

D.3 Biological Resources

Section D.3.1 provides a summary of the existing biological resources present on site and within the vicinity of the proposed wellhead site, compressor station, and associated pipelines. Applicable regulations, plans, and standards are listed in Section D.3.2. Potential impacts and mitigation measures for the Proposed Project are presented in Section D.3.3, and project alternatives are described in Section D.3.4. Mitigation monitoring, compliance, and reporting is discussed in Section D.3.5. References cited in the preparation of this section are listed in Section D.3.6. The discussion is based on a Preliminary Jurisdictional Delineation Report prepared for the City of Sacramento by Sycamore Environmental Consultants in March 2008, reconnaissance-level special-status species surveys conducted in November 2006 (PBS&J 2006), reconnaissance-level field surveys conducted in July and August 2007 (PBS&J 2007a), and a pipeline alignment field survey conducted in April 2007 (PBS&J 2007b). This information has been peer reviewed and revised where necessary.

D.3.1 Environmental Setting for the Proposed Project

This section summarizes the existing biological resources within the project area. Biological resources include living organisms and the physical environment in which they occur. Biological resources are categorized in this report into vegetation communities, wetlands and waters of the U.S., and special-status plant and wildlife species within the project area. A discussion of special-status plant and wildlife species with the potential to occur in the region is provided.

This section considers information presented in the Sacramento Natural Gas Storage (SNGS), LLC's Proponent's Environmental Assessment (PEA) (2007a) and SNGS, LLC's PEA Addendum (2007b), which reviewed the following sources: the California Department of Fish and Game (CDFG) California Natural Diversity Database (CNDDDB) for the Sacramento West 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle and the Sacramento East 7.5-minute USGS topographic quadrangle; the California Native Plant Society's (CNPS's) Electronic Inventory for Sacramento County; a query of the U.S. Fish and Wildlife Service's (USFWS's) Species List website; and previous environmental documents prepared for other projects in the area. Additionally, this section incorporates information presented in the preliminary jurisdictional delineation report prepared in March 2008 for the City of Sacramento (Sycamore Environmental Consultants 2008).

General reconnaissance-level special-status species surveys were conducted in November 2006 pertaining to project components within the City of Sacramento (PBS&J 2006). The general reconnaissance-level field survey within the City of Sacramento was conducted outside the blooming period for special-status plant species. Where habitat was present, the species were

assumed to be present. Plants observed during the survey were identified to the species level using *The Jepson Manual: Higher Plants of California* (Hickman 1996).

A chain-link fence was present along the crown of the Morrison Creek levee, which precluded access to the low-flow section of the creek. Biologists walked the eastern crown of the Morrison Creek levee from the compressor station site to the southwest corner of the Depot Park parcel. Visual surveys of plant and wildlife in the Morrison Creek low-flow channel were conducted from the crown of the eastern creek levee (SNGS, LLC 2007a).

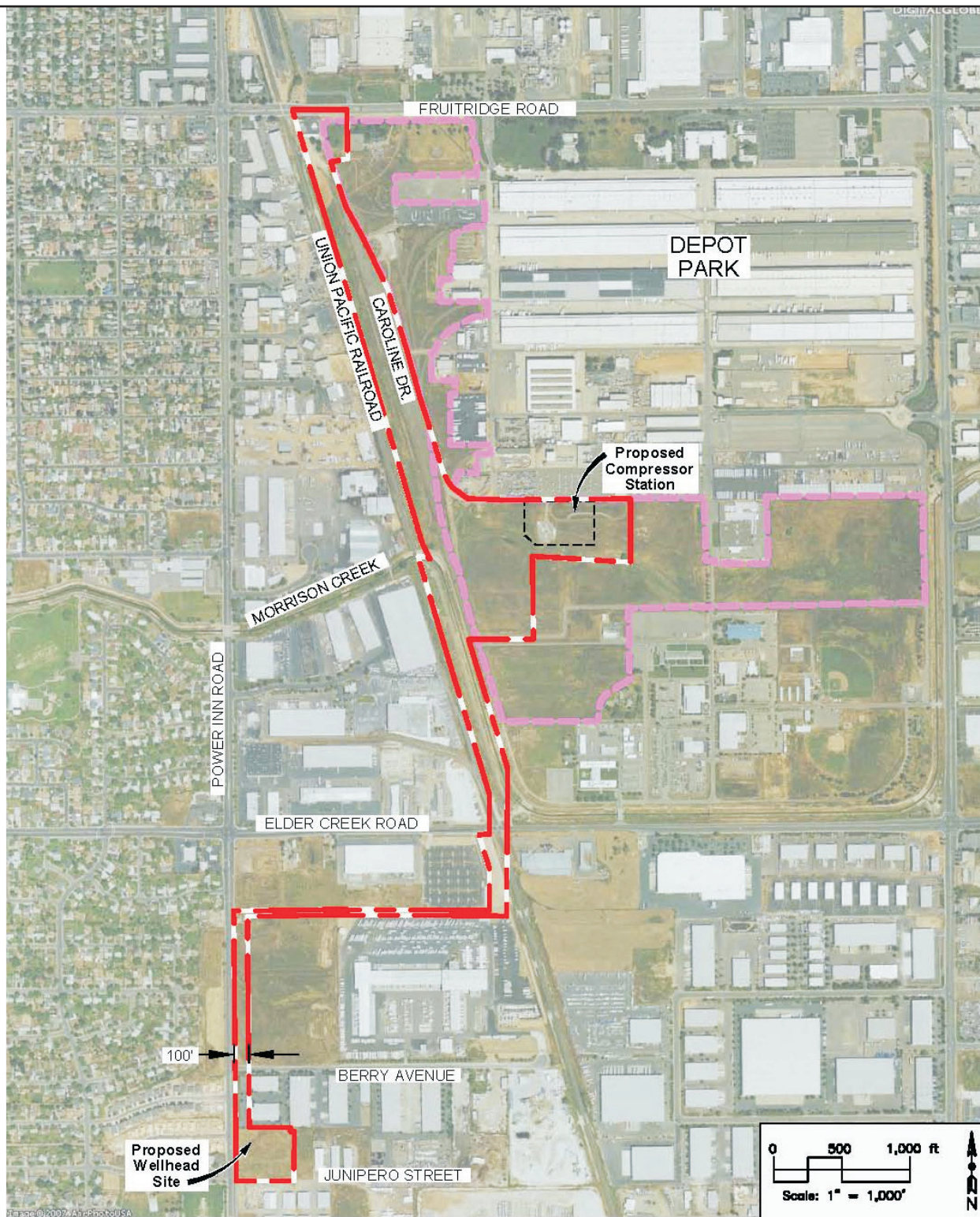
The study area for the Preliminary Jurisdictional Delineation Reports completed by Sycamore Environmental Consultants encompasses the wellhead site, compressor station, and connecting pipelines in the City of Sacramento. The report includes a literature review and field surveys. Methodology is in accordance with both the Sacramento District and U.S. Army Corps of Engineers (ACOE) regulatory standards. Fieldwork for the jurisdictional delineation was conducted in October 2007 for the project area within the City of Sacramento. The report incorporates information from a jurisdictional delineation conducted by CH2M HILL in 2003 associated with the transfer of land from the former Sacramento Army Depot to the City of Sacramento. This delineation was verified in September 2006 and encompasses the western and southern portions of the former Sacramento Army Depot. A portion of the Proposed Project study area overlaps with the verified delineation boundary, especially in the area of the proposed compressor station. Figure D.3-1 presents the study area boundary for the wetland delineation report as it compares to the CH2M HILL verified delineation boundary study area.



D.3.1.1 Regional Overview

The Proposed Project is located in the Sacramento Valley geographic subregion of the California Floristic Province. The wellhead and compressor station sites and associated pipelines are situated in southeast Sacramento County within an industrial area in the City of Sacramento. The aforementioned project components (wellhead, compressor station, and associated pipelines) are generally surrounded by industrial uses to the north, south, and east. Residential and park uses are located to the west of the wellhead site. Industrial uses are located to the west, and park uses are located west and south of the compressor station site.

D.3.1.2 Special Habitat Management Areas

The portion of the project site in the County of Sacramento is within the boundary of the South Sacramento Habitat Conservation Plan (HCP) that is currently being finalized. The Proposed Project is generally located outside of the Urban Service Boundary of the County of Sacramento and the South Sacramento HCP boundary is generally located outside of the project area.



 Project Study Area (61.40 acres)
 2006 Verified Delineation Boundary (CH2M/HILL)

SOURCE: SNGS, LLC 2008.

Sacramento Natural Gas Storage Project - EIR
 Jurisdictional Delineations Report Boundaries
 (City of Sacramento Project Components)

FIGURE
 D.3-1

INTENTIONALLY LEFT BLANK

D.3.1.3 Vegetation Communities and Associated Wildlife Habitats in the Project Area

This section addresses the vegetation communities that define the project area and is divided by project component.

