of habitat for a population of a state- or federally-listed threatened or endangered species
- Substantial effect, reduction in numbers, restricted range, or loss of habitat for a population of special-status species, including fully-protected, candidate proposed for listing, species of special concern, and certain CNPS list designation

- Substantial interference with the movement of any resident or migratory fish or wildlife species
- Substantially diminish or reduce habitat for native fish, wildlife, or plants
- Substantial disturbance of wetlands, marshes, riparian woodlands, and other wildlife habitat
- Remove trees designated as heritage or significant under County of local ordinances

8.2.4.2 Project-Specific Impacts

Potential Impacts of Construction and Operation of Project Site

Potential Impacts to Special-status Species

1) Construction of the project site would potentially fill one vernal pool, estimated to be less than 0.01 acre in size. Elimination of this vernal pool would have potential adverse impacts on fairy shrimp, tadpole shrimp, and other species that use vernal pools. The pool was surveyed in spring of 2000, and no special-status plants were found there. Generally, loss of such a small area would not be considered significant; however, the project anticipates providing mitigation for other vernal pools, and therefore would add this acreage into the total mitigation provided. Mitigation would consist of providing habitat and management of existing or created vernal pool to support the resources that would be affected by the project. The loss of this vernal pools is considered potentially significant, but can be mitigated to a level of less than significant.

2) Construction of the water supply pipeline and transmission line between the project site and the Rancho Seco Plant would potentially trench or fill historical vernal pools that may support fairy shrimp, tadpole shrimp, western spadefoot or tiger salamanders. Care in siting the pipeline and transmission towers to avoid sensitive vernal pools would reduce the potential for adverse impacts to less than significant.

3) Construction on the project site could potentially advsersely affect tiger salamanders estivating in upland burrows. Although not recorded from the project site, tiger salamanders occur within one mile of the project site, and could potentially spend the summer in burrows over a wide area that includes the project site. Because no tiger salamanders were observed to use the project site, or areas adjacent to it, the loss of any tiger salamanders from project construction would be a small proportion of the population that uses the Rancho Seco vernal pools and surrounding grasslands. The number of salamanders likely to be within the project footprint and disturbed during construction would likely be an insignificant portion of the population. Impacts to tiger salamander from project construction is considered to be less than significant.

4) Swainson's hawks could potentially nest in the riparian trees in the mine tailings 0.3 mile east of the project site, or in the trees surrounding Rancho Seco Reservoir. If present, construction at the project site could potentially cause nest abandonment, and would reduce the available foraging habitat for this species by 30 acres. No Swainson's hawks are recorded, or were observed in these areas during field surveys for this project. Therefore, the potential for Swainson's hawks to be present during

construction is considered low. Pre-construction surveys could establish whether hawks are present there or not. With pre-construction surveys to ensure hawks are not nesting closer than 0.5 mile from the project, adverse impacts could be reduced to less than significant.

5) Wastewater from the proposed facility would be discharged to Clay Creek, which is a tributary to the Cosumnes River. Degradations in water quality could cause adverse effects on anadromous fish (salmon, steelhead) and native minnows (Sacramento splittail, delta smelt) that live in the Cosumnes River. The project would be required to obtain and comply with an NPDES permit for discharge, that would specify the water quality, monitoring, and reporting requirements for the discharge. The RWQCB is responsible for authorizing discharges that will not have significant adverse effects on beneficial uses, including the habitat of warm and coldwater fish. Obtaining and complying with an NPDES permit will reduce the potential for adverse impacts to less than significant.

6) Water will be applied to the site for dust control during construction. Erosion and sediment washed into surface waters would be potentially harmful to water quality of Clay Creek and species that occupy it. The District would be required to have a Stormwater Pollution Prevention Plan as part of compliance with a construction NPDES permit. The permit specifies BMPs to avoid sediment runoff and erosion that would cause water quality degradation. Therefore, this impact will be less than significant.

Potential Impacts to Wetlands

1) Construction on the project site would fill approximately 27,550 cy, at a slope of 1 percent with consequent potential adverse impacts to plants and animals that occupy that habitat. Although the project would fill parts of the historical channels, these same channels would be re-routed around the outer edge of the project site, and restored to as natural a state as practical. Within 3 years, the re-routed channels would support vegetation, hydrologic conditions, and fauna typical of the existing wetlands. The length and width of these re-routed channels would be greater than those filled. The details of channel filling and re-routing would be permitted through the Section 404 process, and related Section 401 water quality certification. Complying with the conditions of these permits would reduce impacts from re-routing the channels to less than significant.

2) Operation of the stormwater detention basin north of the proposed project site would potentially form some wetland-type vegetation in an area that is presently upland annual grassland. The stormwater detention pond is intended to capture water from the paved area of the project site and store it temporarily, releasing it at a slow rate into Clay Creek. This would prevent potentially damaging peak flows in Clay Creek, and in the temporarily inundated area potentially becoming more suitable habitat for wetland plants and animals. The result may be beneficial to wetlands, but the adverse impacts would be less than significant.

3) Cooling water discharge from the CPP would potentially degrade the quality of water in Clay Creek, with consequent adverse impacts on beneficial uses of the creek, including warm and coldwater habitat for fish and other species. As discussed

in Section 8.14, this discharge would be evaluated and authorized under the NPDES permit program of the CWA. An NPDES permit requires that the application for discharge be reviewed by engineers and toxicologists and an assessment made whether the discharge would potentially cause adverse impacts to other users of the river. No authorization would be granted if adverse impacts are anticipated. The permit includes provisions for regular testing, monitoring, and reporting to the Regional Water Quality Control Board (RWQCB) and provisions for renewing or terminating the permit in the future. Obtaining the NPDES permit and complying with the requirements for maintaining water quality, monitoring, and reporting would effectively ensure that potential adverse impacts to biological resources are less than significant.

4) Construction of the project would potentially result in temporary increases in sedimentation to Clay Creek, with consequent adverse impacts to aquatic and amphibian species that use the creek. Theses impacts would be temporary and would be expected to ameliorate over time as soil cover and vegetation regrow over the site. The potential adverse impacts would be minimized by obtaining and complying with an NPDES stormwater construction discharge permit. The permit specifies measures to be implemented at the site to avoid, minimize, or compensate for potential adverse impacts to water quality. With implementation and compliance with the NPDES stormwater permit, potential impacts to aquatic habitat downstream of the project would be less than significant.

Potential Impacts of Cooling Tower Drift

Cooling tower drift is the fine mist of water droplets that escape the cooling tower's mist eliminators and is emitted into the atmosphere. Cooling towers concentrate the particulates (total dissolved solids) during the cooling process and produces a salt mist. Salts can physically damage leaf cells of leaves, which affects the photosynthetic ability of the plant. Other effects include blocking the stomata (leaf pores) so that normal gas exchange is impaired, as well as affecting leaf adsorption and solar radiation reflectance. These effects can cause reduced productivity in crops, forest trees, and sensitive special-status plant species within a deposition area.

Studies performed by Lerman and Darley (1975) concluded that particulate deposition rates of 365 $g/m^2/year$ caused damage to fir trees, but rates of 274 $g/m^2/year$ and 400 to 600 $g/m^2/year$ did not cause damage to vegetation at other sites. Pahwa and Shipley (1979) exposed vegetation (i.e., corn, tobacco, and soybeans) to varying salt deposition rates to simulate drift from cooling towers that use saltwater (20 to 25 parts per thousand) in the circulation water. Salt stress symptoms on the most sensitive crop plants (soybeans) were barely perceptible at a deposition rate of 2.98 $g/m^2/year$ (Pawha and Shipley, 1979).

Assuming a particulate deposition rate of 0.2 centimeters per second and a maximum salt deposition rate of 0.24 micrograms per cubic meter (the cooling tower particulate matter deposition rate), the expected deposition rate is 1.5E-02 $g/m^2/year$, which is significantly less than levels expected to cause barely perceptible to the most sensitive crop plants.

Cooling tower drift is not expected to have any impact on vegetation in surrounding habitats within the maximum impact radius for the CPP cooling towers drift.

Impacts to Trees

There are no trees on the project site or adjacent to it. There would be no adverse impact to native or heritage trees from the proposed project.

Potential for Collision and Electrocution Hazard to Birds

The project would construct four exhaust stacks as high as 160 feet that could potentially result in a few bird collisions. Most bird collisions recorded in the literature involve nocturnal migrants flying at night in inclement weather and low visibility conditions, colliding with tall guyed television or radio transmission towers. Migratory birds generally fly at an altitude that would avoid ground structures, except when crossing over topographic features such as ridge tops, or when inclement weather forces them down closer to the ground. The project area is not known to be a path for nocturnally migrating birds. There are no topographic or ecological features that would attract birds to this location or "funnel" them into the vicinity of exhaust stacks or other elevated features of the project. Because of the relatively low structure height and lack of guy wires, the potential for bird collisions with stacks, structures, and towers of the project is considered less than significant.

Bird collision with new electric transmission lines and towers are similarly expected to be rare because of the relatively low height of the poles (approximately 120 feet) and the location away from migratory pathways, ridgetops and concentrations of waterfowl. The potential for collision is considered less-than-significant.

Large raptors can be electrocuted by transmission lines when a bird simultaneously contacts two conductors of different phases, or a conductor and a ground. All electrical transmission lines for the present project are constructed with sufficient clearance between conductors and ground to protect large birds from electrocution. Installation of transmission lines and towers according to "raptor-proof" guidelines in the "Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996" (APLIC, 1996) would reduce potential impacts to less than significant.

