



BIOLOGICAL RESOURCES ASSESSMENT
CITY OF SACRAMENTO
28TH STREET SOLAR PHOTOVOLTAIC FARM

AUGUST 2011

PREPARED FOR:

City of Sacramento
Dept. of Parks and Recreation
915 I Street, Fifth Floor
Sacramento, CA 95814



PREPARED BY:

Analytical Environmental Services
1801 7th Street, Suite 100
Sacramento, CA 95811
(916) 447-3479
www.analyticalcorp.com



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PURPOSE

This Biological Resources Assessment (BRA) documents sensitive biological habitats and special status species that have the potential to occur on or be affected by the City of Sacramento's Sutter's Landing Park/ 28th Street Landfill Solar Photovoltaic Park Project (proposed project), located in the City of Sacramento, California (**Figure 1**). This BRA has been prepared on behalf of the City of Sacramento (City) and has been prepared for use in permit applications and environmental review conducted in accordance with the California Environmental Quality Act (CEQA).

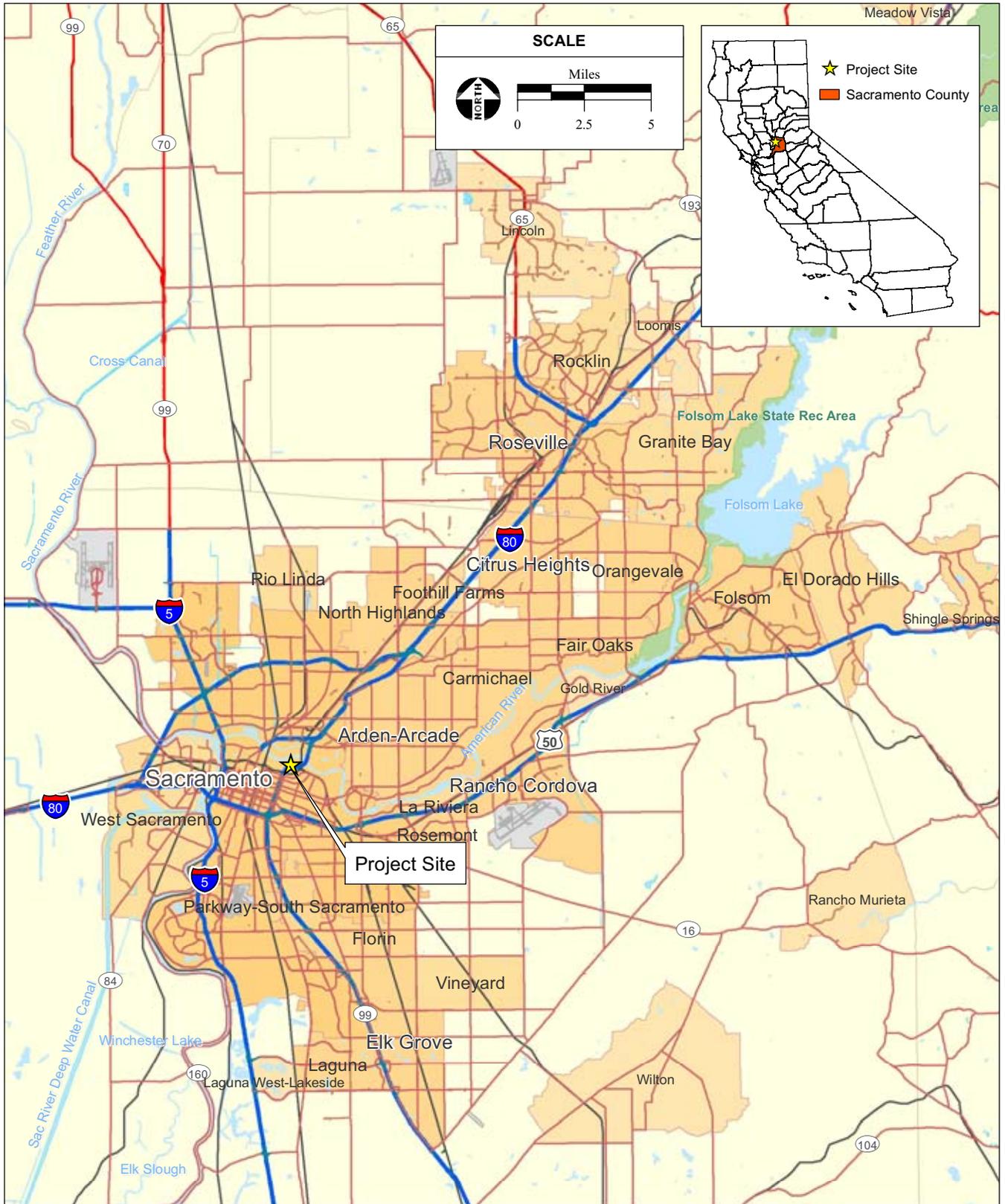
PROJECT LOCATION AND BACKGROUND

The approximately 180-acre study area is located within the Sutter's Landing Park/City of Sacramento's 28th Street Landfill on Assessor's Parcel Numbers 001-0170-018, 001-0170-021, and 001-0170-026, in the City of Sacramento, California. The study area is located at the northern end of 28th Street, in the northeast area of downtown Sacramento. The site is bordered by the American River to the north, Business Interstate 80 to the south, Southern Pacific Railroad tracks to the east, and industrial properties to the west.

The study area is located on Section 32 of Township 9 North, Range 5 East, of the Sacramento East, California, U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (quad), Mount Diablo Baseline and Meridian. The centroid of the study area is 38° 35' 12.5" North, 121° 77' 9.7" West. A topographic map and an aerial photograph of the study area are shown in **Figures 2** and **3**, respectively.

The study area is owned by the City and has historically been operated as the 28th Street Landfill until it was closed in 1997. The majority of the former 28th Street Landfill was used for the disposal of non-hazardous, inert residential, commercial, and industrial municipal solid wastes. The entire site was designated a park by the City Council in November 1995. The southwestern portion of the study area, which is currently partially developed as part of Sutter's Landing Park, was previously used as a burn dump as late as the 1950s (City of Sacramento, 2011). In 2004 the California Regional Water Quality Control Board adopted the Waste Discharge Requirements (Order Number R5-2004-0039) to prescribe the requirements for post-closure maintenance and monitoring of the closed landfill. The Landfill consists of 3 designated "waste management units" or WMU. The majority of the proposed project would involve activities on WMU A and WMU B, with some improvements on the WMU located on the west side of 28th Street. The third WMU is known as the Old Landfill, and is also subject to post-closure requirements. The facilities associated with the maintenance include gas monitoring wells, groundwater monitoring wells, and surface maintenance equipment during the summer to address settlement, mowing the grass for fire control, and drainage as the solid waste decomposes. The earliest post-closure maintenance requirement ends in 2027.