Wellhead, Compressor Station, and Pipeline Segments 1 and 2

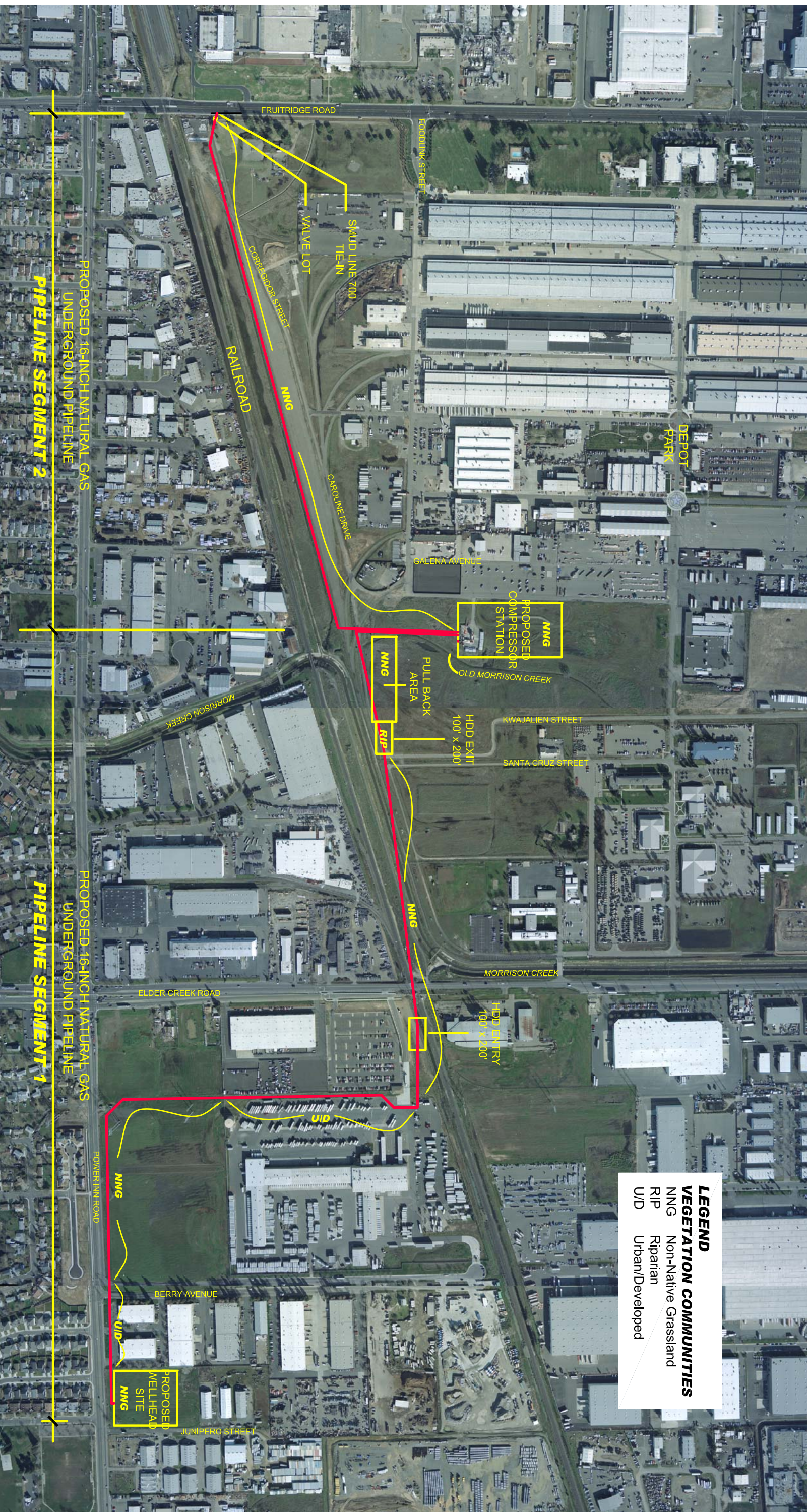
Non-native annual grassland is the most common community type on the wellhead and compressor station sites (see Figure D.3-2). In general, the non-native annual grassland is characterized by a mix of annual grasses and weedy forbs. Herbaceous species observed include ripgut grass (*Bromus diandrus*), Italian ryegrass (*Lolium multiflorum*), curly dock (*Rumex crispus*), field bindweed (*Convolvulus arvensis*), vetch (*Vicia* sp.), quaking grass (*Briza minor*), prickly lettuce (*Lactuca serriola*), turkey mullein (*Eremocarpus setigerus*), Bermuda grass (*Cynodon dactylon*), cranesbill (*Geranium dissectum*), filaree (*Erodium* spp.), perennial pepperweed (*Lepidium latifolium*), yellow-star thistle (*Centaurea solstitialis*), fireweed (*Epilobium* sp.), field mustard (*Brassica rap*), medusa head (*Taeniatherum caput-medusa*), tumbleweed (*Amaranthus albus*), horehound (*Marrubium vulgare*), and chicory (*Cichorium intybus*). The non-native annual grassland on the wellhead site has been recently disked.

Bird species observed during the reconnaissance-level survey of the project area include mourning dove (*Zenaida macroura*), red-tailed hawk (*Buteo jamaicensis*), killdeer (*Charadrius vociferous*), ring-neck pheasant (*Phasianus colchicus*), western meadowlark (*Sturnella neglecta*), burrowing owl (*Athene cunicularia*), and house sparrow (*Passer domesticus*). Mammals observed during the survey included California vole (*Microtus californicus*), black-tailed jackrabbit (*Lepus californicus*), and evidence of use (in the form of scat) by coyote (*Canis latrans*).

A portion of pipeline segment one passes through urban areas, including a parking lot and near other developed industrial areas. Wildlife species diversity would likely be limited due to the developed nature of the site, which includes pavement and some turf.

Morrison Creek, Old Morrison Creek, and several swales in the project area were characterized by their potential to support aquatic and riparian vegetation. These areas have been heavily disturbed and contain no developed riparian vegetation in the vicinity of the Proposed Project but do contain some hydrophytic vegetation. These areas have limited value to wildlife, but do serve as a water source for the area's wildlife.

INTENTIONALLY LEFT BLANK

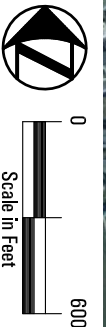


LEGEND

VEGETATION COMMUNITIES

NNG	Non-Native Grassland
RIP	Riparian
U/D	Urban/Developed

Design Source: SNGS, LLC 2008.
 Vegetation Source: Dudek 2008.



Sacramento Natural Gas Storage Project - EIR
Vegetation Map for Compressor Station, Wellhead Site & Connecting Pipelines

INTENTIONALLY LEFT BLANK

D.3.1.4 Wetlands and Waters of the United States

Wetland and open water communities in general are considered sensitive biological resources and are under the jurisdiction of the ACOE and the CDFG as wetlands or waters of the U.S.

Wellhead, Compressor Station, and Pipeline Segments 1 and 2

Sycamore Environmental Consultants completed a jurisdictional delineation report focusing on the project area within the City of Sacramento. The ACOE verified a wetland delineation in 2006 prepared by CH2M HILL for a portion of the former Sacramento Army Depot. The wetland delineation presented below, as adopted from the Sycamore Environmental delineation, incorporates the verified features on the CH2M HILL delineation, and highlights those portions within the study area that were not previously delineated. Table D.3-1 presents the acreages for which wetlands were not previously verified and Table D.3-2 presents the acreages presented in the verified CH2M HILL wetland delineation. The two tables combined make up the wetlands and waters of the U.S. within the project area, the former of which still requires official approval from the ACOE. Additionally, Figures D.3-3a through D.3-3e depict the location of the acreages identified in Tables D.3-1 and D.3-2. Many of these wetlands are located outside of the pipeline alignment. The discussion below focuses on those wetlands within or near project components.

Table D.3-1
Unverified Wetlands and Waters within the Study Area

Feature	Area (ac.)	Figure
Seasonal Wetland A	0.167	D.3-3d
Seasonal Wetland B	0.671	D.3-3d
Seasonal Wetland C	0.016	D.3-3d
Seasonal Wetland D	0.087	D.3-3d
Seasonal Wetland E	0.022	D.3-3b
Seasonal Wetland F	0.001	D.3-3b
Subtotal Wetlands	0.964	—
Drainage Ditch A	0.184	D.3-3d, D.3-3e
Drainage Ditch B	0.001	D.3-3b
Drainage Ditch C	0.005	D.3-3b
Old Morrison Creek	0.005	D.3-3c
Morrison Creek	0.786	D.3-3b, D.3-3c
Subtotal Waters	0.981	—
Total Wetlands and Waters	1.945	—

Source: Sycamore Environmental Consultants 2008.

Note: "—" indicates data is not applicable.

Table D.3-2
Previously Verified Wetlands and Waters within the Study Area

Feature	Area (ac.)	Figure
Vernal Pool 13	0.026	D.3-3c
Vernal Pool 14	0.022	D.3-3c
Vernal Pool 17	0.004	D.3-3c
Vernal Pool 18	0.005	D.3-3c
Vernal Pool 19	0.010	D.3-3c
Vernal Pool 20	0.015	D.3-3c
Vernal Pool 22	0.004	D.3-3c, No longer there
Vernal Pool 23 a	0.100	D.3-3c
Vernal Pool 23 b	0.001	D.3-3c
Vernal Pool 23 c	0.097	D.3-3c
Vernal Pool 24	0.033	D.3-3c
Vernal Pool 25	0.033	D.3-3c
Vernal Pool 26	0.005	D.3-3c, No longer there
Seasonal Pond 01	0.116	D.3-3c
Old Morrison Creek	0.121	D.3-3c
Drainage Ditch 05	0.032	D.3-3c
Subtotal Verified Wetlands	0.624	—
Upland Swale 03	0.069	D.3-3c
Total Verified Waters	0.069	—
Total Wetlands and Waters Verified in 2006	0.693	—

Source: Sycamore Environmental Consultants 2008.