Impacts of Gas Line Construction and Operation

Potential Impacts to Special-Status Species

1) Construction of the natural gas pipeline would pass through or near potential habitat for several special-status species. Potential impacts to these species are minimized by routing the pipeline to the greatest extent practical within roadways, railroad berms, and under rivers and sensitive marsh or aquatic habitat. However, the pipeline may still be within 0.5 mile of Swainson's hawk nests, or pass closer than 250 feet from burrowing owl nests. Burrowing owls are known to nest in squirrel burrows along railroad tracks and roadside areas, and could also be present during construction. If hawk hosts are encountered within 0.5-mile of any construction area (i.e., gas pipeline), construction schedules can be adjusted seasonally to limit activities during the sensitive nesting period (February-July). This would further reduce impacts to less than significant. Implementation of Environmental Awareness training, pre-construction surveys, and seasonal avoidance would reduce impacts to nesting birds to less than significant.

2) The gas pipeline may cross through ephemeral ponds, railroad ditches or vernal pools that could potentially support fairy shrimp or tadpole shrimp. When the final pipeline alignment is defined, the District will quantify the area of affected potential fairy shrimp habitats. Construction activities in these areas would be planned to minimize the size and extent of habitat disruption. Surface soils would be lifted, stored, and replaced after construction, and contours replaced. Adverse impacts to vernal pools would be mitigated by providing off-site preservation, creation, or restoration at the Rancho Seco mitigation site, or as agreed upon in consultation with the USFWS and ACOE. Construction of the pipeline would cause both temporary and permanent impacts that are potentially significant. The impact would be avoided, minimized, and reduced to an extent that would be considered less than significant.

3) The construction laydown area would cover approximately 20 acres on the south side of Clay Station East that has not been evaluated for the potential presence of vernal pools and special-status species. Impacts to this area would consist of temporary vegetation clearing, compaction, and dust generation. However, the site would be restored to pre-construction conditions after construction and, therefore, would sustain no long-term adverse impacts. Based on aerial photography of the site, there are no significant habitats present that would cause adverse effects to special-status species. The impacts from construction would be temporary and less than significant.

Potential Impacts to Wetlands

1) Construction of the gas pipeline would cross under three major rivers (Cosumnes River, Badger Creek, Laguna Creek) and would potentially cause adverse impacts to habitat and water quality supporting important biological resources. Riparian and marsh habitat would be avoided by using HDD construction to bore under sensitive resources. Except in the case of a boring failure, the important wetland resources of habitat and water quality would be unaffected by project construction. To reduce the potential impacts of a boring failure ("frac out"), the District has developed a frac out emergency response plan that describes the actions that would be taken to contain and control any damages resulting from a frac out. The plan describes the resources present, describes access routes that would be used to enter the area in the event of a frac out, and the means by which waste materials would be contained and removed from the area. The frac out plan contains methods and agreements for restoration of biological resources that would be adversely affected. With implementation of HDD to avoid sensitive resources and the frac out plan to respond to any construction failures and consequent adverse effects, the impacts of the construction on the biological resources of any rivers will be less than significant.

2) Construction of the gas pipeline would cross many minor irrigation ditches and drainages that are not major rivers. Although small, these ditches have wetland features that represent valuable habitat to certain biological resources. These biological resources can include aquatic, amphibian, and terrestrial species. Depending on the specific location, impacts to biological resources from crossing small irrigation ditches and drains is potentially significant. Most of these drainages receive flow from man made sources, including irrigation supply, irrigation

tailwater, and stormwater. Such water bodies are generally discontinuous and are often dry 4 to 6 months per year (generally in early winter months). The District would propose to construct through these locations either by using HDD methods (and preparing a frac out plan, as noted above), or by trenching through the drainage during the dry season when most significant biological resources are absent. The latter is permitted under Nationwide Permit 12 issued by the ACOE, with attached conditions to reduce potential adverse impacts to wildlife and water quality. Wherever the gas pipeline crosses drainage ditches or other potential wetland features that could support significant biological resources, this will be accomplished by HDD, by open trench under authorization of NWP 12 or in a manner agreed to by the agencies and the District.

3) The pipeline will require pressure testing after construction to ensure welds are tight and to remove any accumulated dust or welding residue from the pipeline. To do this, the pipe is filled with water and pressurized, resulting in a potentially large volume of water. If disposed improperly, this water could cause adverse effects on wetlands and water quality of receiving waters. The District proposes to dispose pipe-testing water to the SRWTP, either by collecting the wastewater in trucks and taking it to the SRWTP or disposing it to a sewer line that leads to the SRWTP. In no case will pipeline test water be disposed to surface soil unless tested to confirm its quality is suitable. Disposal to the SRWTP will ensure impacts of wastewater disposal are less than significant.

Impacts to Trees

The gas pipeline is sited to avoid requiring the removal of any trees. However, should it become necessary to remove one or more trees for construction, they will be measured, recorded, and mitigated in accordance with the appropriate requirements specified by the County Tree Coordinator. It is not anticipated that any trees will require removal. Therefore, this impact is considered less than significant.

Conflict with Regional Habitat Conservation Plans

There is no County-wide or regional Habitat Conservation Plan in South Sacramento County. Therefore, construction of the project would not conflict with goals of any County Habitat Conservation or other regional conservation plan. The consistency of project construction under the Cosumnes River preserve, which is a major regional preserve area, and in the vicinity of Rancho Seco, which is being developed as a major resource conservation area, would be planned so as not to conflict with these preserve areas' goals. Therefore, no significant impact is expected.

8.2.4.3 Cumulative Impacts

The CPP project would convert approximately 30 acres of annual grassland pasture habitat for industrial uses. Annual grassland is an abundant and widespread habitat type. The CPP project would be located in an area that is already designated and dedicated for electrical generation. The site was originally within the planning area intended to be used for a second generating facility to have been located adjacent to Rancho Seco Plant. The remaining area around Rancho Seco Plant has been dedicated to open space and preserve, as described in the Rancho Seco Park Master Plan (SMUD, 1994). Such open

lands were set aside since the 1970s, and biological resources planning for the County has always shown this area converted to industrial use.

The gas pipeline for the project was sited to minimize the potential impacts on sensitive biological habitats.

This project, in conjunction with other projects planned for the area, would not have significant adverse impacts on biological resources.

8.2.5 Proposed Mitigation and Monitoring

The following sections describe proposed mitigation intended to avoid, minimize, or compensate for potential adverse effects of the project, and to monitor and document the effectiveness of mitigation.

8.2.5.1 Overall Project Construction

The following measures would be implemented in all CPP construction areas:

- Provide worker environmental awareness training for all construction personnel that identifies the sensitive biological resources and measures required to minimize adverse project impacts during construction and operation.
- Provide mitigation construction monitoring by a qualified Designated Biologist during construction activities near sensitive habitats.
- Prepare a Biological Resources Mitigation and Implementation and Monitoring Plan (BRMIMP) that outlines how the District would implement the mitigation measures developed to ensure that any action authorized, funded, or carried out by state or federal lead agencies is not likely to jeopardize the continued existence of endangered or threatened species. The BRMIMP outline is presented in Appendix 8.2D.
- Avoid sensitive habitats and species during construction by developing construction exclusion zones and silt fencing around sensitive areas.
- Conduct additional preconstruction surveys for sensitive species in impact areas during the spring before construction begins, particularly within 0.5 mile of potential raptor nest trees, and within 250 feet of potential burrowing owl burrows.
- Prepare construction monitoring and compliance reports that analyze the effectiveness of the mitigation measures.
- All areas not required for permanent easements and development would be restored to pre-construction conditions, including topography, hydrology, topsoil, and, if appropriate, revegetation.

8.2.5.2 Special-Status Species

Specific mitigation / protective measures were developed to minimize project impacts for the sensitive habitats potentially occupied by vernal pool fairy shrimp, vernal pool tadpole shrimp, Swainson's hawk and burrowing owl. A formal consultation with USFWS under Section 7 of the ESA will be completed by the District and a biological

opinion issued by USFWS prior to construction. The District agrees to abide by the conditions of the Section 7 permit, which may include the following additional mitigation / protective measures that would be implemented in these sensitive areas.

Vernal Pool Crustaceans

- Avoid disturbance of suitable habitat to the extent practical by changing linear alignments, minimizing construction corridors and controlling construction access.
- Conduct habitat-level verification surveys in late winter 2002, at locations potentially occupied by vernal pool crustacea, to determine habitat presence and suitability to support special-status species. Potentially affected habitat area would also be quantified.
- Obtain and comply with the conditions of a Section 7 authorization for take of these species, including providing mitigation land according to the ratios and conditions described in the Section 7 consultation.

Swainson's Hawk

- Implement nest surveys within 0.5 mile of project features to determine use by Swainson's hawk.
- If project features are within 0.5 mile of Swainson's hawk nesting, avoid construction within 0.5 mile during nesting season, if feasible.
- If construction cannot avoid active nests by 0.5 mile, the District will apply for and comply with an incidental take agreement under Section 2080.1 for Swainson's hawk.

Burrowing Owl

- Conduct preconstruction surveys in the spring (before February 1) of construction areas to determine if habitat is occupied by burrowing owls.
- Implement mitigation measures that protect burrowing owls by passive relocation and / or restriction of construction activities within 150 feet during non-breeding season or 250 feet of active burrowing owl nest burrows during breeding season (February 1 through August 31).

Foraging Raptors, Herons, Egrets, and Waterbirds

- Design "raptor-friendly" electric transmission lines as described in the "Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996" (APLIC, 1996).
- Provide safety lighting that points downward on the HRSG stacks to reduce avian collisions.