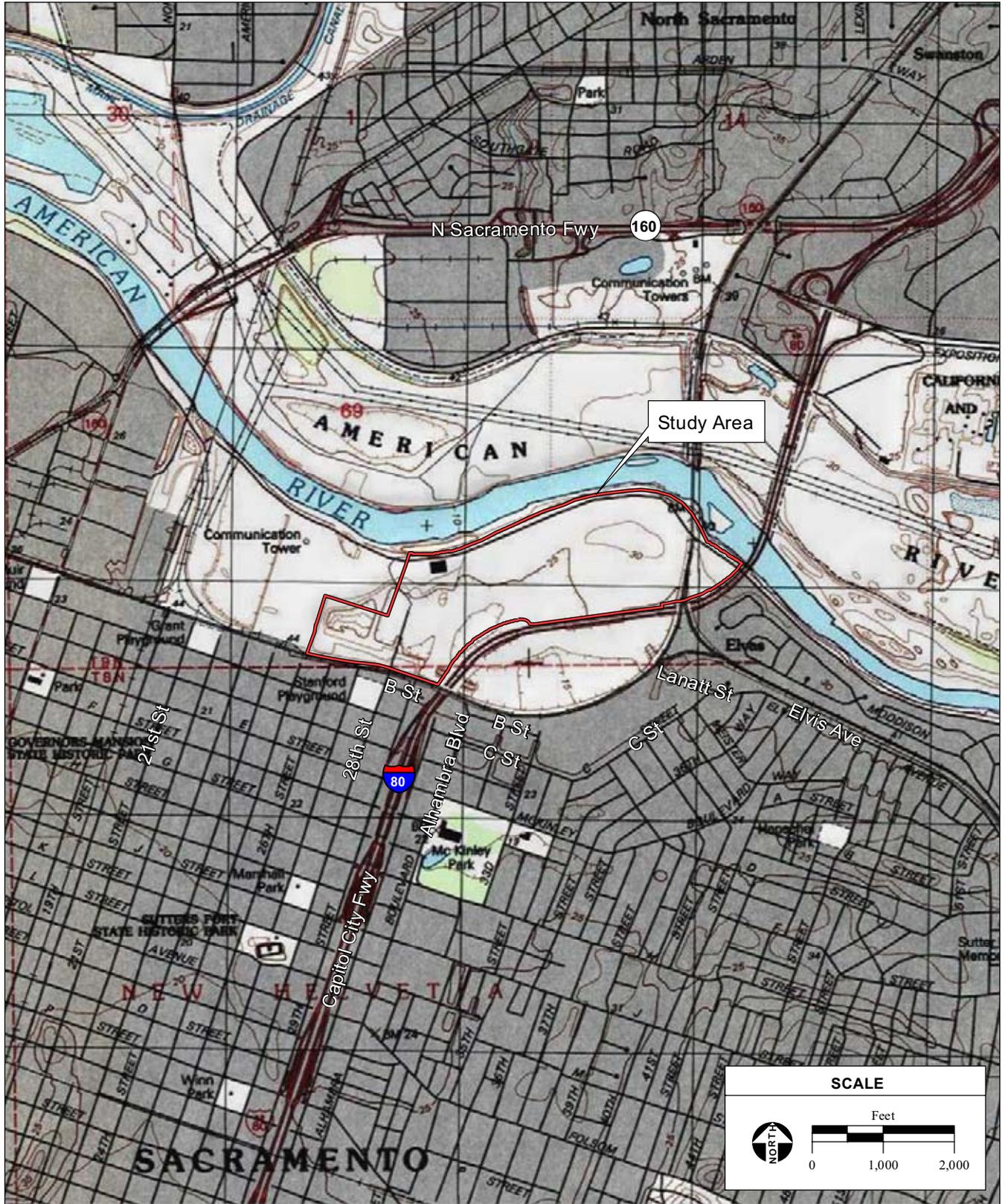
The land use designation for the study area in the 2030 General Plan is Parks and Recreation (City of Sacramento, 2009). The study area is zoned A-OS-PC (Agriculture-Open Space-Parkway Corridor). The PC designation reflects the study area's location within the American River Parkway Corridor, which is an overlay zone in the City Municipal Code (Chapter 17.160). Surrounding land uses, include recreational open space to the north, residential to the east, undeveloped lands zoned for residential uses to the



SOURCE: StreetMap North America, 2009; AES 2011

City of Sacramento 28th Street Solar Photovoltaic Farm BRA / 211526 ■

Figure 1
Regional Location



SOURCE: "Sacramento East, CA" USGS 7.5 Minute Topographic Quadrangle, T9N, R5E, Unsectioned Area of New Helvetia, Mt. Diabole Baseline & Meridian; AES, 2011

City of Sacramento 28th Street Solar Photovoltaic Farm BRA / 211526 ■

Figure 2
Site and Vicinity



Figure 3
Aerial Photograph

south, and industrial uses to the west. Recreational activities that occur onsite include a dog park, a skate park, parkway trail access to the American River bike trail, and related vehicle parking.

Current Maintenance Practices

An ongoing soils maintenance program occurs within the managed nonnative grassland. The majority of the program is done in the summer to prevent damage to the cap of the landfill. Every summer a visual survey of the landfill is conducted to locate where settlement has occurred and where water is not draining. The survey is usually conducted in May when the grass is cut and the surface of the landfill is more visible. A work plan and schematic of the landfill is developed showing the areas that settled or where erosion has occur within the last year. These areas are filled in using clean dirt, either from an existing stock pile on the site or from construction sites located within the City. Imported soils are tested for hazardous materials at a lab prior to use at the landfill.

The low areas are filled in and the soil is compacted using a water truck to moisten the soil and tracked in using a grader and other available equipment. The compaction ratio is approximately 800 to 1,000 pounds per cubic foot. This prevents water from perking through the landfill cover and into the garbage below, producing leachate. The compaction also prevents wildlife species from burrowing into the landfill cover. At the same time, the drainage ditches are graded and the areas along the gas collection pipelines and around the wells and probes located across the landfill surface are weeded.