Note: "—" indicates data is not applicable.

Wellhead Site

No wetlands were found within or near the proposed wellhead site.

Compressor Station

The compressor station site contains a number of wetlands, as described below.

Vernal Pools 13 and 14: These two features are located in a highly disturbed area within the proposed compressor station site (see Figure D.3-3c). Additionally, these vernal pools are located within the former oxidation lagoons site that was removed as part of the hazardous waste remediation with closure of the Sacramento Army Depot. The area has been scraped over and numerous tire tracks occur throughout the site. The area of the former oxidation lagoons is now a concave landscape that drains to vernal pools 13 and 14. Dominant hydrophytic species present during the March 2003 fieldwork include vernal pool popcorn flower (*Plagiobothrys stipitatus*), common tarplant (*Hemizonia pungens*), and pygmyweed (*Crassula connata*) (CH2M HILL 2003).

INTENTIONALLY LEFT BLANK

INTENTIONALLY LEFT BLANK

INTENTIONALLY LEFT BLANK

INTENTIONALLY LEFT BLANK

INTENTIONALLY LEFT BLANK

Vernal Pools 17, 18, 19, 20, 24, and 25: These features are located within the proposed compressor station site (see Figure D.3-3c). Dominant hydrophytic species present during the March 2003 delineation fieldwork include vernal pool popcorn flower, Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), pygmyweed, water-starwort (*Callitriche marginata*), goldfields (*Lasthenia fremontii*), and *Ranunculus bonariensis* (CH2M HILL 2003). Hydrology for these features is provided by runoff from surrounding uplands and direct precipitation.

Vernal Pools 22 and 26: These features were previously located within the boundary of the proposed compressor station site. Conditions have since changed compared to the CH2M HILL delineation (2003), and no well-defined topographic depression currently exists in this area and is not shown on Figure D.3-3c. The dominant vegetation that occurs in these areas is filaree (*Erodium* spp.) and rat-tail fescue (*Vulpia myuros*), which differs from the vegetation discovered during the CH2M HILL fieldwork due to the apparent disturbance of the area.

Seasonal Wetland A: This wetland is a pond located within the boundary of the proposed compressor station adjacent to Old Morrison Creek (see Figure D.3-3d). Dominant hydrophytic species according to the March 2003 delineation fieldwork include spikerush (*Eleocharis macrostachya*), umbrella sedge (*Cyperus eragrostis*), and Baltic rush (*Juncus balticus*). Hydrology is provided by runoff from surrounding uplands and overflow from Old Morrison Creek.

Drainage Ditch 5: This drainage ditch is an ephemeral ditch excavated in uplands alongside the cement pad of the proposed compressor station site (see Figure D.3-3c). The defined ditch ends in an upland approximately 130 feet from Old Morrison Creek. Per the 2003 fieldwork, dominant hydrophytic species present were vernal pool popcorn flower and Mediterranean barley (CH2M HILL 2003).

Upland Swale 3: This is an ephemeral ditch excavated in uplands that drains into Old Morrison Creek in the proposed compressor station site (see Figure D.3-3c). Hydrology is provided by surface runoff from the surrounding upland areas, including off-site runoff from paved parking lots in Depot Park. Upland Swale 3 did not contain any vegetation during the delineation fieldwork (CH2M HILL 2003).

Pipeline Segment 1

Seasonal Wetlands E and F: These features are located along the proposed pipeline segment one leading towards the compressor station site in a wide depression immediately west of the Union Pacific Railroad (UPRR) tracks and south of Elder Creek Road (see Figure D.3-3b). The dominant hydrophytic species present is the coyote thistle (*Eryngium* sp.). Other hydrophytic

vegetation present includes vernal pool popcorn flower, English plantain (*Plantago lanceolata*), and Mediterranean barley. Runoff from surrounding uplands is the primary source of hydrology.

Pipeline Segment 2

Seasonal Wetlands A through D: These four features are located nearest the location of proposed pipeline segment two (see Figure D.3-3d) between an elevated dirt access road and a drainage ditch. Seasonal Wetlands A through D do not appear to be naturally formed vernal pools. Water in these pools is the result of grade changes associated with the surrounding constructed features. Dominant hydrophytic species present are spikerush (*Eleocharis macrostachya*), vernal pool popcorn flower, annual hairgrass (*Deschampsia danthonioides*), Mediterranean barley, and coyote thistle. Other hydrophytic species present include Mediterranean beard grass (*Polypogon maritimus*), woolly marbles (*Psilocarphus* sp.), and prickly lettuce. Runoff from surrounding uplands is the primary source of hydrology for these closed depressions.

Drainage Ditch A: Drainage Ditch A runs nearest proposed pipeline segment two and is excavated in uplands parallel to the inactive UPRR rail yard (see Figure D.3-3d). Drainage Ditch A drains into Morrison Creek through a culvert and was dry during delineation fieldwork. Hydrology is provided by off-site flow through several culverts that drain water from Depot Park. The bed of Drainage Ditch A contains upland and hydrophytic vegetation. The banks contain primarily upland vegetation. There is no riparian vegetation associated with Drainage Ditch A.

Drainage Ditches B and C: Drainage Ditches B and C are excavated ephemeral ditches parallel to Elder Creek Road (see Figure D.3-3b). Drainage Ditch B starts near the northwest intersection of Elder Creek Road and the UPRR tracks and runs west, parallel to the north side of Elder Creek Road. Drainage Ditch C is located near the southeast intersection of Elder Creek Road and the UPRR tracks and continues south along the UPRR tracks. No water was present in these ditches during delineation fieldwork. Drainage Ditches B and C contain primarily upland vegetation and were littered with trash. There are no riparian corridors associated with these ditches.

Morrison Creek: Morrison Creek is a cement-lined perennial drainage that was re-routed to its present location with construction of the former Sacramento Army Depot. The portion of Morrison Creek nearest the Proposed Project is situated just north of Elder Creek Road and heads north paralleling the east side of the UPRR tracks (see Figures D.3-3b and D.3-3c). Morrison Creek turns west at the proposed compressor station site. Morrison Creek is mapped as a riverine, lower perennial, unconsolidated bottom, permanently flooded, and excavated. Shallow, flowing water was present in Morrison Creek on the day of the delineation. The bed and banks of Morrison Creek are cement lined. Hydrophytic vegetation occurs in the bed and

banks of Morrison Creek where it grows through cracks in the cement. Vegetation in the creek is periodically removed for flood control by the ACOE (ACOE 1994). No riparian vegetation is associated with Morrison Creek nearest the Proposed Project components.

Old Morrison Creek: A small portion of Old Morrison Creek was identified on the west side of Caroline Drive, not previously verified in the jurisdictional delineation (see Figure D.3-3c). Old Morrison Creek crosses under Caroline Drive through three culverts, comes to the surface for this segment, and then empties into the existing Morrison Creek through a culvert to the west. Shallow standing water was present in this portion of Old Morrison Creek during delineation fieldwork. Old Morrison Creek contains upland and hydrophytic vegetation. There is no riparian vegetation associated with Old Morrison Creek.

Table D.3-3 provides an estimate of the unverified wetlands that may be under the jurisdiction of the EPA/ACOE Rapanos Guidance (2007). It should be noted that the additional areas identified above may still be under the jurisdiction of the CDFG and/or California's Regional Water Quality Control Board (RWQCB). Final verification of jurisdictions will be by those agencies (Sycamore Environmental Consultants 2008).

Table D.3-3
Rapanos Estimate of Unverified Wetlands and Waters in the City of Sacramento
Proposed Project Area that Would be Under ACOE Jurisdiction

Feature	Rapanos Guidance Correlation	Significant Nexus*	Jurisdictional Acreage	Non-Jurisdictional Acreage
Seasonal Wetland A	Isolated wetland	No	—	0.166
Seasonal Wetland B	Isolated wetland	No	—	0.671
Seasonal Wetland C	Isolated wetland	No	—	0.016
Seasonal Wetland D	Isolated wetland	No	—	0.087
Seasonal Wetland E	Isolated wetland	No	—	0.022
Seasonal Wetland F	Isolated wetland	No	—	0.001
Drainage Ditch A	Ephemeral non-RPW	No	—	0.184
Drainage Ditch B	Ephemeral non-RPW	No	—	0.001
Drainage Ditch C	Ephemeral non-RPW	No	—	0.005
Old Morrison Creek	Ephemeral non-RPW	Yes	0.005	—
Morrison Creek	RPW	Yes	0.786	—
Total			0.791	1.153

Source: Sycamore Environmental Consultants 2008.

Note: * Significant nexus refers to Rapanos Wetland (RPW) and denotes connection to navigable waters relative to Rapanos Guidance.

"—" indicates data is not applicable.

D.3.1.5 Special-Status Plant and Animal Species within the Project Area

This section provides a description of special-status plant and wildlife species potentially occurring within the vicinity of project components located in the City of Sacramento. The descriptions are based on information in the PEA (SNGS, LLC 2007a) and PEA Amendment (SNGS, LLC 2007b), plus independent analysis of the potential for these species.

This discussion was derived from the following sources: a query of CNDDDB for the Sacramento East 7.5-minute USGS topographic quadrangle (see Figure D.3-1), a query of the CNPS Electronic Inventory for Sacramento County, a query of the USFWS Species List website, and previous environmental documents prepared for other projects in the area.