Fishes and other Aquatic Biota

- Obtain and comply with conditions of NPDES permit for wastewater discharge to protect quality of water supporting fish downstream of the project in Clay Creek and the Cosumnes River.

- Obtain and comply with conditions of NPDES permit for construction stormwater, to protect quality of water supporting fish downstream of the project in Clay Creek and the Cosumnes River.

Gas Pipeline Construction

- All project linears would be surveyed prior to construction to identify significant biological resources that require avoidance or protection.
- Avoidance, protection, and worker awareness training would be detailed in the project BRMIMP (see Appendix 8.2D).
- Construction would be constrained within a designated construction corridor, generally 75 feet wide or less.
- Any wetlands crossed by project linears would be avoided, or crossed in compliance with conditions specified by a Section 404 Permit or Streambed Alteration Agreement, as appropriate.
- Any HDD under wetlands would be accompanied by preparation and implementation of a "frac out" plan to describe emergency response to a potential boring failure. The frac-out plan would be prepared in consultation and coordination with the USFWS, CDFG, NMFS, and CEC CPM.
- Construction site would be restored to pre-existing contours and re-vegetated after construction.

8.2.6 Involved Agencies and Agency Contacts

Table 8.2-5 lists the contacts for the CPP Project.

8.2.7 Permits Required and Permit Schedule

Table 8.2-6 lists the required permits and permit schedule.

8.2.8 Reference

APLIC. 1996. Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996.

California Natural Diversity Data Base. 2001. *Search of the Goose Lake 7.5 minute USGS quadrangle.*

Davis Environmental Consulting. 2000. *Wetland Delineation of the Proposed Twin Cities Power Project Site*. Rancho Seco, California. July.

Environmental Laboratory. 1987. *USACE Wetland Delineation Manual, Final Report Y-87-1*. U.S. Army Engineer Waterways Experiment Station. Vicksburg, Mississippi.

Garcia and Associates. 2001. *Special-Status Biological Resources Survey for the Twin Cities Power Plant Project*. Rancho Seco, California. July.

Hickman, J.E. (ed). 1993. *The Jepson Manual*. University of California Press, Berkeley, 1,400 pps.

Jennings, M.R. 1983. An annotated checklist of the amphibians and reptiles of California. California Fish and Game. 69(3) 151-171.

Lerman, S.L., and E.F. Darley. 1975. Particulates, pp. 141-158. In J.B. Mudd and T.T. Kozlowski (eds.), *Responses of Plants to Air Pollution.* Academic Press, New York.

Mayer, K.E. and W.F. Laudenslayer, Jr. (eds). 1988. *A Guide to Wildlife Habitats of California.* California Department of Forestry and Fire Protection, 166 pps.

Pahwa, S. and B. Shipley. 1979. A Pilot Study to Detect Vegetation Stress around a Cooling Tower. Presented at the 1979 Cooling Tower Institute Annual Meeting, Houston, Texas. Paper TP7903.

Peterson, R.T. 1990. *A Field Guide to Western Birds.* 3rd ed., revised. Houghton Mifflin Co., Boston, 432 pps.

Sacramento County General Plan. 1993. Conservation Element of the County of Sacramento General Plan. Planning and Community Development Department General and Advance Planning Section. December 15.

Sacramento Municipal Utility District (SMUD). 1994. Draft Environmental Impact Report for Rancho Seco Park Master Plan. January.

Skinner, M.W. and B.M. Pavlik, eds. 1994. "Inventory of Rare and Endangered Vascular Plants of California." *California Native Plant Society Special Publication No. 1* (5th edition). Sacramento, CA 338 pps.

Stebbins, R.C. 1985. *Western Reptiles and Amphibians.* 2nd ed. Houghton Mifflin Co., Boston, 336 pps.

Zeiner, D.C, W.F. Laudenslayer, Jr., K.E. Mayer, and M. White. 1990a. *California's Wildlife,* Vol. 2: Birds. California Department of Fish and Game, Sacramento, 732 pps.

Zeiner, D.C, W.F. Laudenslayer, Jr., K.E. Mayer, and M. White. 1990b. *California's Wildlife,* Vol. 3: Mammals. California Department of Fish and Game, Sacramento, 407 pps.

Zeiner, D.C, W.F. Laudenslayer, Jr., K.E. Mayer, and M. White. 1990c. California's Wildlife, Volume 1. Amphibians. California Department of Fish and Game, Sacramento, 365 pps.

TABLE 8.2-1
Laws, Ordinances, and Regulations Applicable to CPP Biological Resources

LORS	Purpose	Regulating Agency	Permit or Approval	AFC Conformance and Applicability
Federal				
Endangered Species Act of 1973 and implementing regulations, Title 16 United States Code (USC) §1531 et seq. (16 USC 1531 et seq.), Title 50 Code of Federal Regulations (CFR) §17.1 et seq. (50 CFR 17.1 et seq.).	Designates and protects federally threatened and endangered plants and animals and their critical habitat.	USFWS and NMFS	Issues, Biological Opinion, or Authorization with Conditions after review of project impacts.	The District has sited facility to avoid habitat for endangered species. Pipeline may cross potential habitat, and the District will obtain Section 7 authorization in conjunction with Section 404 permit for fairy shrimp if necessary. Section 8.2.4.2
Section 404 of Clean Water Act of 1977	Requires permit to fill jurisdictional wetlands.	USACE	Section 404 Permit	The District will avoid wetland fills by using HDD, or will open trench in compliance with NWP 12. Section 8.2.4.2
Section 401 of Clean Water Act of 1977	Requires the District to conduct water quality impact analysis for the project when using 404 permits and for discharges to waterways.	CRWQCB	Water Quality Certification	The District will obtain 401 Certification if required. Section 8.2.4.2
Suggested Guidelines for Raptor Protection (APLIC, 1996)	Describes design measures to avoid and reduce impacts to raptors from electrical transmission and other facilities.	CEC	CEC Conditions of Approval	The District will implement design measures to protect raptors from collision and electrocution. Section 8.2.4.2
Migratory Bird Treaty Act 16 USC §§703-711	Prohibits the non-permitted take of migratory birds.	USFWS and CDFG	CEC Conditions	The District will avoid take of migratory birds, including nest and eggs. Section 8.2.4.2

TABLE 8.2-1
Laws, Ordinances, and Regulations Applicable to CPP Biological Resources

LORS	Purpose	Regulating Agency	Permit or Approval	AFC Conformance and Applicability
State				
California Endangered Species Act of 1984, Fish and Game Code, §2050 through §2098.	Protects California's endangered and threatened species.	CDFG	Comments as cooperating agency on Section 7 or Issues 2081 incidental take permit for state-listed species.	The District will avoid endangered and threatened species impacts to the extent possible. If necessary, the District will obtain permit. Section 8.2.4.2
Title 14, California Code of Regulations (CCR) §§670.2 and 670.5.	Lists plants and animals of California declared to be threatened or endangered.	CDFG	N/A	
Fish and Game Code Fully Protected Species. §3511: Fully Protected birds §4700: Fully Protected mammals §5050: Fully Protected reptiles and amphibians §5515: Fully Protected fishes	Prohibits the taking of listed plants and animals that are Fully Protected in California.	CDFG	N/A	The District will avoid take of listed plants and animals. Section 8.2.4.2
Fish and Game Code §1930, Significant Natural Areas(SNA)	Designates certain areas such as refuges, natural sloughs, riparian areas, and vernal pools as significant wildlife habitats. Listed in the CNDDB.	CDFG		The District will avoid impacts to SNA. Section 8.2.4.2
Fish and Game Code §1580, Designated Ecological Reserves	The CDFG commission designates land and water areas as significant wildlife habitats to be preserved in natural condition for the general public to observe and study.	CDFG		The District will avoid impacts to wildlife habitats Section 8.2.4.2

TABLE 8.2-1
Laws, Ordinances, and Regulations Applicable to CPP Biological Resources

LORS	Purpose	Regulating Agency	Permit or Approval	AFC Conformance and Applicability
Fish and Game Code §1600, Streambed Alteration Agreement	Reviews projects for on waterways, including impacts to vegetation and wildlife from sediment, diversions, and other disturbances.	CDFG	Issues conditions of the Streambed Alteration Agreement that reduces and minimizes effects on vegetation and wildlife.	The District will apply for SAA to alter tributaries to Clay Creek and to HDD under Cosumnes River, Badger Creek and Laguna Creek. Section 8.2.4.2
Native Plant Protection Act of 1977, Fish and Game Code, §1900 et seq.	Designates state rare and endangered plants and provides specific protection measures for identified populations.	CDFG	Reviews mitigation options if there will be significant project effects on threatened or endangered plant species.	No rare or endangered plants on project site. Section 8.2.3.2
Public Resource Code §§25500 & 25527	Siting of facilities in certain areas of critical concern for biological resources, such as ecological preserves, wildlife refuges, estuaries, and unique or irreplaceable wildlife habitats of scientific or educational value, is prohibited, or when none alternative, strict criteria is applied.	USFWS CDFG	Issues Biological Opinion or Authorization with Conditions after review of project impacts.	No areas of critical biological concern in area. Section 8.2.4.2
Title 20 CCR §§1702 (q) and (v); and	Protects “areas of critical concern” and “species of special concern” identified by local, state, or federal resource agencies within the project area, including the CNPS.	USFWS CDFG	Issues Biological Opinion or Authorization with Conditions after review of project impacts.	No areas of critical concern in area. Section 8.2.4.2
Title 14 CCR Section 15000 et seq.	Describes the types and extent of information required to evaluate the effects of a proposed project on biological resources of a project site.	USFWS CDFG	Review and comment on AFC.	AFC will provide this information. Section 8.2.4.2