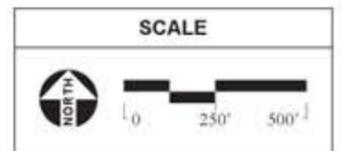
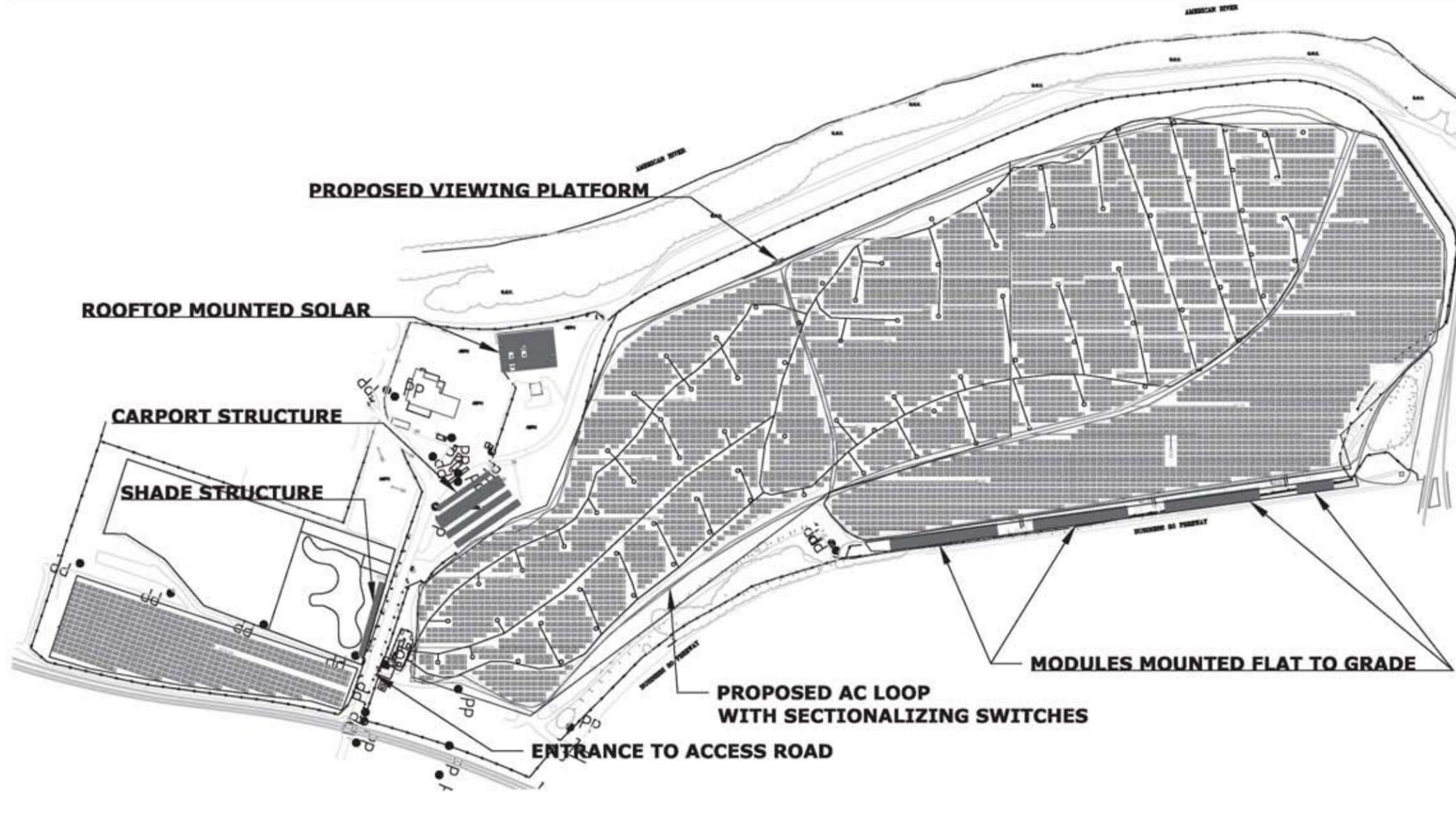
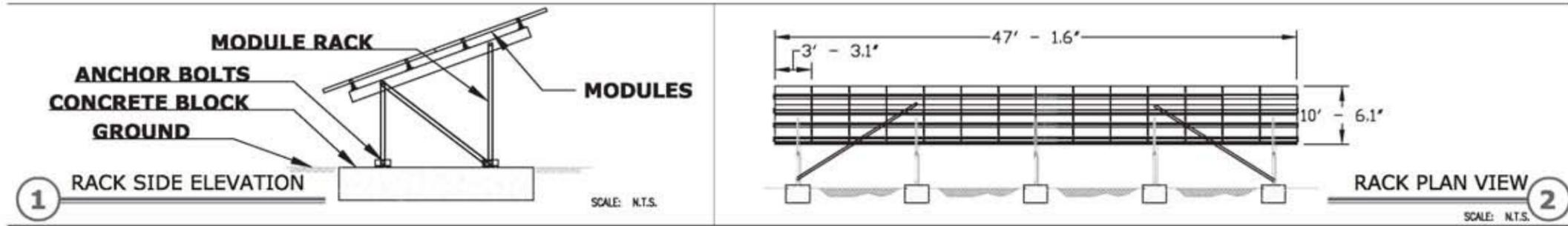
PROJECT DESCRIPTION

The City proposes to construct a photovoltaic solar park at the closed landfill and other areas of Sutter's Landing Park (**Figure 4**). The project site includes all areas where facility construction staging, construction, operation, and decommissioning would occur within the study area. The proposed project includes installation of solar modules within and adjacent to the closed landfill (i.e., within and adjacent to managed grasslands and methane collection systems), operation of the modules to produce and sell electricity, and removal of the solar installation at the conclusion of the lease term. Operation of the solar park by a solar operator would be pursuant to a lease agreement with the City.

Project Components

The solar facility would produce electricity through the installation and use of solar modules. Each solar module is approximately 5 feet high, 3 feet wide, and 1.8 inches deep. The proposed project includes the installation of approximately 83,000 modules on the landfill mound, 2,912 modules near Business Route 80, and additional solar modules on the project site to generate the desired level of electricity. Solar modules would be mounted on racks that would tilt each module approximately 20 degrees to face the south. Some panels would be mounted on shade structures on the developed portion of Sutter's Landing Park with the same tilt angle.

Each rack would hold 14 modules mounted next to each other with 0.5-inch spacing. The individual racks would be separated by approximately 1.5 feet. Taking into account that modules would be installed at a 20 degree angle, the distance between each row of modules would be approximately 9 feet. The modules closest to Business Route 80 would be approximately 40 feet from the right of way. The majority



of the solar modules would be installed on the landfill “mound” east of 28th Street and a disturbed area located north of the railroad tracks. Other modules would be located on shade structures installed to support solar panels in other areas of the park, and along Business Route 80. A viewing tower and walkway would be constructed to oversee the solar facility. The overall area where solar modules are proposed to be installed consists of approximately 104 acres.

Electrical current generated by the solar modules would feed into approximately 20 onsite inverters to change the DC electrical current generated by the modules to AC current for delivery to the grid via the Sacramento Municipal Utilities District (SMUD) infrastructure. Each inverter is approximately 6 feet high, 11 feet long, and 3 feet deep. Each inverter is enclosed in a metal box to protect the equipment. Electrical lines required for the operation of the solar panels would be located in utility corridors on the ground surface. Electrical current generated at the project site would be routed to the SMUD sub-station located on the east side of 28th Street via existing overhead power lines.

No grading of the project site would occur in connection with the installations. Excavation would only be required for footers for the shade structures and panels located in areas with slope, including those along Business Route 80. Fill material would be imported for any excavations to avoid conflict with the landfill post-closure requirements.

Vehicular access to the solar panels would be primarily via existing asphalt and improved roadways within the project site. Some temporary roadway access may be required during installation.

All inverters, switchgear, and monitoring equipment would be located on a concrete pad with a sheet roof for protection from the elements.

Construction, Operation and Removal

Construction is estimated to begin in 2012. The construction process would take approximately 2 to 4 months, but may be completed in phases over a 3-year period. The proposed project would employ a minimum of 25 people at any given time during construction. Development of the project site would require delivery of materials to staging areas for the construction of racks, which would be completed on the project site, delivery of the solar modules, construction of shade structures, installation of the racks and solar modules, and completion of electrical connections to the SMUD substation. Solar modules would be delivered in semi-trucks and trailers and offloaded at the project site for delivery to the installation location. Most of the work required during installation involves construction of racks, installation of the ballast, movement and placement of modules to the rack, and electrical wiring of the modules. Once installed, the solar modules would produce approximately 20 megawatts of electricity at full build out. Operation of the solar park requires annual inspection, maintenance, repair of the facilities, and periodic cleaning of panels, which involves several employees. At the end of the lease, the operator would remove all solar-related facilities from the project site. Panels would be removed by truck. The Sutter’s Landing Park/28th Street Landfill portion of the project site would be returned to its prior condition.

REGULATORY

Federal

Federal Endangered Species Act

The U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) implement the federal Endangered Species Act (FESA) of 1973 (16 USC Section 1531 et seq.). Under the FESA, threatened and endangered species on the federal list and their habitats (50 CFR Subsection 17.11, 17.12) are protected from “take” (i.e., activities that harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect) as well as any attempt to engage in any such conduct, unless a Section 10 permit is granted to an individual or a Section 7 consultation and a Biological Opinion with incidental take provisions are rendered from the lead federal agency. Pursuant to the requirements of the FESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed species may be present within the project site and vicinity and determine whether the proposed project will have a potentially significant impact upon such species. Under the FESA, habitat loss is considered to be an impact to the species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under the FESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC Section 1536[3], [4]). Therefore, project-related impacts to these species, or their habitats, would be considered significant and require mitigation.