For the purposes of this report, special-status species include the following:

- Species listed, proposed, or candidate species for listing as Threatened or Endangered by the USFWS pursuant to the federal Endangered Species Act (FESA) of 1973, as amended (16 U.S.C. §1531 et seq.)
- Species listed as Rare, Threatened, or Endangered by the CDFG pursuant to the California Endangered Species Act (CESA), as amended (California Fish and Game Code §2050, et seq.)
- Species designated as Fully Protected under Section 3511 (birds), 4700 (mammals), and 5050 (reptiles and amphibians) of the California Fish and Game Code
- Species designated by the CDFG as California Species of Special Concern
- Plant species listed as category 1B or 2 by the CNPS
- Species not currently protected by statute or regulation, but considered rare, threatened, or endangered under the California Environmental Quality Act (CEQA) (Section 15380).

Wellhead, Compressor Station, and Pipeline Segments 1 and 2

Special-Status Plant Species

Sanford's Arrowhead (*Sagittaria sanfordii*)

Sanford's arrowhead is a CNPS List 1B species. It is a member of the water-plantain (*Alismataceae*) family and blooms from May to October. It is a rhizomatous, aquatic perennial herb with linear to three-angled emergent leaf blades with white-petaled flowers. It is found in shallow freshwater marshes, swamps, and low-gradient streams at elevations less than approximately 2,000 feet. Sanford's arrowhead is threatened by grazing, development, and channel alternation of its habitat (Theodore Payne Foundation 2009).

The reconnaissance-level field survey was conducted outside the blooming period for special-status vernal pool plants and a focused botanical survey was not conducted for the project area. However, Sanford's arrowhead can be identified outside of its blooming period because of its distinctive leaf characteristics. This species was not observed in the project area, but Morrison Creek, in the vicinity of the project area, could not be surveyed due to access limitations.

Morrison Creek, west of the compressor station site within Depot Park, provides limited potential habitat for this species because the creek has a concrete low-flow channel, and earthen levees. The closest CNDDDB record is approximately 2 miles downstream of the project area in Morrison Creek at Florin Road. This record is from 1993 and Morrison Creek at this location is in a cement channel, similar to Morrison Creek in the project area.

Special-Status Wildlife Species

Vernal Pool Fairy Shrimp (*Branchinecta lynchi*)

Vernal pool fairy shrimp (VPFS) are federally listed as threatened. This species occurs throughout the Central Valley and eastern margin of the Coast Ranges. VPFS occurs in neutral to slightly alkaline vernal pools; seasonal wetlands; small swales; earth slumps; or basalt-flow depression basins with grassy, or occasionally, muddy bottoms, in unplowed grassland. This species has an abbreviated life cycle, hatching when rains first inundate the pool, emerging from cysts that have lain dormant in the soil since the pool last dried.

VPFS have been recorded along the pipeline alignments from the wellhead site to the compressor station, and from the compressor station to the Sacramento Municipal Utility District (SMUD) pipelines at Fruitridge Road and UPRR crossing. It is most likely that the vernal pools and other seasonal wetlands could contain this species.

Vernal Pool Tadpole Shrimp (*Lepidurus packardii*)

The vernal pool tadpole shrimp (VPTS) is federally listed as an endangered species. It is found in deeper or longer lasting vernal pools and other seasonal wetlands. It has been recorded along pipeline segments one and two and may occur within the proposed compressor station site.

California Linderiella (*Linderiella occidentalis*)

The California linderiella is a small fairy shrimp that is included in the CDFG special animals list as a species of special concern. It occurs generally in the same locations as the VPTS and the VPFS.

Giant Garter Snake (*Thamnophis gigas*)

The giant garter snake is listed as a federal and state threatened species. This species is found in freshwater marshes, low-flowing streams, drainage ditches, and irrigation canals. There is one

record of this species 5 miles south of the project area. There is no record of the species east of Highway 99 along Morrison Creek. Morrison Creek could be considered potential habitat but it lacks emergent herbaceous wetland vegetation.

Burrowing Owl (*Athene cunicularia*)

Burrowing owl, a year-round resident of the area, is a state species of special concern. It occurs on grasslands and pastures in the general area and was observed on the project site near Morrison Creek during biological surveys (SNGS, LLC 2007a). There is a potential that this species occurs throughout the project area and would utilize ground squirrel burrows for nesting and cover.

Great Egret (*Ardea alba*)

Great egret rookeries are included in the CDFG special animals list. The species is frequently seen in the project area but there are no records of rookeries in the area (SNGS, LLC 2007a).

Great Blue Heron (*Ardea Herodias*)

Great blue heron rookeries are also included in the CDFG special animals list. This species was observed foraging along Morrison Creek. There are no records of rookeries in the project area (SNGS, LLC 2007a).

Swainson's Hawk (*Buteo swainsoni*)

Swainson's hawk is a state-listed threatened species that occurs throughout the Central Valley where suitable nesting and foraging habitat is available. It has been documented near the Sacramento River, approximately 6 miles from the Proposed Project site. There is the potential that the cottonwoods near the proposed wellhead site could support nesting for this species (SNGS, LLC 2007a).

White-Tailed Kite (*Elanus leucurus*)

The white-tailed kite is a California Fully Protected species. It occurs throughout the project area and could potentially nest in the cottonwoods adjacent to the wellhead site (SNGS, LLC 2007a).

Cooper's Hawk (*Accipiter cooperii*)

The Cooper's hawk is a California Species of Special Concern. It may forage within the grasslands of the Proposed Project area but it does not breed in the project area (SNGS, LLC 2007a).

Other Birds of Prey and Migratory Birds

A number of migratory birds could nest in the vicinity of the project, based on the presence of suitable nesting habitat. There are over 100 species that could occur in the area. In general, the

breeding season for migratory birds and nesting birds of prey is from March 1 to August 15. The occupied nests and eggs of these birds are protected by federal and state laws, including the California Fish and Game Code Sections 3505 and 3505.5. Preconstruction surveys would be required to determine if species were present during the breeding season.

D.3.1.6 Critical Habitat

Under FESA, USFWS, to the extent prudent and determinable, is required to designate critical habitat for endangered and threatened species (16 U.S.C. §1533 (a)(3)). Critical habitat describes the areas of land, water, and air space containing the physical and biological features essential for the survival and recovery of endangered and threatened species. Designated critical habitat includes sites for breeding and rearing, movement or migration, feeding, roosting, and shelter.

Designated critical habitat requires special management and protection of existing resources, such as water quality and quantity, host animals and plants, food availability, pollinators, sunlight, and specific soil types. Critical habitat designation delineates all suitable habitat, occupied or not, essential to the survival and recovery of the species. A critical habitat designation affects only projects subject to federal action. Under projects subject to federal action, potential impacts to designated or proposed critical habitat will be evaluated by the USFWS under Section 7 of FESA. The project may be subject to a federal action in that it may be required to obtain a Section 404 permit from the ACOE. ACOE will determine whether it will consult with USFWS under Section 7 with respect to critical habitat.

Wellhead, Compressor Station, and Pipeline Segments 1 and 2

There is no designated critical habitat within the vicinity of the wellhead site, compressor station, and pipeline segments one and two of the Proposed Project.

D.3.1.7 Regional Wildlife Corridors

Wildlife corridors are defined as areas that connect suitable wildlife habitat areas in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Natural features, such as canyon drainages, ridgelines, or areas with vegetation cover, provide corridors for wildlife travel. Wildlife corridors are important because they provide access to mates, food, and water; allow the dispersal of wildlife from high-density areas; and facilitate the exchange of genetic traits between populations (Beier and Loe 1992). Wildlife corridors are considered sensitive by resource and conservation agencies.

One regional wildlife corridor, the Morrison Creek Corridor, occurs within the Proposed Project area. This area provides access for wildlife movements as well as habitat for many wildlife species.

D.3.2 Applicable Regulations, Plans, and Standards

D.3.2.1 Federal Regulations

Clean Water Act

The Clean Water Act (CWA) is intended to restore and maintain the quality and biological integrity of the nation's waters. It prohibits the discharge of pollutants into waters of the U.S. without a National Pollutant Discharge Elimination System (NPDES) permit from the Environmental Protection Agency (EPA) (33 U.S.C. §1251 et seq.). By issuing NPDES permits, the EPA can regulate the discharge of pollutants to protect water quality.

Section 404 of the CWA stipulates that whenever any person dredges or fills waters of the U.S. (e.g., streams, wetlands, lakes, bays), a permit is required from the ACOE. In *Solid Waste Agency of Northern Cook County (SWANCC) v. ACOE*, the Supreme Court ruled that the jurisdiction of the ACOE does not extend to isolated, intrastate, non-navigable waters and wetlands, such as vernal pools, ephemeral streams, and wetlands not associated with a stream channel. ACOE has issued 44 separate Nationwide Permits (NWP) for different types of projects with minor impacts to wetlands. Depending on the level of impact, projects qualifying for an NWP may be required to provide ACOE with Pre-Construction Notification of the impacts and meet other restrictions. Projects with greater wetlands impacts than those allowed under one of the NWP require an Individual Permit. The process of obtaining an Individual Permit includes public notice and response to all comments received; the permit decision document includes a discussion of the environmental impacts of the project; the permit addresses public and private needs; alternatives to achieve project purposes, if needed; and beneficial and/or detrimental effects of the project on public and private uses.

Section 401 of the CWA requires that an applicant for a federal license or permit to discharge into navigable waters must provide the federal agency with a water quality certification, declaring that the discharge will comply with water quality standard requirements of the CWA. ACOE issuance of a Section 404 permit triggers the requirement that a Section 401 certification also be obtained. In California, the applicable RWQCB issues this certification.