TABLE 8.2-1
Laws, Ordinances, and Regulations Applicable to CPP Biological Resources

LORS	Purpose	Regulating Agency	Permit or Approval	AFC Conformance and Applicability
40 CFR 122 *et seq.* NPDES Discharge Requirements	Authorizes discharges of wastewater to surface water. Authority is delegated to RWQCB in California.	USEPA, delegated to RWQCB	RWQCB reviews permit application, and issues Waste Discharge Requirements (WDRs) and conditions that will be protective of beneficial uses, including biological resources.	The District will obtain NPDES permit to discharge wastewater to Clay Creek. NPDES permit will specify concentration limits, conditions and monitoring requirements to protect beneficial uses by aquatic life. Section 8.2.4.2

TABLE 8.2-2
Sacramento County General Plan, Conservation Element

Element	Goal/Policy	Conformance
Sacramento County General Plan		
Conservation Element	CO-62 Ensure no net loss of marsh and riparian woodland acreage, values, or functions.	The project would conform by using HDD to bore under potentially affected marsh and riparian habitats.
	CO-64 Seasonal and permanent marshland within designated natural preserves shall not be drained or filled for the purpose of converting the land to another use.	The project would conform by using HDD to bore under potentially affected marsh and riparian habitats.
	CO-66 Encroachment within the designated floodway of Sacramento waterways shall be consistent with policies to protect marsh and riparian areas.	The project would not encroach on the 100-year floodplain.
	CO-78 Focus vernal pool preservation in permanent open space areas beyond the Urban Area.	Vernal pool mitigation would be located in a large complex of vernal pools east of Rancho Seco in the non-urban area.
	CO-69 Review projects for potential to restore marsh/riparian woodlands, considering effects on vernal pools, groundwater, flooding, and proposed fill or removal of marsh and riparian habitat.	The project would avoid all impacts to marsh and riparian woodlands.
	CO-70 Public or private projects involving filling or removal of marsh/riparian habitat shall be mitigated outside of natural preserves where on-site mitigation is not desirable or appropriate shall be mitigated through the purchase of mitigation credits for restored wetlands/riparian areas at no net loss.	The project would avoid all impacts to marsh and riparian woodlands.
	CO-83 Ensure no net loss of vernal pool acreage, and/or values and functions and mitigate any loss in relation to the values of quality of habitat.	The District would compensate at a minimum of 1:1 for all vernal pool loss, to meet the “no-net-loss” policy.
	CO-84 Evaluate feasible on-site alternatives in the environmental review process that reduce impacts on vernal pools and provide effective on-site preservation in terms of minimum management requirements, effective size, and evaluation criteria identified in the report “Sacramento County Vernal Pools” (1990).	The District will consider all feasible on-site alternatives to avoid or reduce impacts to vernal pools.
	CO-85 Require in-kind compensation for the type and functional values of vernal pools eliminated by development.	The District would compensate at a minimum of 1:1 for all vernal pool loss, to meet the “no-net-loss” policy.

TABLE 8.2-2
Sacramento County General Plan, Conservation Element

Element	Goal/Policy	Conformance
	CO-86 When on-site preservation or mitigation is not feasible or is undesirable; require off-site mitigation at County-approved mitigation banks within Sacramento County.	The District would mitigate vernal pool impacts at the Rancho Seco site, in Sacramento County.
	CO-87 Mitigation for vernal pool loss shall be considered in the environmental review process, and mitigation shall be required based on information contained within the environmental documents on the quality of those resources and their ability to be sustained within an urban setting.	This AFC considers and evaluates all potential adverse impacts to vernal pools, and describes relevant mitigation.
	CO-90 Prioritize creation of mitigation banks in areas where sites suitable for creating new vernal pools exist in close proximity to existing vernal pools.	Rancho Seco has numerous opportunities for additional vernal pool creation.
	CO-95 Until such time as mitigation credits consistent with the above policies are available, development entitlements involving filling or removal of vernal pools may be granted provided that the District: a) Purchase and dedicate the development rights for a vernal pool preserve, within a General Plan designated Resource Conservation Area, the extent of which shall not be less than the acreage of vernal pool and upland watershed necessary to sustain the viability of the pools that are proposed to be developed, and, which, in conjunction with adjoining planned vernal pool preserves, will provide a long-term, ecologically viable preserve. b) Prepare a mitigation and management plan for the preserve area consistent with policies of this section. c) Enter into long-term agreement with an agency or organization qualified to create, manage, and monitor vernal pools. d) Post bond guaranteeing the management funding for a minimum of 50 years. e) Obtains permission from the U.S. Army Corps of Engineers. f) Demonstrate that no rare, threatened, or endangered species occur on the site.	It is the intention of the District that the Rancho Seco mitigation area would comprise all these criteria.

TABLE 8.2-2
Sacramento County General Plan, Conservation Element

Element	Goal/Policy	Conformance
	CO-96 Prior to adoption of the mitigation banking ordinance, utilized on a countywide basis, the adopted interim wetland mitigation/ compensated for by either one or a combination of the following methods: a) Preserve or create wetlands sufficient to result in no net loss of wetland acreage, and protect their required watersheds as is necessary for the continued function of wetlands on the project site. The appropriate hearing body shall determine that project design, configuration, and wetland management plan, provide reasonable assurances that the wetlands will be protected and their long-term ecological health maintained. b) Where a Section 404 Permit has been issued by the Corps of Engineers, or an application has been made to obtain a Section 404 Permit, the Mitigation and Management Plan required by that permit or proposed to satisfy the requirements of the Corps for granting a permit may be submitted for purposes of satisfying Paragraph 1, provided a no-net loss of wetlands is achieved and, provided further, that such mitigation and management plan shall be subject to the independent, discretionary approval of the Board of Supervisors. c) Pay to the County of Sacramento an amount based on a rate of $35,000 per acre for the unmitigated/uncompensated wetlands, which shall constitute mitigation for purposes of implementing adopted no-net loss policies and CEQA required mitigation. The payment shall be collected by the Department of Planning and Community Development at the time of Improvement plan or Building Permit approval, whichever occurs earlier, and deposited into the Wetlands Restoration Trust Fund.	The District would compensate for any wetland loss through the Section 404 permit process and remain mindful of the County Policy with respect to minimum criteria.
	CO-99 Ensure that minimum management requirements for vernal pool preserves and mitigation banks include protection in perpetuity through acquisition of fee title or a permanent conservation easement; a funding source for long-term operation, maintenance, and management; preparation and implementation of a management plan; and establishment of an interagency oversight committee.	The District would use a mitigation bank that complies with these policies.

TABLE 8.2-2
Sacramento County General Plan, Conservation Element

Element	Goal/Policy	Conformance
	CO-100 The price of mitigation credits offered for sale to compensate for vernal pool losses shall incorporate estimated management costs for a minimum of 50 years.	The District would use a mitigation bank that complies with these policies.
	CO-102 The County will provide information to applicants with projects in potential wetland areas and provide coordination assistance with the Army Corps of Engineers in order to facilitate the development review and Section 404 Permit review processes.	The District appreciates that assistance of the county in achieving compliance with the 404 permit process.
	CO-107 To the maximum extent practical, retain topographic diversity and variation when channels are realigned, or modified, including maintaining meandering characteristics, varied berm width, naturalized side slope, and varied channel bottom elevation.	The District proposed to fill and relocate up to 3 tributaries to Clay Creek East, and will avoid channeling or culverting the new tributaries so that they can attain the natural meandering and varied slopes characteristic of natural channels.
	CO-110 Channel modifications shall not prevent minimum water flows necessary to protect and enhance fish habitats, native riparian vegetation, water quality, or groundwater recharge.	The District will at minimum maintain existing flow capacities in affected waterways.
	C0-112 Channel modifications shall retain marsh and riparian vegetation whenever possible or otherwise recreate the natural stream channel consistent with the ecological integrity of the preexisting stream. Modifications resulting in wetland or riparian loss shall be mitigated.	The District will retain ecological integrity of existing streambeds in project area by allowing or facilitating the natural colonization of the channel.
	CO-117 Provide a transition zone adjacent to stream corridors which incorporates: 1. A buffer zone on each side of the stream, between the outer edge of any existing or planned riparian or wetland vegetation and more intensive uses. 2. The transition zone for stream corridors shall provide sufficient width to allow a minimum 50- to 150-foot natural buffer, a 20-foot mowed fire break at the outer edge, sufficient additional width to provide for access for channel maintenance and flood control, and for planned passive recreation uses.	There is no riparian or marsh vegetation affected on the project site. The restored stream will have a minimum 25-foot-wide buffer between paved areas and the tributary channel, which is consistent with the relatively abrupt transition that is present in the natural condition.

TABLE 8.2-2
Sacramento County General Plan, Conservation Element

Element	Goal/Policy	Conformance
	3. The width of the natural buffers shall be based on: – Quality and quantity of existing and planned habitat – Presence of species as well as species sensitivity to human disturbance – Areas for regeneration of vegetation – Corridor for wildlife habitat linkage – Nature of planned urban uses adjacent to the corridor – Need for community greenways – The effective use of active barriers 4. The transition zone shall not include containment ponds or other features implementing pollutant discharge requirements. 5. Master drainage plans may provide for other standards that meet the intent of this policy.	
	CO-114 Encourage revegetation of native plant species and avoid non-indigenous species.	The District will facilitate the reestablishment of native species by salvaging topsoil and seedbank from affected areas and using this to line the relocated channel.
	CO-116 Where there is extensive existing riparian vegetation, consider construction of secondary flood control channels for flood control purposes.	There is no extensive riparian vegetation present on the affected project site.
	CO-130 Make every effort to protect and preserve non-oak native, excluding cottonwoods, and landmark trees and protect and preserve native oak trees measuring 6 inches in diameter at 4.5 feet above ground in urban and rural areas, excluding parcels zoned exclusively for agriculture.	Construction on the project site and along the gas supply line will avoid the removal of mature trees.