Under the FESA, critical habitat may be designated by the Secretary of the Interior for any listed species. The term "critical habitat" for a threatened or endangered species refers to the following: specific areas within the geographical range of the species at the time it is listed that contain suitable habitat for the species, which may require special management considerations or protection; and specific areas outside the geographical range of the species at the time it is listed that contain suitable habitat for the species and is determined to be essential for the conservation of the species. Under Section 7 of the FESA, all federal agencies (including the USFWS and NMFS) are required to ensure that any action they authorize, fund, or carry out will not likely jeopardize the continued existence of a listed species or modify their critical habitat.

Migratory Bird Treaty Act

Most bird species, especially those that are breeding, migrating, or of limited distribution, are protected under federal and/or state regulations. Under the Migratory Bird Treaty Act (MBTA) of 1918 (16 USC Subsection 703-712), migratory bird species, their nests, and their eggs are protected from injury or death, and any project-related disturbances during the nesting cycle. As such, project-related disturbances must be reduced or eliminated during the nesting cycle.

Wetlands and Waters of the U.S.

The U.S. Army Corps of Engineers (USACE) has primary federal responsibility for administering regulations that concern waters of the U.S. (including wetlands), under Section 404 of the Clean Water Act (CWA). Section 404 of the CWA regulates the discharge of dredged or fill material into waters of the U.S. The USACE requires that a permit be obtained if a project proposes the placement of structures within, over, or under navigable waters and/or discharging dredged or fill material into waters below the

ordinary high water mark (OHWM). The USACE has established a series of nationwide permits (NWP) that authorize certain activities in waters of the U.S.

In addition, a Section 401 Water Quality Certification Permit is required to comply with CWA Sections 301, 302, 303, 306, and 307 and is regulated by the Regional Water Quality Control Board (RWQCB). Anyone that proposes to conduct a project that may result in a discharge to U.S. surface waters and/or waters of the state including wetlands (all types) year round and seasonal streams, lakes, and all other surface waters would require a federal permit. At a minimum, any beneficial uses lost must be replaced by a mitigation project of at least equal function, value, and area. Waste Discharge Requirement permits are required pursuant to California Water Code Section 13260 for any persons discharging or proposing to discharge waste, including dredge/fill, that could affect the quality of the waters of the state.

State

California Endangered Species Act

The California Endangered Species Act (CESA) prohibits the take of state-listed threatened and endangered species. Under the CESA, state agencies are required to consult with the California Department of Fish and Game (CDFG) when preparing CEQA documents. Under the CESA, the CDFG is responsible for maintaining a list of rare, threatened, and endangered species designated under state law (California Fish and Game Code 2070-2079). The CDFG also maintains lists of species of concern and fully protected species. Species of concern are those taxa that are considered sensitive and this list serves as a “watch list.” Pursuant to the requirements of the CESA, agencies reviewing proposed projects within their jurisdictions must determine whether any state-listed species have the potential to occur within a project site and if the proposed project would have any significant impacts upon such species. Project-related impacts to species on the CESA’s rare, threatened, and endangered list would be considered significant and require mitigation. The CDFG can authorize take if an incidental take permit is issued by the Secretary of the Interior or Commerce in compliance with the FESA, or if the director of the CDFG issues a permit under Section 2080 in those cases where it is demonstrated that the impacts are minimized and mitigated.

California Fish and Game Code Sections 1600-1616

Under Sections 1600-1616, the CDFG regulates activities that would alter the flow, bed, channel, or bank of streams and lakes. It derives this jurisdiction under the CESA because the CDFG is responsible for the protection of fish or wildlife resources and their habitats (including wetlands). The CDFG provides comments on USACE Section 404 and 401 permits under the Fish and Wildlife Coordination Act, last amended in 1995. The CDFG is authorized under the California Fish and Game Code Sections 1600-1616 to develop mitigation measures and to enter into Lake or Streambed Alteration Agreements with applicants whose proposed projects would obstruct the flow of, or alter the bed, channel, or bank of a river or stream in which there is a fish or wildlife resource, including intermittent and ephemeral streams and wetlands.

Local

2030 General Plan: Environmental Resources Element

The following goal and policies from the 2030 General Plan, adopted March 3, 2009 and last amended November 30, 2010, address biological resources and guide the location, design, and quality of development to protect important biological resources including wildlife habitat, open space corridors, and ecosystems (City of Sacramento, 2009).

Goal ER 2.1: Natural and Open Space Protection. Protect and enhance open space, natural areas, and significant wildlife and vegetation in the City as integral parts of a sustainable environment within a larger regional ecosystem.

Policies:

- **ER 2.1.1 Resource Preservation.** The City shall encourage new development to preserve on-site natural elements that contribute to the community's native plant and wildlife species value and to its aesthetic character. (RDR/MPSP)
- **ER 2.1.2 Conservation of Open Space.** The City shall continue to preserve, protect, and provide access to designated open space areas along the American and Sacramento rivers, floodways, and undevelopable floodplains. (MPSP/IGC)
- **ER 2.1.4 Retain Habitat Areas.** The City shall retain plant and wildlife habitat areas where there are known sensitive resources (e.g., sensitive habitats, special status, threatened, endangered, candidate species, and species of concern). Particular attention shall be focused on retaining habitat areas that are contiguous with other existing natural areas and/or wildlife movement corridors. (RDR/IGC)
- **ER 2.1.5 Riparian Habitat Integrity.** The City shall preserve the ecological integrity of creek corridors, canals, and drainage ditches that support riparian resources by preserving native plants and, to the extent feasible, removing invasive nonnative plants. If not feasible, adverse impacts on riparian habitat shall be mitigated by the preservation and/or restoration of this habitat at a 1:1 ratio, in perpetuity. (RDR/IGC)
- **ER 2.1.7 Annual Grasslands.** The City shall preserve and protect grasslands and vernal pools that provide habitat for rare and endangered species. If not feasible, the mitigation of all adverse impacts on annual grasslands shall comply with state and federal regulations protecting foraging habitat for those species known to utilize this habitat. (RDR/IGC)
- **ER 2.1.10 Habitat Assessments.** The City shall consider the potential impact on sensitive plants for each project requiring discretionary approval and shall require preconstruction surveys and/or habitat assessments for sensitive plant and wildlife species. If the preconstruction survey and/or habitat assessment determines that suitable habitat for sensitive plant and/or wildlife species is present, then either (1) protocol-level or industry-recognized (if no protocol has been established) surveys shall be conducted; or (2) presence of the species shall be assumed to occur in suitable habitat on the project site. Survey Reports shall be prepared and submitted to the City and the CDFG or the USFWS (depending on the species) for further consultation and development of avoidance and/or mitigation measures consistent with state and federal law. (RDR)

- **ER 2.1.11 Agency Coordination.** The City shall coordinate with state and federal resource agencies (e.g., CDFG, USACE, and USFWS) to protect areas containing rare or endangered species of plants and animals. (IGC)

METHODOLOGY

Analytical Environmental Services (AES) obtained information for the study area from the following sources: a USFWS (2011) list, updated April 29, 2010, of federally listed species with the potential to occur on or be affected by projects on the Sacramento East quad; a California Native Plant Society (CNPS; 2011) inventory, dated April 25, 2011, of special status species known to occur on the Sacramento East quad and 8 surrounding quads (Taylor Monument, Rio Linda, Citrus Heights, Sacramento West, Carmichael, Clarksburg, Florin, and Elk Grove); a California Natural Diversity DataBase (CNDDDB) query, dated April 2, 2011, of special status species known to occur on the Sacramento East quad and 8 surrounding quads (CDFG, 2003); and CNDDDB records of special status species documented within 5 miles of the study area. The USFWS, CNDDDB, and CNPS lists are provided in **Attachment 1**.