Federal Endangered Species Act

FESA designates threatened and endangered animals and plants and provides measures for their protection and recovery. Under FESA, "take" of listed animal and plant species in areas under federal jurisdiction is prohibited without obtaining a federal permit. FESA defines "take" as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct" (16 U.S.C. §1531). Harm includes any act that actually kills or injures fish or wildlife, including significant habitat modification or degradation that significantly impairs

essential behavioral patterns of fish or wildlife. Activities that damage (i.e., harm) the habitat of listed wildlife species require approval from USFWS for terrestrial species (or from the National Marine Fisheries Service (NMFS) for marine species). FESA also generally requires determination of critical habitat for listed species, although an exception for circumstances that would harm the species is widely used. If critical habitat has been designated, impacts to areas that contain the primary constituent elements identified for the species, whether or not it is currently present, is also prohibited. FESA Sections 7 and 10 provide two pathways for obtaining permission to take listed species.

Under Section 7 of FESA, a federal agency that authorizes, funds, or carries out a project that “may affect” a listed species or its critical habitat must consult with USFWS (or NMFS). For example, ACOE must issue a permit for projects impacting waters or wetlands under ACOE jurisdiction. In a Section 7 Consultation, the lead agency (e.g., ACOE) prepares a Biological Assessment (BA) that analyzes whether the project is likely to adversely affect listed wildlife or plant species or their critical habitat, and proposes suitable avoidance, minimization, or compensatory mitigation measures. If the action would adversely affect the species, USFWS has up to 135 days to complete the consultation process and develop a Biological Opinion (BO) determining whether the project is likely to jeopardize the continued existing species or result in adverse modification of critical habitat. If a “no jeopardy” opinion is provided, the project may proceed. If a jeopardy or adverse modification opinion is provided, USFWS may suggest “reasonable and prudent measures” that would result in a no jeopardy opinion.

Under Section 10 of FESA, private parties with no federal nexus may obtain an “incidental take permit” to harm listed wildlife species incidental to the lawful operation of a project. To obtain an incidental take permit, the applicant must develop an HCP that specifies impacts to listed species, provides minimization and mitigation measures and funding, discusses alternatives considered and the reasons why such alternatives are not being used. If USFWS finds the HCP will not appreciably reduce the likelihood of the survival and recovery of the species, it will issue an incidental take permit. Issuance of incidental take permits requires USFWS to conduct an internal Section 7 consultation, thus triggering coverage of any listed plant species or critical habitat present on site (thus listed plants on private property are protected under FESA if a listed animal is present). Unlike a Section 7 Consultation, USFWS is not constrained by a time limit to issue an incidental take permit.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties between the U.S. and other nations that protect migratory birds (including their eggs and nests) from killing, hunting, pursuing, capturing, selling, and shipping unless expressly authorized or permitted. The list of

migratory birds is extensive, including American crow, common raven (*Corvus corax*), and northern mockingbird (16 U.S.C. §§703–712).

D.3.2.2 State Laws and Regulations

California Endangered Species Act

CESA provides protection and prohibits the take of plant, fish, and wildlife species listed as rare, threatened, or endangered by the State of California. Unlike FESA, state-listed plants have the same degree of protection as wildlife. Take authorization may be obtained by the project applicant from CDFG under CESA Sections 2091 and 2081. Section 2091, like FESA Section 7, provides for consultation between a state lead agency under CEQA and CDFG, with issuance of take authorization if the project does not jeopardize the listed species. Section 2081 allows take of a listed species for educational, scientific, or population management purposes. In this case, private developers consult with CDFG to develop a set of measures and standards for managing the listed species, including full mitigation for impacts, and funding of implementation and monitoring of mitigation measures.

California Environmental Quality Act

CEQA was enacted in 1970 to provide for full disclosure of environmental impacts to the public before issuance of a permit by state and local public agencies. Qualifying projects include zoning ordinances, issuance of conditional use permits, variances, and the approval of tentative subdivision maps. If a project is regulated under CEQA, the developer completes necessary studies and designs for the project, and identifies the state lead agency for the project. The lead agency conducts an Initial Study that identifies the environmental impacts of the project and determines whether these impacts are significant. In some cases, the lead agency may skip the preparation of the Initial Study and proceed directly to the preparation of an EIR. The lead agency may prepare a Negative Declaration if it finds no significant impacts; a Mitigated Negative Declaration if it revises the project to avoid or mitigate significant impacts; or an EIR if it finds significant, unmitigated impacts. The EIR is subject to more extensive public comment and provides information on the potentially significant impacts, lists ways to minimize these impacts, and discusses alternatives to the project. CEQA only provides a public review process, and projects with significant impacts may be approved if the lead agency makes a finding of overriding considerations.

In addition to state-listed or federally listed species, special-status plants and animals receive consideration under CEQA. Special-status species include wildlife Species of Special Concern listed by CDFG, and plant species on the CNPS List 1A, 1B, or 2.

Fully Protected Species

California Fish and Game Code provides the highest level of protection for mammals, birds, reptiles and amphibians, and fish listed as Fully Protected. Designated species may not be taken or possessed at any time. CDFG cannot issue permits or licenses that authorize the take of any fully protected species, except for certain circumstances such as scientific research and live capture and relocation to protect livestock.

Porter-Cologne Act

The intent of the Porter-Cologne Act is to protect water quality and the beneficial uses of water, and applies to both surface water and groundwater. Under this law, the State Water Resources Control Board (SWRCB) develops statewide water quality plans, and the RWQCB develops basin plans that identify beneficial uses, water quality objectives, and implementation plans. The RWQCBs have the primary responsibility to implement the provisions of both statewide and basin plans. Waters regulated under the Porter-Cologne Act include isolated waters that are no longer regulated by the ACOE. Developments with impact to jurisdictional waters must demonstrate compliance with the goals of the act by developing Stormwater Pollution Prevention Plans (SWPPPs), Standard Urban Storm Water Mitigation Plans, and other measures in order to obtain a CWA Section 401 certification.

Streambed Alteration Agreement

CDFG must be notified prior to beginning any activity that will obstruct or divert the natural flow of, use material from, or deposit or dispose of material into a river, stream, or lake, whether permanent, intermittent or ephemeral waterbodies under Section 1602 of the California Fish and Game Code. CDFG has 30 days to review the proposed actions and propose measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by CDFG and the applicant is the Streambed Alteration Agreement. The conditions of a Streambed Alteration Agreement and a CWA Section 404 permit often overlap.

D.3.2.3 Regional Policies, Plans, and Regulations

The general plans and municipal codes pertaining to each respective project component guides the conservation and protection of biological resources. The tree preservation ordinance for the City of Sacramento and the former Army Depot reuse agreement between the City of Sacramento and the U.S. Department of the Army (City Agreement 95-07) are identified below.

City of Sacramento Tree Preservation Ordinance

The City of Sacramento has adopted an ordinance (Municipal Code 12.56.60.1) to protect trees as a significant resource of the community. It is the City of Sacramento's policy to retain trees

when possible, regardless of their size. When circumstance will not allow for retention, permits are required to remove trees that are within City of Sacramento jurisdiction. Removal of, or construction around trees that are protected by the tree ordinance are subject to permission and inspection by city arborists. The City of Sacramento Tree Service Division reviews project plans during the construction process to minimize impacts to trees along the streets of the city. (Sacramento, City of 1988; Sacramento, City of 2000.)

City of Sacramento Army Depot Reuse Plan (City Agreement 95-07)

The City of Sacramento acquired former Army Depot property from the U.S. Department of the Army through a series of conveyances. The Sacramento Army Depot Reuse Plan (Sacramento, City of 1994) set aside approximately 63 acres in the present Depot Park for a natural resource protection area. The city has agreed to establish and implement a mitigation monitoring plan to ensure all mitigation measures set forth in the Sacramento Army Depot EIR, Sacramento Army Depot Disposal and Reuse Plan, and the Biological Assessment for the Vernal Pool Fairy Shrimp are observed.

D.3.3 Environmental Impacts and Mitigation Measures for the Proposed Project

D.3.3.1 Definition and Use of Significance Criteria

In accordance with Appendix G of the CEQA Guidelines, the Proposed Project would have a significant impact on biological resources if it would result in any of the following conditions:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFG or USFWS.
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrologic interruption, or other means.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Conflict with the provision of an adopted HCP, natural community conservation plan (NCCP), or other approved local, regional, or state HCP.

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

D.3.3.2 Applicant Proposed Measures

Table D.3-4 presents the applicant proposed measures (APMs) proposed by SNGS, LLC to avoid or minimize the project’s potential impacts to biological resources.