TABLE 8.2-2
Sacramento County General Plan, Conservation Element

Element	Goal/Policy	Conformance
	CO-131 Native trees other than oaks, which cannot be protected, shall be replaced with in-kind species in accordance with established tree planting specifications, the combined diameter of which shall equal the combined diameter of the trees removed. In addition, with respect to oaks, a provision for a comparable on-site area for the propagation of oak trees may substitute for replacement tree planting requirements at the discretion of the County Tree Coordinator when removal of a mature oak tree is necessary in accordance with consistent policy.	Construction on the project site and along the gas supply line will avoid the removal of mature trees. Any native trees, which cannot be avoided, shall be replaced by a minimum 1:1 "inch-for-inch" ratio of the same or similar trees in consultation with the County Tree Coordinator.
	CO-143 Control human access to critical habitat areas on public lands to minimize impact upon and disturbance of threatened and endangered species.	The anticipated vernal pool mitigation area is fenced and gated to control access.

Source: Sacramento County General Plan (1997).

TABLE 8.2-3
Special-Status Species Potentially Occurring in CPP Project Area

Common Name	Scientific Name[1]	Status[2] (Fed/CA)	Season[3]	Primary Habitat[4]	Observed[5]	Comments
Plants						
Legenere	*Legenere limosa*	--/1B	May-June	Vernal Pools	R	Known from 0.5 miles ESE of south end of Rancho Seco Dam
Boggs Lake Hedge-Hyssop	*Gratiola heterosepala*	--/E	April-June	Marshes, swamps, and vernal pools	R	Multiple occurrences in Forster Ranch, in San Joaquin County
Sacramento Orcutt Grass	*Orcuttia viscida*	E/E	May-June	Vernal Pools	R	Reported to occur southeast of Rancho Seco Dam
Ione manzanita	*Arctostaphylos myrtifolia*	T/T	January-February	Ione formation soils in chaparral, cismontane woodland from 120 to 1800 feet	U	No suitable habitat in the project area
Dwarf downingia	*Downingia pusilla*		March-May	Vernal pools and swales in grasslands and foothills; blooms	U	Moderate potential for occurrence; not found in the project area
Ione buckwheat	*Eriogonum apricum var. apricum*	E/E	July-October	Ione soils in openings in chaparral from 180 to 450 feet	U	No suitable habitat in the project area
Irish Hill buckwheat	*Eriogonum apricum var. prostratum*	E/E	June-July	Openings in chaparral on Ione soils from 270 to 390 feet	U	No suitable habitat in the project area
Tuolumne button-celery	*Eryngium pinnatisectum*	FSC	June-August	Vernal pools and mesic sites within cismontane woodland and lower montane coniferous forest from 210 to 2800 feet	U	No suitable habitat in the project area
Bisbee Peak rush-rose	*Helianthemum suffrutescens*	--/3	April-June	Serpentinite, gabbroic, or Ione soils in chaparral from 120 to 2,500 feet	U	No suitable habitat in the project area
Rose-mallow	*Hibiscus lasiocarpus*	--/2	June-September	Freshwater marshes and swamps	U	No suitable habitat; not found in the project area
Parry's horkelia	*Horkelia parryi*	FSC	April-June	Ione formation soils in chaparral or cismontane woodland from 240 to 3,000 feet	U	No suitable habitat in the project area

TABLE 8.2-3
Special-Status Species Potentially Occurring in CPP Project Area

Common Name	Scientific Name[1]	Status[2] (Fed/CA)	Season[3]	Primary Habitat[4]	Observed[5]	Comments
Delta tule pea	*Lathyrus jepsonii var jepsonii*	FSC	May-September	Coastal freshwater marshes from 0 to 12 feet; blooms	U	Moderate potential for occurrence; known from the confluence of Badger Creek and the Consumnes River. Not found in the project area
Mason's lilaeopsis	*Lilaeopsis masoniii*	FSC/CR	April-November	Brackish or freshwater marshes and riparian scrub from 0 to 30 feet	U	No suitable habitat; not found in the project area
Pincushion navarretia	*Navarretia myersii ssp. Meyersii*	--/1B	May	Vernal pools from 20 to 270 feet	R	Known from the Badger Creek vicinity. Not found in the project area
Slender Orcutt grass	*Orcuttia tenuis*	FT/CE	Blooms from May-October	Vernal pools from 90 to 5,000 feet	R	Known from Laguna Creek. Not found in the project area
Sanford's arrowhead	*Sagittaria sanfordii*	FSC	May-October	Shallow freshwater marshes and swamps	U	May occur in farm ponds or wetlands. No suitable habitat on the project site
Insects and Crustacea						
Vernal pool fairy shrimp	*Branchinecta lynchi*	T/--	Resident	Vernal pools and ephemeral swales	R	Known to occur in vernal pools east of site
California linderiella	*Linderiella californica*	--/--	Resident	Vernal pools and ephemeral swales	R	Known to occur in vernal pools east of site
Vernal Pool tadpole shrimp	*Lepidurus packardi*	FE	Resident	Vernal pools and ephemeral swales	R	Present. Found in Pool #29. Suitable habitat identified in other pools throughout the survey area
Mammals						
None						
Reptiles and Amphibians						
California tiger salamander	*Ambystoma californiense*	C/SC	Resident	Ephemeral ponds and vernal pools	U	Site lacks any suitable ponds for breeding salamanders

TABLE 8.2-3
Special-Status Species Potentially Occurring in CPP Project Area

Common Name	Scientific Name[1]	Status[2] (Fed/CA)	Season[3]	Primary Habitat[4]	Observed[5]	Comments
Northwestern pond turtle	*Clemmys marmorata marmorata*	FSC/CSC	Resident	Ponds, still pools along creeks and rivers, usually with well-developed riparian vegetation on fringes. Nests in uplands near water	R	Recorded from streams in vicinity and observed in Clay Creek, north of project site
Western spadefoot	*Scaphiopus hammodii*	CSC	Resident	Primarily grassland habitats. Occasionally in valley-foothill hardwood woodlands	S	Not seen. Suitable habitat identified. Vernal pools and permanent ponds offer breeding habitat. Small mammal burrows found at project area may be used as refuge during the dry season. Moderate to high potential for occurrence
Giant garter snake	*Thamnophis gigas*	FT/ST	Resident	Ponds and slow moving streams with dense emergent vegetation	S	Occurs in Cosumnes River and tributaries. No dense vegetation on project site to support this species
Birds						
White tailed kite	*Elanus leucurus*	--/FP	Resident	Nests in trees near open grassy fields	S	Probably forages on project site. No suitable nesting habitat on project site
Burrowing owl	*Athene cunicularia*	SC/SC	Primarily summer migrant	Nests in former squirrel burrows in short-grass prairie	S	Canal banks near project site may contain suitable habitat for burrowing owls, if squirrels and burrows were present. Species is known from general region. None observed during field surveys
California horned lark	*Eremophila alpestris actia*	--/SC	Summer migrant	Nests in open grassland prairies	U	Site is highly modified for agricultural development. Unlikely to nest there
Swainson's hawk	*Buteo swainsoni*	--/T	Primarily summer migrant	Nests in large cottonwoods along riparian corridors	S	Hawks may forage on and adjacent to project site; no suitable nest sites on project site
Golden eagle	*Aquila chrysaetos*	--/SC	Winter and Summer	Builds large platform nest in large trees or lattice transmission line	R	Nest site reported in 1992, 5 miles ENE of Rancho Seco

TABLE 8.2-3
Special-Status Species Potentially Occurring in CPP Project Area

Common Name	Scientific Name[1]	Status[2] (Fed/CA)	Season[3]	Primary Habitat[4]	Observed[5]	Comments
				towers		
Cooper's hawk	*Accipiter cooperii*	--/SC	Winter and Summer	Nests in oak woodlands and conifer forests. Most common in live oak	U	Not seen. Low potential for occurrence
Tricolored backbird	*Agelaius tricolor*	SC/SC	Summer migrant	Cattail or tule marshes; Forages in fields, farms	S	Habitat suitable for foraging. Suitable nesting habitat exists in riparian shrubs on south side of project site. None seen during field surveys
Loggerhead shrike	*Lanius ludovicianus*	--/SC	S	Open habitats with sparse shrubs and trees. Uses perches such as trees, fences, and power lines to scan for prey	O	Loggerhead shrikes are present in the project vicinity
Double-crested cormorant	*Phalacrocorax auritus*	--/SC	Summer	Coast, inland lakes, fresh, salt, and estuarine waters. Lacustrine and riverine habitats in Central Valley	O	Occasionally present in Rancho Seco Reservoir, and common along Cosumnes and Laguna Creeks
Bank swallow	*Riparia riparia*	ST	Summer	Colonial breeder in vertical banks, usually close to water. Requires soft substrate for excavation	U	Not seen. Not expected to occur in project area

NOTES:
[1]Scientific names are based on the following sources: AOU, 1983; Jennings, 1983; Zeiner et al. 1990.
[2]Status of species relative to the Federal and California State Endangered Species Acts and Fish and Game Code.
[3]Season Blooming period for plants. Season of use by animals.
[4]Primary Habitat Most likely habitat association.
[5]Present on site.
C Candidate for listing as federal threatened or endangered threatened. Proposed rules have not yet been issued because they have been precluded at present by other listing activity.
CA California status.
CNPS California Native Plant Society Listing (does not apply to wildlife species).
E Federally listed as endangered.
E Species whose continued existence in California is jeopardized.
Fed Federal Status.
FP Fully protected against take pursuant to the Fish and Game Code Section 3503.5.
IB Plants, rare, threatened, or endangered in California and elsewhere and are rare throughout their range. According to CNPS, all of the plants constituting List 1B meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection) of the California Department of Fish and Game Code and are eligible for state listing.