Standard references used for the biology and taxonomy of plants include: Abrams (1951, 1960), CNPS (2011), CDFG (2003, 2009), Hickman, ed. (1993), Mason (1957), Munz (1959), and Sawyer and Keeler-Wolf (1995). Standard references used for the biology and taxonomy of wildlife include: Cornell Lab of Ornithology (2011), Ehrlich et al. (1988), Jennings and Hayes (1994), Peterson (1990), Sibley (2003), and Stebbins (2003).

FIELD SURVEY AND ANALYSIS

AES biologists Kelly Bayne, M.S. and Laura Burris conducted a biological survey on May 27, 2011. The biological survey consisted of conducting a botanical inventory, evaluating biological communities, documenting potential habitat for special status species with the potential to occur within the study area, and conducting an informal delineation of waters of the U.S. Plants and wildlife observed within the study area are identified in **Attachment 2**.

A table summarizing the regionally occurring special status species identified on the USFWS, the CNPS, and the CNDDDB lists is provided as **Attachment 3**. The table provides a rationale as to whether the species have the potential to occur within the study area. Presence of the species or their habitat was evaluated during the May 27, 2011 biological survey. Species without the potential to occur in the vicinity of the study area are not discussed further in this report.

ENVIRONMENTAL SETTING

Soil Types

The study area is comprised 3 soil types (NRCS, 2009). A soils map of the study area is provided in **Figure 5. Table 1** summarizes the soil types by map unit symbols, percentages mapped within the study area, and identifies the landforms for the soil types that are considered hydric (NRCS, 2010).



SOURCE: NAIP Aerial Photograph, 6/21/2009; AES, 2011

City of Sacramento 28th Street Solar Photovoltaic Farm BRA / 211526 ■

Figure 5
Soils Map

TABLE 1
SOIL TYPES WITHIN THE STUDY AREA

Soil Type	Map Unit Symbol	Hydric Soil	Hydric Landform Indicator	Percentage of Study Area
Columbia Sandy Loam, Drained, 0 to 2 Percent Slopes	117	Yes	Floodplains	37
Columbia-Urban Land Complex, Drained, 0 to 2 Percent Slopes	124	Yes	Floodplains/ Natural Levees	3
Dumps	136	No	N/A	60
Total				100

NRCS, 2009; 2010.

Habitat Types

Terrestrial habitat types within the study area include: managed nonnative grassland, elderberry savanna, cottonwood forest, and ruderal/developed areas. Aquatic habitat types within the study area include: ephemeral drainage ditch and concrete-lined detention basin. Terrestrial habitat types are discussed in detail below. Aquatic habitat types are discussed further under the *Potential Waters of the U.S.* section. Representative photographs of the habitat types within the study area are shown in **Figures 6a** and **6b**. A habitat map is provided in **Figure 7**. **Table 2** summarizes the acreages of habitat types within the study area.

TABLE 2
HABITAT TYPES BY ACREAGES WITHIN THE STUDY AREA

Habitat Type	Acreage
<i>Terrestrial</i>	
Managed Nonnative Grassland	125.33
Elderberry Savanna	4.76
Cottonwood Forest	1.02
Ruderal/Developed	47.83
<i>Aquatic</i>	
Ephemeral Drainage Ditch	0.03
Concrete-Lined Detention Basin	0.72
Total	179.69

¹GIS calculations may not reflect exact acreage of study area due to rounding.

AES, 2011



PHOTO 1: View west of nonnative grassland and elderberry shrub less than one inches diameter at ground level on the west side of the study area.



PHOTO 2: View east of mowed nonnative grassland on southwest side of study area.



PHOTO 3: View southeast of elderberry savanna on the east side of the study area.



PHOTO 4: View east of cottonwood forest on the southeast side of the study area.



PHOTO 5: View northeast of nonnative grassland within the northeast side of the study area. The American River is located outside of the north side of the study area.



PHOTO 7: View southeast of concrete lined detention basin on the southwest side of the study area.



PHOTO 6: View southwest of ephemeral drainage ditch on the southwest side of the study area.



PHOTO 8: View of elderberry shrub on the south side of the study area.



Managed Nonnative Grassland

Managed nonnative grassland (nonnative grassland) occurs throughout the majority of the study area (**Figure 6a: Photographs 1 and 2; Figure 6b: Photograph 5**). The nonnative grassland is compacted on an annual basis as required by the 28th Street Landfill post-closure requirements and is regularly mowed¹ (Strauss, pers. comm., 2011). As identified within the description of current maintenance practices (page 5), burrowing rodents are actively controlled in the landfill closure area through maintenance activities associated with annual compaction and vegetation mowing. As a result of these activities, no burrows were observed within the managed nonnative grassland. Pipes are located throughout the nonnative grassland to collect methane gas and other gasses as a result of the breakdown of organic matter within the 28th Street Landfill. Dominant vegetation observed within the nonnative grassland included: wild oat (*Avena fatua*), hyssop loosestrife (*Lythrum hyssopifolia*), ripgut grass (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), Zorro fescue (*Vulpia myuros*), plantain (*Plantago coronopus*), field hedge parsley (*Torilis arvensis*), foxtail barley (*Hordeum murinum*), and field bindweed (*Convolvulus arvensis*). Two elderberry (*Sambucus mexicanus*) shrubs with stems less than one-inch diameter at ground level (dgl) were observed growing in containers surrounding pipe valves within the western portion of the nonnative grassland, and several shrubs with stems greater than one-inch dgl were observed in isolated locations in the southern portion of the nonnative grassland. The locations of shrubs with stems greater than one-inch dgl are shown in **Figure 7**. These shrubs are discussed further under the *Special Status Wildlife* section.

Elderberry Savanna

Elderberry savanna occurs within the southeast portion of the study area, east of the railroad tracks (**Figure 6a: Photograph 3**). Elderberry shrubs are the dominant overstory species observed within this habitat type. Other overstory vegetation observed within this habitat type includes: willow (*Salix* sp.), box elder (*Acer negundo*), and Oregon ash (*Fraxinus latifolia*). Dominant understory vegetation observed within this habitat type includes: Himalayan blackberry, milk thistle (*Silybum marianum*), common sow thistle (*Sonchus oleraceus*), field hedge parsley, and wild grape (*Vitis californica*).

Cottonwood Forest

Cottonwood forest occurs within the southeast portion of the study area (**Figure 6a: Photograph 4**). The cottonwood forest occurs in a low area that appears to have been historically used as a detention basin. Fremont cottonwoods (*Populus fremontii*) are the dominant overstory species observed within this habitat type. Other overstory vegetation observed within this habitat type includes: box elder, Oregon ash, interior live oak (*Quercus wislizenii*), valley oak (*Quercus lobata*), and Northern California black walnut (*Juglans hindsii*). Understory vegetation associated with this habitat type is comprised primarily of upland species including: oat, soft chess, hedgehog dogtail (*Cynosurus echinatus*), Italian thistle (*Carduus pycnocephalus*), ripgut grass, field hedge parsley, and foxtail barley.