Table D.3-4
Applicant Proposed Measures for Biological Resources

APM No.	Description
1	<p>SNGS, LLC would identify work areas and would ensure that:</p> <ul style="list-style-type: none"> • Construction activities, equipment, and associated activities (e.g., staging areas) are confined to the designated work zones • Areas supporting sensitive resources (e.g., nearby seasonal wetlands and special-status species’ habitat) are avoided. <p>Construction equipment would be confined to a designated work zone in the project area. Before ground-disturbing activities are initiated, the work zone would be clearly staked and flagged. Where feasible, all adjacent waters and wetlands would be avoided and would be designated as exclusion zones during the pre-construction phase.</p>
2	<p>SNGS, LLC would conduct Worker Environmental Awareness Program (WEAP) training for construction crews before construction activities begin. The WEAP training would include a brief review of the special-status species and other sensitive resources that could occur in the Proposed Project area (including their life history and habitat requirements and what portions of the Proposed Project area they may be found in) and their legal status and protection. The program would also cover all mitigation measures; environmental permits; and Proposed Project plans, such as the best management practices (BMPs), erosion control and sediment plan, and any other required plans. During WEAP training, construction personnel would be informed of the importance of avoiding ground-disturbing activities outside of the designated work area. The designated environmental inspector would be responsible for ensuring that construction personnel adhere to the guidelines and restrictions. WEAP training sessions would be conducted as needed for new personnel brought on to the job during the construction period (relative to the area in which the employee would be working and the tasks the employee would be completing).</p>
12	<p>The equipment used for the Proposed Project would require periodic maintenance and refueling. To reduce the potential of contamination by spills, no refueling, storage, servicing, or maintenance of equipment would be performed within 100 feet of sensitive environmental resources (e.g., seasonal wetlands and Morrison Creek). Additionally, all refueling or servicing would be done with absorbent material or drip pans underneath equipment to contain spilled fuel or fluids. Any fluids drained from the machinery during servicing would be collected in leak-proof containers and taken to an appropriate disposal or recycling facility. If such activities result in spillage or accumulation of a product on the soil, the contaminated soil would be assessed and disposed of properly. Under no circumstances would contaminated soils be added to a spoils pile.</p> <p>Mobile refuelling trucks likely would be used for on-site refueling of stationary construction equipment. The refueling trucks would be independently licensed and regulated to haul and dispense fuels and to ensure that the appropriate spill prevention techniques are implemented. All maintenance materials (i.e., oils, grease, lubricants, antifreeze, and similar materials) would be stored in a designated storage area, away from site activities and more than 100 feet from sensitive resources. During construction, all vehicles and equipment required on site would be parked or stored at least 100 feet from waterbodies, wetlands, and other sensitive resource areas. These areas would be identified on the construction drawings, as appropriate. All wash-down activities would be conducted at least 100 feet from sensitive environmental resources.</p>
13	<p>Following installation of the pipeline, the right-of-way would be graded to pre-construction grades and contours and would be seeded with an appropriate seed mix. The seed mix would be composed of the appropriate mix of species and be acceptable to the landowner. All disturbed areas of paved roadways would be repaved.</p>

D.3.3.3 Biological Resources Impact Analysis

Impact B-1: Substantial Adverse Effect on Listed, Candidate, or Special-Status Species

Wellhead, Compressor Station, Pipeline Segments 1 and 2

Impact to Sanford's Arrowhead. There is a potential that the Proposed Project could impact Sanford's arrowhead if it occurs during boring of pipeline segment 1 under Morrison Creek. The lack of rain and restricted access to this area prevented full surveys, so presence is assumed. This could be from frac-outs during borings as well as from indirect means, including conduction of construction activities near Morrison Creek. This impact is significant, but will be reduced to less-than-significant levels (Class II) through implementation of Mitigation Measure B-1a.

Impact to Vernal Pool Crustaceans and Their Habitat. The seasonal wetlands in the project area has the potential for VPFS, VPTS, and California linderiella. Of particular concern is the potential loss of these species in the wetlands at the proposed compressor station site. Pipeline construction including trenching, stockpiling, equipment staging, and other activities may impact isolated wetlands near the proposed pipeline alignment. Since analysis of the vernal pools for fairy shrimp was not conducted, presence is assumed. This impact is considered significant (Class II). Implementation of Mitigation Measure B-1b will reduce this impact to a less-than-significant level.

Impact to Giant Garter Snake. Morrison Creek is marginal habitat for this species but their presence is assumed. The potential habitat would be crossed using horizontal directional drilling (HDD). In the event of a potential frac-out, it is anticipated that impact to this species may be significant but will be mitigated to a less-than-significant level (Class II) through implementation of Mitigation Measure B-1c, even though there is a low potential for the area to support this species.

Impact to Burrowing Owls. Implementation of the Proposed Project has a potential to impact nesting burrowing owls due to construction of the wellhead site, compressor station, and pipeline segments one and two. No owls have been identified during initial surveys but they have been previously identified in the area. However, there is a potential that birds could nest in the area prior to construction since ground squirrel burrows (where they build nests) are located in the area. This impact is considered significant (Class II) but will be mitigated to a less-than-significant level through implementation of Mitigation Measure B-1d.

Impact to Foraging Habitat for the Swainson's Hawk, White-Tailed Kite, Cooper's Hawk, Great Egret, and Great Blue Heron. Implementation of the Proposed Project would result in the loss of or substantial disturbance to approximately 9 acres of grassland habitat. This would reduce foraging habitat to these special-status raptors and other raptors in the area. This impact is

considered significant (Class II) and will be mitigated to less-than-significant levels through Mitigation Measure B-1e.

Impact to Nesting Raptors and Other Nesting Migratory Birds. There are a number of trees in the project area that could be nesting habitat for the Swainson's hawk and other raptors. No nesting birds were noted during the surveys; however, they could be present near the construction areas at the time construction begins. This includes the cottonwoods near the wellhead site and other trees near the compressor station and pipeline segments. Trees are not proposed to be removed with implementation of the Proposed Project. However, construction activities, including noise and presence of workers, could potentially result in significant impacts to nesting birds (Class II). This impact will be mitigated through implementation of Mitigation Measure B-1f.

Mitigation Measures for Impact B-1: Substantial Adverse Effect on Listed, Candidate, or Special-Status Species

B-1a Impacts to Sanford's Arrowhead. Prior to initiation of construction, the applicant shall retain a qualified botanist to survey for the Sanford's arrowhead from Elder Creek Road to 250 feet upstream and downstream of Morrison Creek where HDD would be conducted. Even though most of the habitat potentially supporting populations of this species will be avoided, activities may impact this species. This survey shall be conducted during a period of time (March through May) when the phenology of the plant will allow for ready identification. Any populations found shall be fenced under the supervision of the botanist and no work shall be conducted within the fenced area. These excluded areas shall be monitored throughout the period of construction to ensure that the fencing is maintained.

B-1b Impacts to Vernal Pool Fairy Shrimp. A protocol-level VPFS survey shall be conducted by a qualified biologist at each potential wetland habitat. If this is not conducted, then it shall be assumed that each potential vernal pool contains these species. These assumed-occupied areas shall be avoided where possible by fencing off these areas and monitoring during construction to ensure the areas are not disturbed. Also, use of HDD to avoid these areas should be used where feasible. Consultation shall be conducted with the USFWS to obtain any necessary permits or approvals if populations or assumed populations would be disturbed. For areas that cannot be avoided, at least two vernal pool credits shall be purchased prior to any construction at a USFWS-approved preservation bank for every acre directly or indirectly impacted.

B-1c Impacts to Giant Garter Snake. Construction in areas determined to be potential habitat for the giant garter snake shall be conducted between May 1 and October 1. Moreover, consultation shall be conducted with the USFWS to obtain the necessary permits and approvals. Surveys for the species shall be conducted 24 hours before commencement of

construction activities or potential activity. Any occupied area shall be avoided by construction. Any impact to upland or marsh vegetation shall be mitigated by restoration of habitat after completion of impacts.

B-1d Impacts to Active Burrowing Owl Burrows. Owls could nest in the Proposed Project area during the spring and summer, although no nesting owls were noted during the prior biological surveys. However, they could begin nesting prior to construction. Therefore, preconstruction surveys shall be conducted by a qualified biologist within 30 days prior to initiation of construction. If burrowing owls are observed between February 1 and August 15, a 250-foot buffer shall be established around the burrow and no work shall commence in the buffer zone until young have fledged. If construction is occurring during non-breeding season, then passive relocations shall be conducted under supervision by the CDFG.

B-1e Impacts to Foraging Habitat for Swainson's Hawk and Other Raptors. The applicant shall mitigate for loss of habitat on a .75:1 ratio through purchase of mitigation bank credits in a CDFG mitigation bank or payment of a mitigation fee to an approved habitat mitigation bank. This would be for the permanent loss of habitat at the proposed compressor station site and proposed wellhead site.

B-1f Impacts to Active Nests of Raptors or Other Migratory Birds. No nesting birds were recorded during previous surveys; however, birds could nest prior to construction in the spring and summer. Therefore, preconstruction surveys shall be conducted during the breeding season (February 1 through August 30) within one-half mile of all construction activities. The survey shall be conducted by a qualified biologist to determine if any nesting raptors or migratory birds are present. If present, construction shall be delayed until the birds have fledged. If that is not possible, then a minimum 250-foot buffer zone shall be established in consultation with the CDFG and the nests shall be monitored during construction.

Impact B-2: Substantial Adverse Effect on Riparian Habitat or Other Sensitive Habitat

Wellhead, Compressor Station, Pipeline Segments 1 and 2

No riparian habitats would be impacted by these project components as the project will use HDD near the riparian areas. In the event of a frac-out, there would be a potential significant impact (Class II), due to disturbance of the riparian area with drilling mud. It should be noted that the Sacramento Army Depot Reuse Plan (Sacramento, City of 1994) set aside approximately 63 acres in the present Depot Park for a natural resource protection area. A portion of pipeline segment one and most of pipeline segment two are contained within this resource protection area. Implementation of the Proposed Project would result in trenching through this area as well

as use of HDD under Morrison Creek. This would result in temporary loss of grassland habitat and potential impacts to vernal pools and fairy shrimp. Mitigation measures including revegetation of pipeline alignments and compensation for loss of any vernal pools (Mitigation Measure B-1b) would reduce these impacts to less-than-significant levels (Class II). The proposed compressor station and associated pipelines are outside of this area.