TABLE 8.2-3
Special-Status Species Potentially Occurring in CPP Project Area

Common Name	Scientific Name[1]	Status[2] (Fed/CA)	Season[3]	Primary Habitat[4]	Observed[5]	Comments

PE Proposed endangered.
PT Proposed threatened.
SC Species of Special Concern threatened. Proposed rules have not yet been issued because they have been precluded at present by other listing activity.
SC California Department of Fish and Game "Species of Special Concern." Species with declining populations in California.
T Federally listed as threatened.
T Species that, although not presently threatened in California with extinction, is likely to become endangered in the foreseeable future.
-- No California or federal status.
O Observed on site.
R Recorded on site.
S Suitable habitat on site.
U Unsuitable habitat on site.

SOURCE: California Department of Fish and Game, *California Natural Diversity Database*, 2001; California Native Plant Society, *Inventory of Rare and Endangered Vascular Plants Of California*, Feb. 1994.

TABLE 8.2-4
Summary of Permanent and Temporary CPP Project Impacts on Biological Resources During Construction

Location	Project Work	Construction Zone Size	Time Requirements	Habitat Type	Sensitive Biological Resources	Impacts	
						Temporary	Permanent
Power Plant Site	Grading for footprint construction	30 acres	Start summer of 2002	Pasture/ annual grassland, seasonal swale, seasonal marsh, vernal pool	Vernal pool fairy shrimp Plants in wetlands	None. All of site would be converted from habitat	Potential loss of 30 acres of annual grassland habitat. Relocation of 2,800 feet of seasonal swale and seasonal marsh. Elimination of < 0.01 acre of vernal pool habitat (VP9)
Access road	Grading and pavement for road	None in addition to power plant construction area	Summer 2002	None	None	None	None
Stormwater detention pond	Grade berms into place surrounding detention pond	1.5 acres, approximately 560 ft. x 160 ft.	Summer 2002	Pasture/ annual grassland,	Seasonal swale	Clear and grade 2 acres of vegetation, expected to recover to annual grassland. Potential sedimentation to creek during construction	Approximately 0.5 acre of habitat would be permanently converted from annual grassland to berms surrounding detention pond
Construction laydown area, south of Clay East Road	Construct compacted gravel pad	20 acres	Summer 2002	Pasture/ annual grassland	None	Grading and compaction of up to 20 acres	None. Laydown area would be restored to pre-construction conditions
Natural gas pipeline from Carson	Gas pipeline trench	26-miles of trench. 75' construction right of way, 25' permanent	Summer 2002	Road, railroad berm, pasture, annual	Vernal pools, Swainson's hawk, wetlands, Cosumnes	Disturbance of 240 acres of various habitat	Loss of 45 acres of agricultural fields

TABLE 8.2-4
Summary of Permanent and Temporary CPP Project Impacts on Biological Resources During Construction

						Impacts	
Location	**Project Work**	**Construction Zone Size**	**Time Requirements**	**Habitat Type**	**Sensitive Biological Resources**	**Temporary**	**Permanent**
Cogen to project site.		easement		grassland, vineyard	River, Laguna Creek, Badger Creek	habitat	
Water supply line	Pipeline trench	800-foot pipeline routed south from Rancho Seco Plant to site. 75-foot-wide construction easement, no permanent corridor	Summer 2002	Pasture, annual grassland, vernal pools	Vernal pool species, wetlands	Disturbance of 1.3 acres of disturbed grasslands	None. Pipeline area would be restored to pre-construction conditions
Wastewater discharge	Pipeline trench	200 feet long to Clay Creek. 75-foot-wide construction easement, 25-foot-wide permanent disturbance at outfall.	Summer 2003	Pasture, annual grassland, seasonal swale	Vernal pools, sedimentation to surface waters	Disturbance of 0.3 acres of disturbed grasslands	Conversion of < 0.2 acres for outfall structure to Clay Creek
Transmission towers	Transmission tower footings, construction and maintenance	800 feet long from CPP to Rancho Seco Plant. 75-foot-wide construction easement, 25-foot-wide permanent easement.	Summer 2003	Pasture, annual grassland, seasonal swale	Vernal pools, sedimentation to surface waters	Disturbance of 0.3 acres of disturbed grasslands	Conversion of 1.0 acres for transmission tower footings

TABLE 8.2-4
Summary of Permanent and Temporary CPP Project Impacts on Biological Resources During Construction

						Impacts	
Location	**Project Work**	**Construction Zone Size**	**Time Requirements**	**Habitat Type**	**Sensitive Biological Resources**	**Temporary**	**Permanent**
Emergency/ Fire Water Supply Line	Pipeline trench	200 feet long to Clay Creek. 75-foot-wide construction easement, 25-foot-wide permanent disturbance at outfall.	Summer 2003	Pasture, annual grassland, seasonal swale	Vernal pools, sedimentation to surface waters	Disturbance of 0.3 acres of disturbed grasslands	Conversion of < 0.2 acres for outfall structure to Clay Creek
Project site and along pipeline	Water disposal for dust control and pipeline testing	Project site (30 acres), laydown area (20 acres), pipeline corridor (40 acres)	Summer 2003	Graded annual grassland, agricultural or roadside berms	Erosion/ Sedimentation to surface waters. Disposal of pipeline test water	Length of pipeline and project site during construction	None

TABLE 8.2-5
Contacts for the CPP Project

Biological Resource Agency	Person Contacted	Issue	Phone
U.S. Fish and Wildlife Service	Ken Sanchez	Federal threatened or endangered species	(916) 414-6600
California Department of Fish and Game	Terry Roscoe	California threatened or endangered species	(916) 358-2883
California Department of Fish and Game	Gary Hobgood	Streambed Alteration Agreement	(916) 983-5162
U.S. Army Corps of Engineers	Justin Cutler	Waters of the U.S. and wetland impacts	(916) 557-5258
Cosumnes River Preserve Manager, Nature Conservancy	Rick Cooper	Requirements for crossing the Cosumnes River Preserve	(916) 683-1701

TABLE 8.2-6
Permits and Schedule

Permit/Authorization	Requirements to Complete Consultations	Date Application Submitted
USFWS Section 7 Endangered Species Authorization for take of fairy shrimp.	USFWS to issue Biological Opinion, in support of potential adverse impacts to fairy shrimp	January 2002
CDFG Streambed Alteration Agreement potentially required for pipeline construction over irrigation canals	Gas pipeline crosses irrigation canals that may be interpreted to have “bed and banks” and require permit from CDFG. Consult with CDFG, and, if needed, prepare application that clearly identifies areas of impact and measures to protect vegetation and wildlife downstream of construction	April 2002
Clean Water Act Section 404 Permit potentially required for gas pipeline crossing of irrigation ditches	If construction affects jurisdictional wetlands, implement pre-notification and construction in compliance with Nationwide Section 404 authorization	April 2002
Water Quality Certification	Prepare application that describes monitoring plan for water quality of stormwater discharge; requires completed endangered species consultations and CDFG streambed alteration agreement	April 2002