Ruderal/Developed

Ruderal/developed areas occur throughout the study area. These areas include the railroad tracks, paved and graded roads, road shoulders, and Sutter's Landing Park, which includes paved parking lots,

¹ At the time of the May 27, 2011 biological survey, several areas of the managed nonnative grassland had been recently mowed.

buildings, ornamental landscaping, and dog and skate parks. Dominant vegetation observed within the ruderal area of this habitat type includes: field bindweed, wild oat, and prickly lettuce (*Lactuca serriola*).

Potential Waters of the U.S.

Ephemeral Drainage Ditch

An approximately one-foot wide ephemeral drainage ditch occurs adjacent to a graded service road along the southwestern boundary of the study area (**Figure 6b: Photograph 6**). The ephemeral drainage ditch drains runoff from a eucalyptus grove located outside the southern boundary of the study area following precipitation events. The ephemeral drainage ditch drains southwestward and exits the southwestern boundary of the study area. No water was observed within the ephemeral drainage ditch during the May 27, 2011 biological survey of the study area. Vegetation associated with this feature is comprised primarily of upland species including: wild oat, rippgut grass, and Italian thistle.

Concrete-Lined Detention Basin

A concrete-lined detention basin occurs on the southwest portion of the study area (**Figure 6b: Photograph 7**). The concrete-lined detention basin is a manmade feature used to hold water received from runoff from the surrounding nonnative grassland and ruderal/developed areas following precipitation events. The basin appears to hold water until it evaporates. Water was observed during the May 27, 2011 biological survey of the study area. This feature lacks vegetation. This feature is not considered potential waters of the U.S. because it is manmade, lacks hydric vegetation and soils, and is an isolated feature that lacks connectivity to a potential waters of the U.S.

SPECIAL STATUS SPECIES

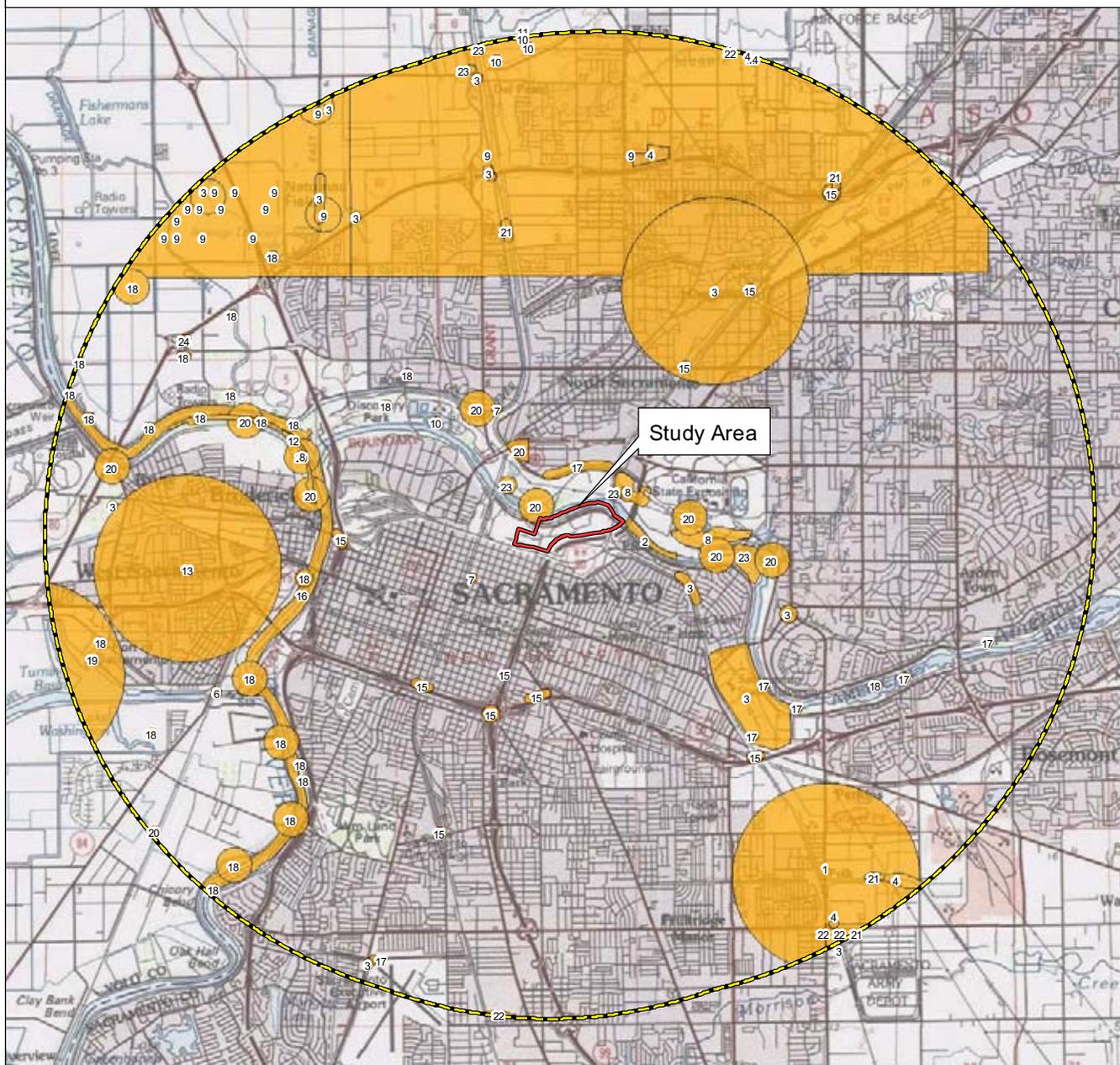
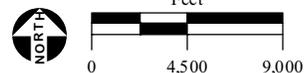
For the purposes of this assessment, special status has been defined to include those species that are:

- Listed as endangered or threatened under the FESA (or formally proposed for, or candidates for, listing);
- Listed as endangered or threatened under the CESA (or proposed for listing);
- Designated as endangered or rare, pursuant to California Fish and Game Code (§1901);
- Designated as fully protected, pursuant to California Fish and Game Code (§3511, §4700, or §5050);
- Designated as species of concern to the CDFG; or,
- Defined as rare or endangered under CEQA.

Attachment 3 provides a summary of regionally occurring special status species obtained from the USFWS, CNDDDB, and CNPS lists and evaluates whether the species have the potential to occur within the study area based on habitat types observed during the May 27, 2011 biological survey. Species without the potential to occur within the study area are not discussed further. Special status species with the potential to occur within the study area are discussed in detail below, including distances from the study area to reported CNDDDB occurrences (CDFG, 2003; 2011). A CNDDDB map of special status species documented within a 5-mile radius of the study area is provided in **Figure 8**. A critical habitat map in the vicinity of the study area is provided in **Figure 9**. The study area does not occur within critical habitat for any federally listed species.