Impact B-3: Substantial Adverse Effect on Federally and State-Protected Wetlands

Wellhead, Compressor Station, Pipeline Segments 1 and 2

Implementation of the Proposed Project has the potential to impact wetlands and other waters of the U.S. as well as wetlands under the jurisdiction of the CDFG and the RWQCB through development of the compressor station, and installation of pipeline segments one and two. It is estimated that 0.50 to 0.75 acre of wetlands would be disturbed. This is considered a significant impact and will require permits from the ACOE under Section 404 of the CWA and certification from the RWQCB under Section 401 of the CWA. For those wetlands not under ACOE jurisdiction, the areas may still be under jurisdiction of the RWQCB under the Porter-Cologne Act. CDFG will also be required to approve HDD under waters within their jurisdiction. With implementation of Mitigation Measures B-3a and B-3b, impacts will be reduced to less-than-significant levels (Class II).

Mitigation Measures for Impact B-3: Substantial Adverse Effect on Federally Protected and State-Protected Wetlands.

B-3a Avoidance of Wetlands and Compensation. The wetlands delineation prepared by Sycamore Environmental Consultants (2008) for those areas not verified in the earlier delineation by CH2M HILL shall be verified and concurrence on the areas of ACOE jurisdiction shall be obtained by ACOE. Wetlands shall be avoided where feasible either through rerouting of the pipeline or the use of HDD. Where wetlands cannot be avoided, the loss of wetlands shall be compensated for through restoration of the wetlands or through creation of wetlands elsewhere, either directly or through an established wetlands bank approved by the ACOE. CDFG or RWQCB permits shall be obtained by the appropriate agency prior to initiation of construction. It is estimated that the mitigation ratios will be between 2 to 1 and 3 to 1.

B-3b Avoidance of Impacts to Creeks and Drainages. Creek and drainage crossings shall be conducted in a manner that does not result in a sediment-laden discharge or hazardous materials release to the waterbody. The following measures shall be implemented during horizontal boring (jack and bore) operations:

- (1) Site preparation shall begin no more than 10 days prior to initiating horizontal bores to reduce the time soils are exposed adjacent to creeks and drainages.
- (2) Trench and/or bore pit spoil shall be stored a minimum of 25 feet from the top of bank or wetland/riparian boundary for Morrison Creek. Spoils shall be stored behind a sediment barrier and covered with plastic or otherwise stabilized (i.e., tackifiers, mulch, or detention).
- (3) Portable pumps and stationary equipment located within 100 feet of a water resource (i.e., wetland/riparian boundary, creeks, drainages) shall be placed within secondary containment with adequate capacity to contain a spill (i.e., a pump with 10 gallon fuel or oil capacity should be placed in secondary containment capable of holding 15 gallons). A spill kit shall be maintained on site at all times.
- (4) Immediately following backfill of the bore pits, disturbed soils shall be seeded and stabilized to prevent erosion and temporary sediment barriers left in place until restoration is deemed successful.
- (5) SNGS, LLC shall obtain the required permits prior to conducting work associated with HDD activities and provide proof to CPUC. Required permits may include ACOE CWA Section 404, RWQCB CWA 401, CDFG Streambed Alteration Agreement 1602. SNGS, LLC shall implement all pre- and post-construction conditions identified in the permits issued for HDD activities. This will involve methods to avoid or remediate frac-outs.

Impact B-4: Impacts to Wildlife Movement Corridors

Wellhead, Compressor Station, Pipeline Segments 1 and 2

Construction of the wellhead site, compressor station, and most of the pipelines would not impact wildlife corridors. Construction of the proposed pipeline would tunnel under Morrison Creek using HDD. Morrison Creek is a potential wildlife movement corridor. No impacts to fish habitat are expected. There may be short-term disturbances to this corridor. However, the level of disturbance is considered low due to its temporary nature. This impact is considered less than significant (Class III). The proposed compressor station and wellhead site are not considered to be located in movement corridors. Therefore, no impact will be associated with those components.

Impact B-5: Conflicts with Regional Habitat Conservation Planning Efforts

Wellhead, Compressor Station, Pipeline Segments 1 and 2

A portion of the Proposed Project within the unincorporated portion of Sacramento County is located within the South Sacramento HCP. The activities of the Proposed Project would mainly

be in the vicinity of the Urban Services Boundaries of the plan. No resources of concern occur in here because the area is urbanized. Because this portion of the project is in an urban area, the impact is considered less than significant (Class III).

Impact B-6: Conflict with any Local Policies or Ordinances Protecting Biological Resources, Such as a Tree Preservation Policy or Ordinance.

Wellhead, Compressor Station, Pipeline Segments 1 and 2

Implementation of the Proposed Project is not expected to impact any of the trees in the area so there would be no conflict with the City of Sacramento Tree Preservation Ordinance. No impact would occur.

A portion of pipeline segment one and most of pipeline segment two are contained within the natural resource protection area set aside in The Sacramento Army Depot Reuse Plan (Sacramento, City of 1994). With implementation of Mitigation Measure B-6, potential impacts of pipeline construction in this protected area will be reduced to less than significant (Class II).

Mitigation Measure for Impact B-6: Conflict with any Local Policies or Ordinances Protecting Biological Resources

B-6 SNGS, LLC shall coordinate with the City of Sacramento and the Department of the Army to avoid any loss of wetlands or to compensate for loss within the natural resource protection area set aside in The Sacramento Army Depot Reuse Plan. This could include increased use of HDD or compensation for any wetland loss on a 2 or 3-to-1 basis.

D.3.4 Project Alternatives

D.3.4.1 Gas Field Alternatives

Freeport Gas Field

Environmental Setting

The Freeport Gas Field is located approximately 5 miles southwest of the Florin Gas Field on agricultural land located on the suburban fringe of Elk Grove. The gas field is partially located underneath a wastewater treatment plant. It is likely that this alternative would be constructed in a buffer strip around the wastewater treatment plant containing natural areas and agriculture. This area is in an agricultural area that would be expected to contain habitat for Swainson's hawk, burrowing owls, and other raptors. The area contains wetlands that could support fairy shrimp and giant garter snakes. This area also contains habitat suitable for waterfowl.

Environmental Impacts and Mitigation Measures

Similar to the Proposed Project, this alternative would involve constructing facilities including injection/withdrawal wells, compressor station, and connecting pipelines. This alternative would construct nearly 1 mile of pipeline travelling through a largely rural area in order to reach tie-ins. Construction of the Proposed Project would have the potential to significantly impact fairy shrimp, giant garter snakes, burrowing owl, raptors, and waterfowl as discussed under Impact B-1. Mitigation Measures B-1a through B-1f would mitigate these impacts to less than significant (Class II). There may also be wetland impacts (Impact B-3) including an acre or more depending on construction methods used that may be significant, but these impacts can be mitigated to less than significant through implementation of Mitigation Measures B-3a and B-3b (Class II). Impacts to biological resources would be similar to the Proposed Project but could be greater due to the more rural nature of the area.

Comparison to the Proposed Project

Biological impacts resulting from the development and construction of the Freeport Gas Field alternative would be greater than those of the Proposed Project due to the more natural nature of the project site, additional wetlands, and the potential for the site to support several special-status species.

Snodgrass Slough Gas Field

Environmental Setting

The Snodgrass Slough Gas Field is located approximately 20 miles southwest of the Florin Gas Field on agricultural land adjacent to the Reclamation District 551 Borrow Canal. Additionally, the Snodgrass Slough Gas Field is located 3 miles east of the Sacramento River and California State Highway 160 and 4 miles north of the nearest population center, Walnut Grove. This area is in an agricultural area that would be expected to contain habitat for Swainson's hawk, burrowing owls, and other raptors. The area contains wetlands, including Snodgrass Slough that could support fairy shrimp and giant garter snakes.

Environmental Impacts and Mitigation Measures

Similar to the Proposed Project, this alternative would involve constructing facilities including injection/withdrawal wells, compressor station, and connecting pipelines. However, due to its location, nearly 5 miles of pipeline would be required for the transmission of natural gas from the extraction point to tie-ins with Pacific Gas and Electric (PG&E) and SMUD pipelines. Additionally, pipeline construction would require HDD to cross beneath the Snodgrass Slough, I-5, and UPRR. Construction of the Proposed Project would have the potential to create similar significant impacts to fairy shrimp, giant garter snakes, burrowing owl, raptors, and waterfowl to

those discussed under Impact B-1. Mitigation Measures B-1a through B-1f would mitigate these impacts to less than significant (Class II). There may also be wetland impacts (Impact B-3) including an acre or more depending on construction methods that may be significant, but these impacts can be mitigated to less than significant through implementation of Mitigation Measures B-3a and B-3b (Class II). Other biological impacts are anticipated to be similar to the Proposed Project.

Comparison to the Proposed Project

The biological resource impacts resulting from the development and construction of the Snodgrass Slough Gas Field alternative would be slightly greater than those of the Proposed Project because it has a greater potential to impact special-status species and wetlands.

Thornton Gas Field

Environmental Setting

The Thornton Gas Field is located approximately 20 miles south of the Florin Gas Field on agricultural land south of the Cosumnes River Preserve. This area is a high-value habitat containing a wide variety of riparian species, raptors, and potentially special-status fish species. It is also known to contain high-value habitat for waterfowl.