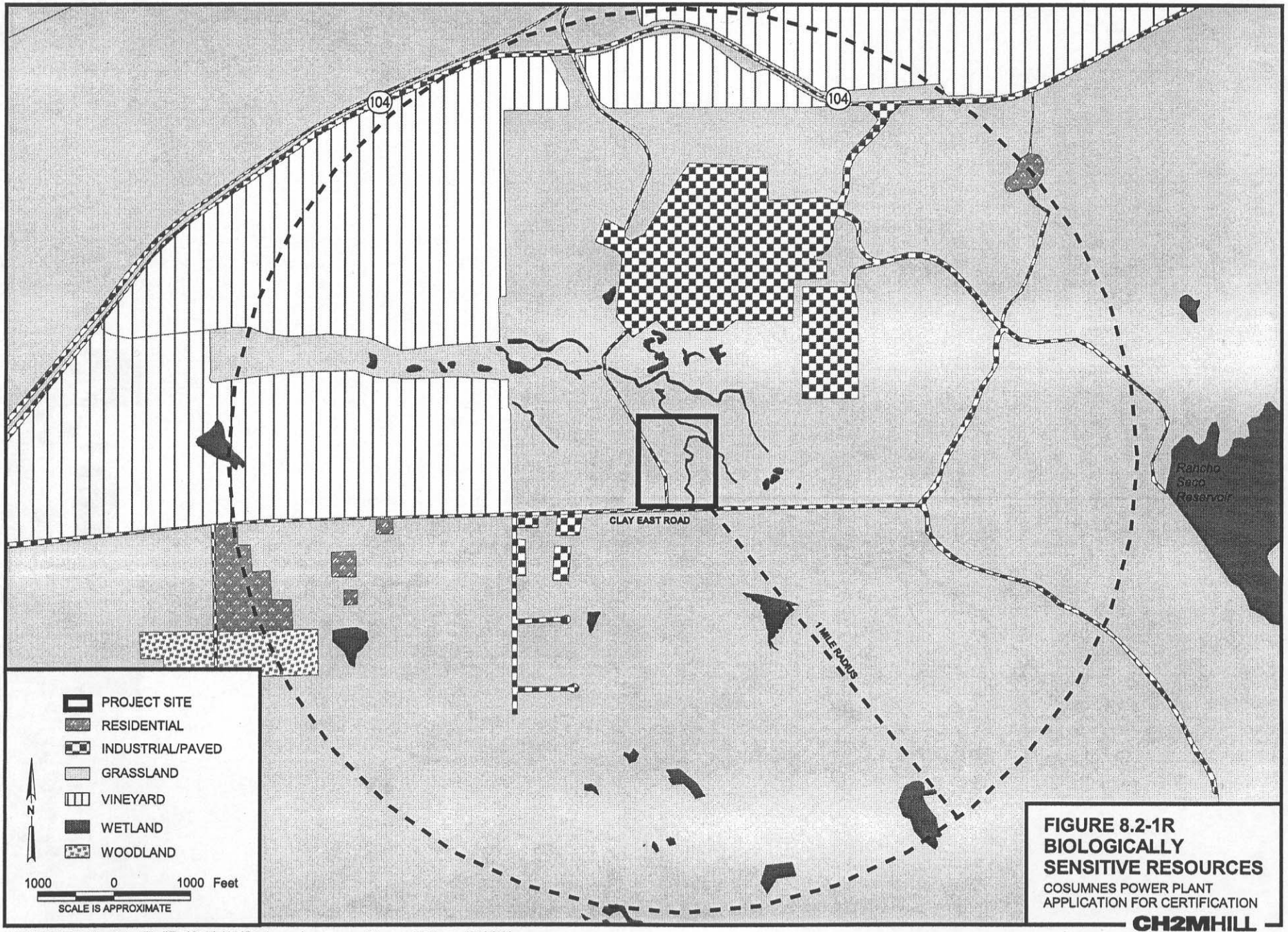

FIGURE 8.2-1R
BIOLOGICALLY SENSITIVE RESOURCES
COSUMNES POWER PLANT
APPLICATION FOR CERTIFICATION

CH2MHILL

CH2M Hill RDD ArcView Project File \\Thor\Cart1\rddgis\Rancho_seco\rancho_seco_biology.apr 11:16 a.m. 10-30-2001

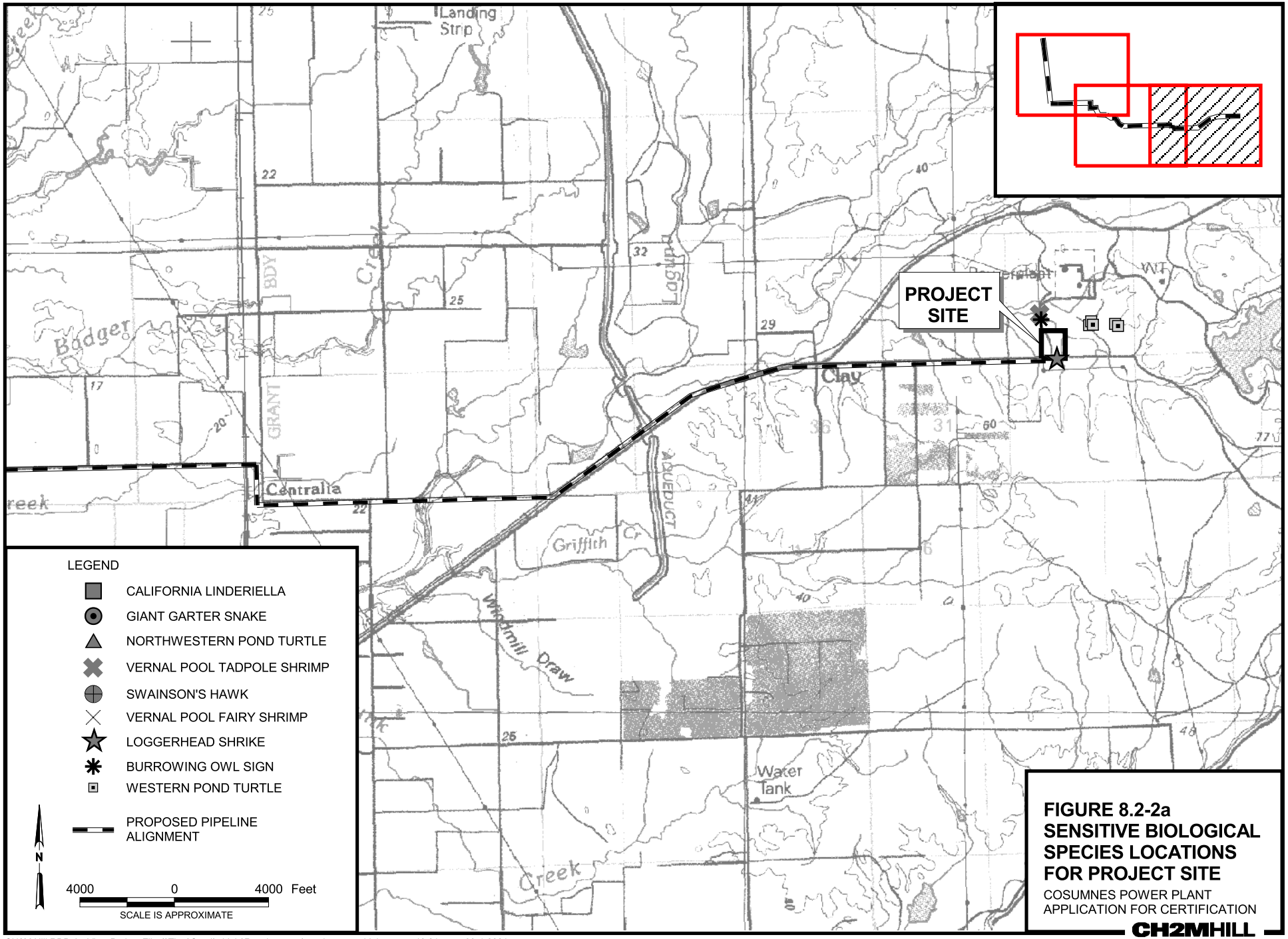

FIGURE 8.2-2a
SENSITIVE BIOLOGICAL SPECIES LOCATIONS FOR PROJECT SITE
COSUMNES POWER PLANT
APPLICATION FOR CERTIFICATION

CH2MHILL

CH2M Hill RDD ArcView Project File \\Thor\Cart1\rddgis\Rancho_seco\rancho_seco_biology.apr 10:21 a.m. 09-4-2001

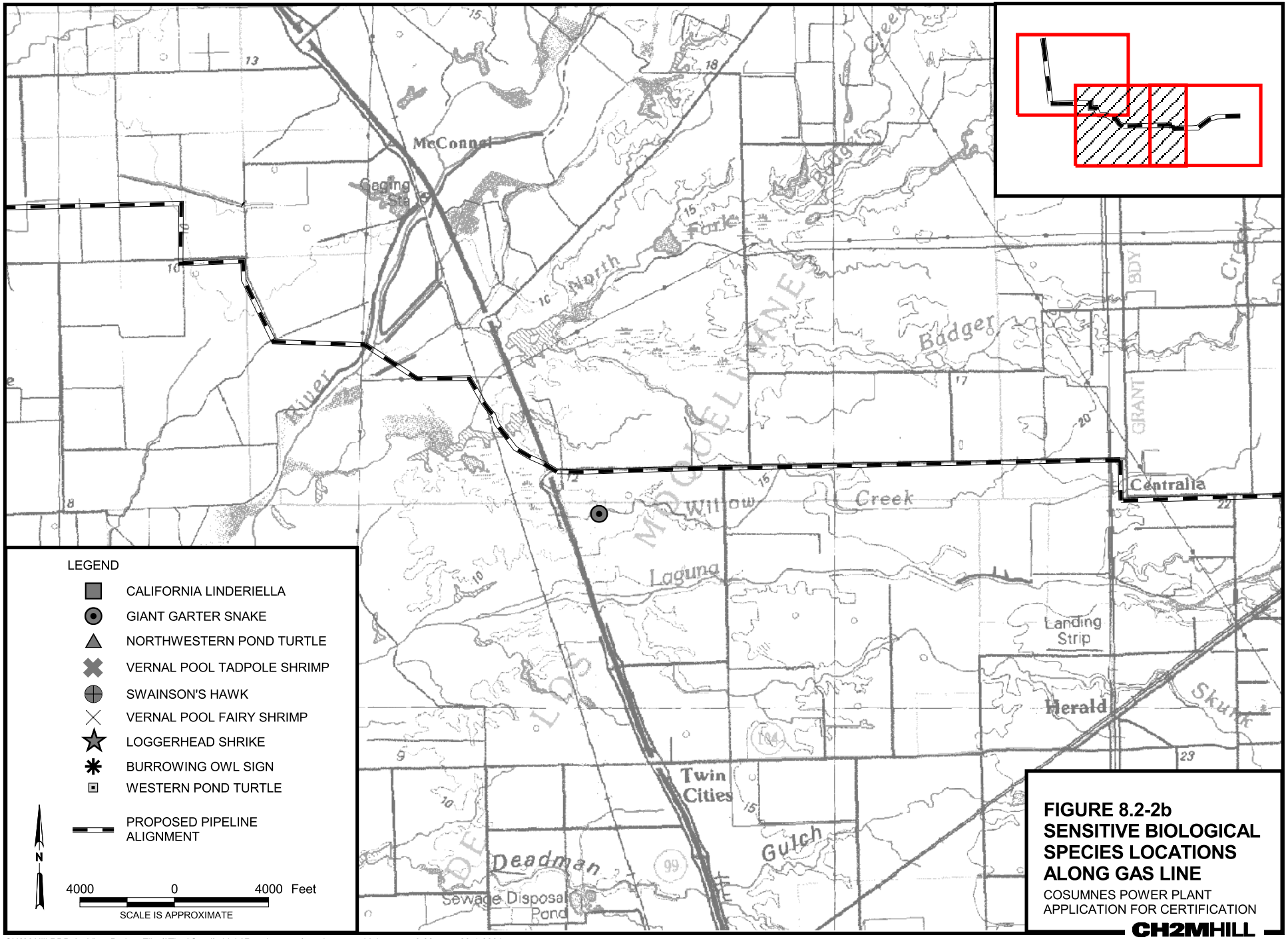

FIGURE 8.2-2b
SENSITIVE BIOLOGICAL SPECIES LOCATIONS ALONG GAS LINE
COSUMNES POWER PLANT
APPLICATION FOR CERTIFICATION

CH2MHILL

CH2M Hill RDD ArcView Project File \\Thor\Cart1\rddgis\Rancho_seco\rancho_seco_biology.apr 9:02 a.m. 09-4-2001