SPECIAL STATUS SPECIES DATA

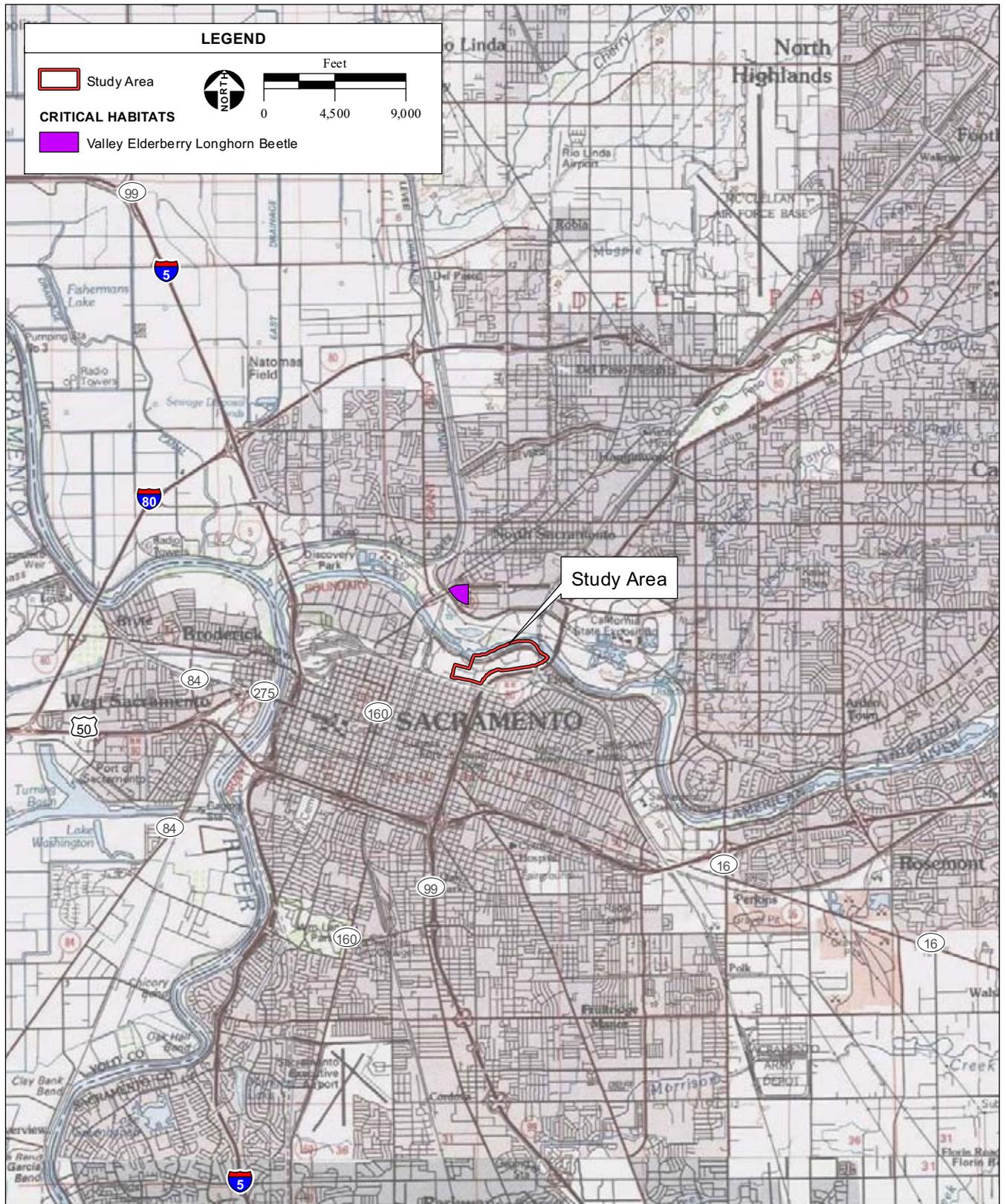
- | | | | |
|---|--|--|--|
|  5-Mile Radius | 5 - chinook salmon (Central Valley spring run ESU) | 12 - Great Valley Cottonwood Riparian Forest | 19 - tricolored blackbird |
|  Study Area | 6 - chinook salmon (Sacramento River winter run ESU) | 13 - hoary bat | 20 - valley elderberry longhorn beetle |
|  CNDDB Occurrences | 7 - Cooper's hawk | 14 - Northern Hardpan Vernal Pool | 21 - vernal pool fairy shrimp |
| 1 - American badger | 8 - Elderberry Savanna | 15 - purple martin | 22 - vernal pool tadpole shrimp |
| 2 - bank swallow | 9 - giant garter snake | 16 - Sacramento splittail | 23 - white tailed kite |
| 3 - burrowing owl | 10 - great blue heron | 17 - Sanford's arrowhead | 24 - woolly rose mallow |
| 4 - California linderiella | 11 - great egret | 18 - Swainson's hawk | |



SOURCE: California Natural Diversity Database, 4/2011; "Sacramento East, CA" USGS 7.5 Minute Topographic Quadrangle, T9N, R5E, Unsectioned Area of New Helvetia, Mt. Diabole Baseline & Meridian; AES, 2011

City of Sacramento 28th Street Solar Photovoltaic Farm BRA / 211526 ■

Figure 8
CNDDB 5-Mile Radius



SOURCE: USFWS Critical Habitat Survey of Sacramento County, Federally listed 1980; "Sacramento East, CA" USGS 7.5 Minute Topographic Quadrangle, T9N, R5E, Unsectioned Area of New Helvetia, Mt. Diablo Baseline & Meridian; AES, 2011

City of Sacramento 28th Street Solar Photovoltaic Farm BRA / 211526 ■

Figure 9
Critical Habitats

Special Status Plants

Dwarf Downingia (Downingia pusilla)

Federal Status – None

State Status – None

Other – CNPS 2

Dwarf downingia is an annual herb found in valley and foothill grassland and vernal pools from 0 to 1,476 feet. Blooming period is from March through May. Dwarf downingia is known from Fresno, Merced, Napa, Placer, Sacramento, San Joaquin, Solano, Sonoma, Stanislaus, Tehama, and Yuba counties (CNPS, 2011).

There are no CNDDDB occurrences for this species within 5 miles of the study area. The nonnative grassland within the study area provides potential habitat for dwarf downingia. The May 27, 2011 biological survey was conducted within the evident and identifiable period for dwarf downingia. Dwarf downingia was not observed in the study area. This species does not occur in the study area.

Northern California Black Walnut (Juglans hindsii)

Federal Status – None

State Status – None

Other – CNPS 1B

Northern California black walnut is a deciduous tree found in riparian forest and woodland from 0 to 1,444 feet. Blooming period is April through May. Northern California black walnut is known from Contra Costa, Lake, Napa, Sacramento, Solano, and Yolo counties (CNPS, 2011).

There are no CNDDDB occurrences for this species within 5 miles of the study area. Isolated Northern California black walnut trees were observed within the cottonwood forest of the study area. The general locations of the Northern California black walnut trees have been recorded in the CNDDDB database (CDFG, 2003). Northern California black walnut occurs in the study area.

Ahart's Dwarf Rush (Juncus leiospermus var. ahartii)

Federal Status – None

State – None

Other – CNPS 1B

Ahart's dwarf rush is an annual herb found in valley and foothill grasslands on mesic substrates from 98 to 981 feet. Blooming period is from March through May. This species is known from Butte, Calaveras, Placer, Sacramento, Tehama, and Yuba counties (CNPS, 2011).

There are no CNDDDB occurrences for this species within 5 miles of the study area. The nonnative grassland within the study area provides potential habitat for Ahart's dwarf rush. The May 27, 2011 biological survey was conducted within the evident and identifiable period for Ahart's dwarf rush. Ahart's dwarf rush was not observed in the study area. This species does not occur in the study area.

Heckard's Pepper-Grass (*Lepidium latipes* var. *heckardii*)

Federal Status – None

State Status – None

Other – CNPS List 1B

Heckard's pepper-grass is an annual herb found in alkaline flats of valley and foothill grassland from 6.6 to 656 feet. Blooming period is from March to May. This species is known from Glenn, Solano, and Yolo counties (CNPS, 2011).