Environmental Impacts and Mitigation Measures

Similar to the Proposed Project, this alternative would involve constructing facilities including injection/withdrawal wells, compressor station, and connecting pipelines. This alternative would construct nearly 7 miles of pipeline travelling through a largely rural area in order to reach tie-ins. The implementation of the this alternative would produce greater significant impacts to special-status wildlife (Impact B-1) and to wetlands (Impact B-3) to those of the Proposed Project, including potential impacts to raptors, the giant garter snake, waterfowl, and special-status fish species. Mitigation Measures B-1a through B-1f and B-3a and B-3b would be required to mitigate impacts to less than significant (Class II). This is due to the higher biological resources in the project area.

Comparison to the Proposed Project

Biological impacts resulting from the development and construction of the Thornton Gas Field alternative would be substantially greater than those of the Proposed Project. This is due to the potential to impact a number of special-status species and impact the nearby Cosumnes River Preserve.

D.3.4.2 Project Design Alternatives

Alternative Wellhead Site to Compressor Station Pipeline Route 1

Environmental Setting

This alternative (see Figure C-5, Alternative Connecting Pipelines) would utilize the same construction locations for the wellhead site, compressor station, and SMUD Line 700 tie-in. Only the pipeline route would differ from the Proposed Project. From the northwest corner of the wellhead site, this alternative would head due east to the UPRR tracks. This alternative would parallel Junipero Street and would cross an active industrial-use yard. It would then parallel the UPRR tracks and run northwest to Elder Creek Road. This route would be approximately 7,800 feet long. This alternative would be approximately 450 feet longer than the Proposed Project but would cross less grassland.

Environmental Impacts and Mitigation Measures

The impacts of this alternative would have similar significant impacts as the Proposed Project (Impacts B-1 and B-3) in the area of special-status wildlife and wetlands, except that slightly less habitat area would be impacted by the pipeline since it would cross urban areas potentially reducing the impacts to wetlands and grasslands. Mitigation Measures B-1a through B-1f and B-3a and B-3b would be required to reduce impacts to less than significant (Class II).

Comparison to the Proposed Project

Biological impacts resulting from the design of Alternative Wellhead Site to Compressor Station Pipeline Route 1 would be slightly reduced from those of the Proposed Project, as a portion of the pipeline crosses an industrial yard. No biological resources would be impacted through this portion of the alignment, thus reducing the impact to grassland habitat and potentially to wetlands.

Alternative Wellhead Site to Compressor Station Pipeline Route 2

Environmental Setting

This alternative would utilize the same construction locations for the wellhead site, compressor station, and SMUD Line 700 tie-in as the Proposed Project (see Figure C-5). Only the pipeline route would differ. From the northwest corner of the wellhead site, this alignment would run approximately 600 feet north within the utility alignment to Berry Avenue, and then would parallel the UPRR tracks northwest to Elder Creek Road. This alignment would be approximately 7,700 feet long. This alternative would be approximately 350 feet longer than the Proposed Project. This alternative alignment crosses the same resources as the proposed alignment.

Environmental Impacts and Mitigation Measures

Generally, the biological impacts for this project design alternative would be similar to those discussed for the Proposed Project because it would disturb the same areas of habitat and wetlands. Also, the additional length of this alternative would impact urbanized areas and therefore would not impact biological resources. Implementation of APMs 12 and 13 and Mitigation Measures B-1a through B-1f and B-3a and B-3b would reduce impacts from this alternative to less than significant (Class II).

Comparison to the Proposed Project

Biological impacts resulting from the design of Alternative Wellhead Site to Compressor Station Pipeline Route 2 would be similar to those of the Proposed Project because this alternative would impact the same approximate amount of grassland habitat and wetlands.

Alternative Wellhead Site to Compressor Station Pipeline Route 3

Environmental Setting

This alternative would utilize the same construction locations for the wellhead site, compressor station, and SMUD Line 700 tie-in as the Proposed Project (see Figure C-5). Only the pipeline route would differ. From the northwest corner of the wellhead site, this alignment would run north approximately 1,650 feet within an existing utility alignment, and then approximately 650 feet north along Power Inn Road to Elder Creek Road. From that intersection, the pipeline would be installed within Elder Creek Road, for approximately 1,800 feet, to the intersection with the UPRR tracks. This alternative would be approximately 7,100 feet long. This alternative would be approximately 250 feet shorter in length compared to the Proposed Project. The alternative would cross the same basic resources as the Proposed Project.

Environmental Impacts and Mitigation Measures

Biological impacts resulting from the design of Alternative Wellhead Site to Compressor Station Pipeline Route 3 would be slightly reduced from those of the Proposed Project, as the pipeline segment distance is 250 feet shorter. This alternative would still create similar significant impacts to special-status species and wetlands (Impacts B-1 and B-3) as the Proposed Project because it would travel through the same basic habitat. Mitigation Measures B-1a through B-1f and B-3a and B-3b would be required to reduce impacts to less than significant (Class II).

Comparison to the Proposed Project

Biological resource impacts resulting from the design of Alternative Wellhead Site to Compressor Station Pipeline Route 3 would be slightly less than those of the Proposed Project because the shorter pipeline length.

D.3.4.3 Environmental Impacts of the No Project Alternative

Under the No Project Alternative, none of the facilities associated with the project or alternatives evaluated in this EIR would be developed; therefore, none of the impacts in this section would occur to biological resources.

D.3.5 Mitigation Monitoring, Compliance, and Reporting

Table G-1 shows the mitigation monitoring, compliance, and reporting program for biological resources.

D.3.6 References

16 U.S.C. §§703–712, July 3, 1918; as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986, and 1989. Migratory Bird Treaty Act of 1918 (MBTA).

16 U.S.C. §1531 et seq. Federal Endangered Species Act (FESA) of 1973.

33 U.S.C. §1251 et seq. Federal Water Pollution Control Act (Clean Water Act).

ACOE (U.S. Army Corps of Engineers). 1994. Final Sacramento Army Depot Disposal and Reuse Environmental Impact Statement, Sacramento, California.

Beier and Loe. 1992. “In My Experience: A Checklist for Evaluating Impacts to Wildlife Movement Corridors.” *Wildlife Society Bulletin*, 20 (4):434–440.

California Fish and Game Code §2050, et seq. California Endangered Species Act of 1970.

California Public Resources Code. Section 21000 et seq. California Environmental Quality Act (CEQA).

CH2M HILL. 2003. Jurisdictional Delineation Report: Transfer of land from the former Sacramento Army Depot to the City of Sacramento. Englewood, Colorado: CH2M HILL.

Dudek. 2008. Vegetation mapping prepared based on field reconnaissance and aerial photographs. April 2008.

EPA and ACOE. 2007. *Clean Water Act Jurisdiction Following the U.S. Supreme Court’s Decision in Rapanos v. United States and Carabell v. United States*, or “Rapanos Guidance.” June 5, 2007.

- Hickman, J.C. 1996. *The Jepson Manual: Higher Plants of California*. Berkeley, California: University of California Press.
- PBS&J. 2006. Reconnaissance-level special-status species surveys. Prepared for SNGS, LLC. November 2006.
- PBS&J. 2007a. Reconnaissance-level field surveys. Sacramento, California: PBS&J. Prepared for SNGS, LLC. July and August 2007.
- PBS&J. 2007b. Pipeline alignment field survey. Sacramento, California: PBS&J. Prepared for SNGS, LLC. April 2007.
- Sacramento, City of. 1988. *City of Sacramento General Plan*. Sacramento, California. Updated in 2000 and 2003. A 2030 General Plan is in preparation.
- Sacramento, City of. 2000. Sacramento Municipal Code. Sacramento, California. Accessed June 18, 2008 online:
<http://www.qcode.us/codes/sacramento/>
- Sacramento, City of. 2004. *Sacramento Army Depot Reuse Plan Draft EIR*. Sacramento, California: Prepared with EIP Associates. June 2004.
- SNGS (Sacramento Natural Gas Storage), LLC. 2007a. *Proponent's Environmental Assessment (PEA) for the Sacramento Natural Gas Storage (SNGS) Project*. Sacramento, California: SNGS, LLC and EIP Associates, a division of PBS&J. April 5, 2007.
- SNGS, LLC. 2007b. *Supplement to the Proponent's Environmental Assessment for the Sacramento Natural Gas Storage Project*. Sacramento, California: Sacramento Natural Gas Storage, LLC and EIP Associates, a division of PBS&J. July 16, 2007.
- SNGS, LLC. 2008. Response of SNGS, LLC to CPUC Data Request No. 1 dated July 12, 2007. Preliminary Jurisdictional Delineation Report. March 13, 2008.
- Sycamore Environmental Consultants, Inc. 2006. Aerial photograph of the Proposed Project and surrounding area. Sacramento, California: Sycamore Environmental Consultants, Inc. May 1, 2006.
- Sycamore Environmental Consultants, Inc. 2008. *Preliminary Jurisdictional Delineation Report for Sacramento Natural Gas Storage Project, Sacramento CA*. Sacramento, California: Sycamore Environmental Consultants. March 26, 2008.

Theodore Payne Foundation. 2009. "Sagittaria sanfordii" in Theodore Payne Foundation California Native Plant Library. Accessed January 2009 online:
http://www.theodorepayne.org/gallery/pages/S/Sagittaria_sanfordii.htm