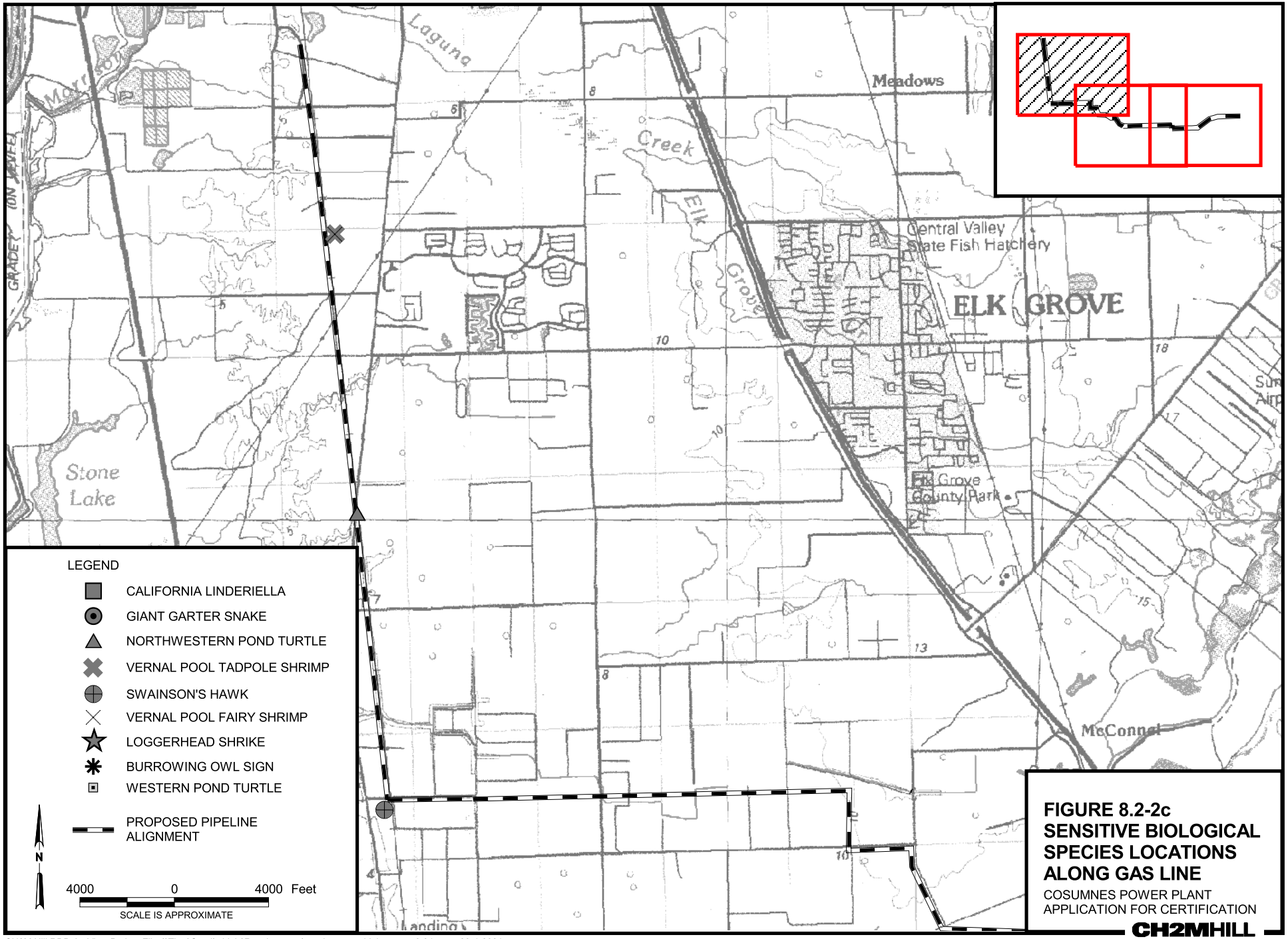

FIGURE 8.2-2c
SENSITIVE BIOLOGICAL SPECIES LOCATIONS ALONG GAS LINE
COSUMNES POWER PLANT
APPLICATION FOR CERTIFICATION

CH2MHILL

CH2M Hill RDD ArcView Project File \\Thor\Cart1\rddgis\Rancho_seco\rancho_seco_biology.apr 9:04 a.m. 09-4-2001

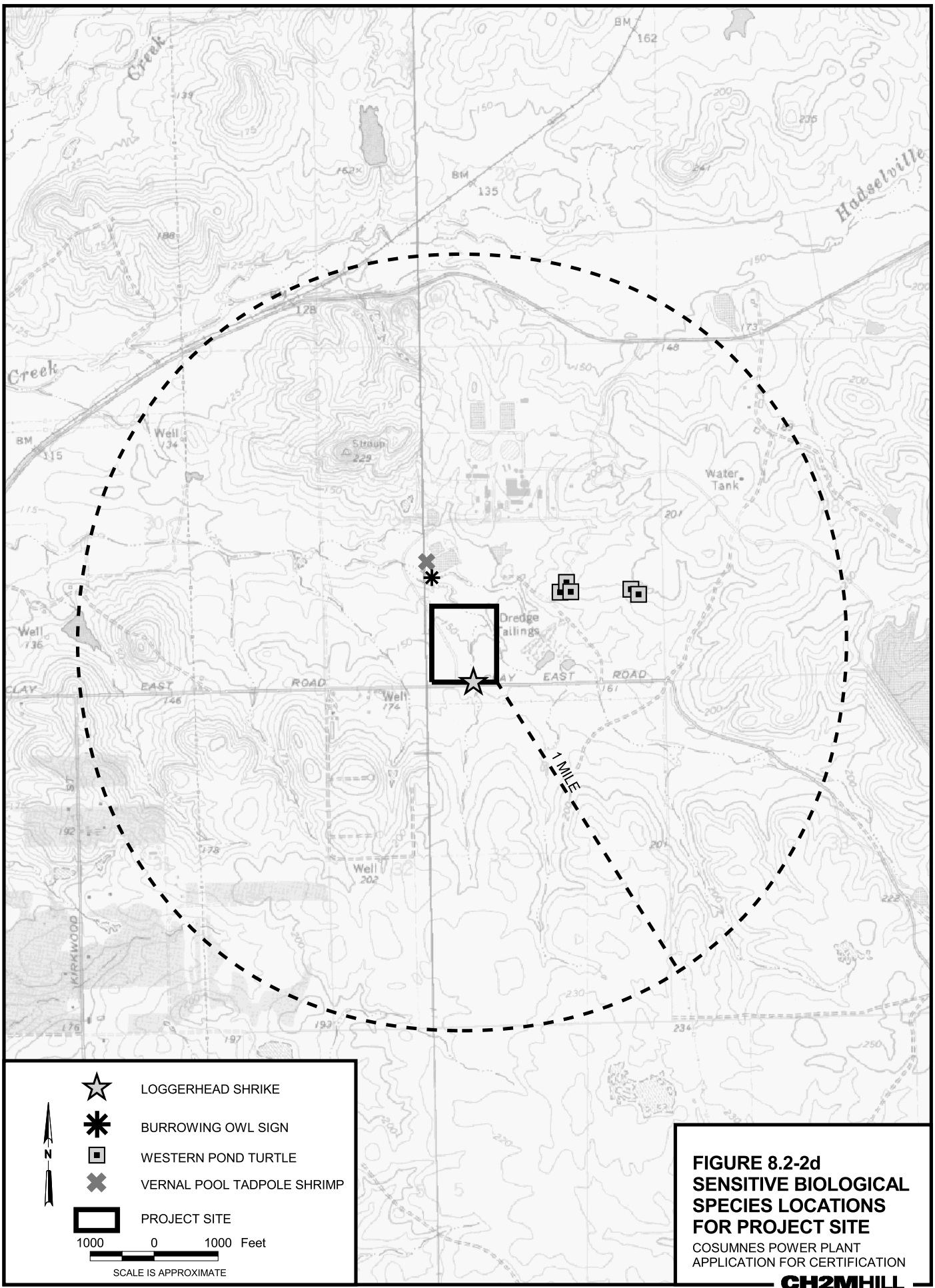

FIGURE 8.2-2d
SENSITIVE BIOLOGICAL SPECIES LOCATIONS FOR PROJECT SITE
COSUMNES POWER PLANT
APPLICATION FOR CERTIFICATION

CH2MHILL