There are no CNDDDB records for this species within 5 miles of the study area. The nonnative grassland within the study area provides potential habitat for Heckard's pepper-grass. The May 27, 2011 biological survey was conducted within the evident and identifiable period for Heckard's pepper-grass. Heckard's pepper-grass was not observed within the study area. This species does not occur within the study area.

Special Status Wildlife

Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*; VELB)

Federal Status – Threatened

State Status – None

VELB is completely dependent on its host plant, the elderberry (*Sambucus* sp.) shrub during its entire life cycle throughout California's Central Valley (USFWS, 2008). VELB larvae live within the soft pith of the elderberry where they feed for one to 2 years. Adults emerge from pupation from the wood of elderberry shrubs during the spring as the plant begins to flower. The adults feed on the elderberry foliage up until they mate. Females lay their eggs in the crevices of elderberry bark. Upon hatching, the larvae tunnel into shrub stems and feed there. VELB typically utilize stems that are greater than one inch dgl (USFWS, 2008).

There are 11 CNDDDB records for this species within 5 miles of the study area. The nearest CNDDDB record (occurrence Number: 9) is from 1984 and abuts the northwestern boundary of the study area. The record states that adult VELB were observed on elderberry shrubs in riparian vegetation along the American River. Two elderberry shrubs with stems less than one-inch dgl were observed growing in containers surrounding pipe valves within the western portion of the nonnative grassland (**Figure 6a: Photograph 1**). The USFWS does not consider elderberry shrubs with stems less than one-inch dgl as VELB habitat. Elderberry shrubs comprised of stems with at least one inch dgl were observed in the elderberry savanna within the southeastern portion of the study area (**Figure 6a; Photograph 3**) and in a few isolated locations in the nonnative grassland within the southern portion of the study area (**Figure 6b; Photograph 8**). The host plant for this species occurs within the study area.

Burrowing Owl (*Athene cunicularia*)

Federal Status – None

State Status – Species of Concern

Burrowing owls occur in suitable habitat throughout California, except in northwestern coastal forests and on high mountains. Suitable habitat consists of open grasslands, especially prairie, plains, savanna, and in open areas including vacant lots and spoils piles near human habitat. Nesting and roosting occurs in burrows dug by mammals (such as California ground squirrels [*Spermophilus beecheyi*]), but may also occur in pipes, culverts, and nest boxes. Occupied nests can be identified by the lining of feathers, pellets, debris, and grass. Burrowing owls search for prey on the ground or on low perches such as fence posts or dirt mounds. Burrowing owls are diurnal, crepuscular, and nocturnal, depending on the time of year. Burrowing owls nest from March to August (CDFG, 2005).

There are 12 CNDDDB records for this species within 5 miles of the study area. Five of the 12 CNDDDB records are from the last 5 years. Three of the 5 records documented in the last 5 years are presumed extant; the other two have been extirpated. The nearest record is approximately one mile southeast of the study area (CNDDDB occurrence: 488). The record states that the burrowing owl occurrence is presumed extant, though the occurrence was last observed in 1974 (CDFG, 2003).

The majority of the nonnative grassland is maintained on an annual basis through soil compaction and vegetation mowing which reduces the likelihood of the presence of burrowing animals. The study area provides potential habitat for burrowing owls where annual disturbance from routine maintenance is limited, such as along the margins of the maintained nonnative grassland in the vicinity of the cottonwood forest and the elderberry savanna. No ground squirrel burrows, burrowing owls, or their sign were observed during the May 27, 2011 biological survey of the study area. Burrowing owls have the potential to occur within the study area.

Swainson's Hawk (Buteo swainsoni)

Federal Status – None

State Status – Threatened

Swainson's hawks are nesting raptors that arrive to their breeding grounds in the Central Valley in early March. Swainson's hawk nests are generally found in scattered trees or along riparian systems adjacent to agricultural fields or pastures. Valley oak, Fremont cottonwood, walnut, and large willow trees, ranging in height from 41 to 82 feet, are the most commonly used nest trees in the Central Valley (County of Sacramento, 2007). A breeding pair constructs nests and lays eggs from late-April to late-May. The young typically hatch in mid-May, and nestlings generally fledge in mid-August (Cornell Lab of Ornithology, 2011). The young depend on the adults for approximately 4 weeks after fledging until they permanently leave the breeding territory. Swainson's hawks nest from February 15 through September 15. Suitable foraging habitat nearby nesting sites is critical for fledgling success (CDFG, 1994). Swainson's hawk are known to forage distances exceeding 18 miles from the nests (Estep, 1989).

The CDFG (1994) prepared the *State Fish and Game Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California* (Swainson's Hawk Staff Report). The report recommends new development projects which adversely modify nesting and/or foraging habitat should mitigate the project's impacts to the species. The CDFG considers whether a project will adversely affect suitable foraging habitat within a 10-mile radius of a Swainson's hawk nest that has been active within the last 5 years. Suitable habitat includes areas that are considered small mammal and insect foraging

habitat, such as California ground squirrels, California voles (*Microtus californicus*), valley pocket gophers (*Thomomys bottae*), crickets (*Gryllidae* sp.), and grasshoppers (*Conocephalinae* sp.). Suitable Swainson's hawk foraging habitat includes alfalfa, fallow fields, beet, tomato, and other low-growing row or field crops, dry-land and irrigated pasture, rice land (when not flooded), and cereal grain crops (including corn after harvest). Increased captures occurs in fields that are being harvested, disced, mowed, or irrigated.

There are 85 CNDDDB records for Swainson's hawk within 10 miles of the study area. There are 25 CNDDDB records for Swainson's hawk within 5 miles of the study area. The nearest record with an active nest within the last 5 years is from 2008 (CNDDDB occurrence: 1715) and is mapped approximately 2.5 miles southwest of the study area along the Sacramento River. The record states that a Swainson's hawk chick was observed in a nest along the west side of the Sacramento River.

The study area provides marginal nesting habitat within the cottonwood forest for Swainson's hawk, however, given that the cottonwood forest is comprised of a dense, even-age stand of trees and that the trees are less than 40 feet in height. The Swainson's hawk has a greater potential to nest within the riparian vegetation along the American River outside the northern boundary of the study area. The established riparian habitat along the American River to the north of study area provides optimal nesting habitat for this species within the cottonwood, California sycamore (*Platanus racemosa*), and willow (*Salix* sp.) trees exceeding heights of 50 feet. Several raptors nests were observed during the May 27, 2011 biological survey in the canopies of the cottonwood, California sycamore, and willow trees along the American River to the north of the study area. There was no visible bird activity in the vicinity of the nests at the time of the survey, so it is unclear what species of raptor utilize these nest sites. Swainson's hawk has a low potential to nest within the study area boundaries.

Available foraging habitat in the vicinity of the study area includes land designated as recreational open space to the north of the American River and on land to the south of Business Route 80. The managed nonnative grassland within the study area provides only marginal foraging habitat for Swainson's hawk, which prefers to forage in agricultural lands. No rodents or rodent burrows, which would provide evidence of sources of prey, were observed within the grassland during the May 27, 2011 biological survey, most likely due to annual soil compaction of the study area. Several black-tailed jack rabbits (*Lepus californicus*), less preferable sources of prey, were observed within the study area. A Swainson's hawk pair was observed foraging within the nonnative grassland within the study area and on land to the north of the study area, north of the American River during the May 27, 2011 biological survey. Because the landfill mound lacks preferable prey base due to the absence of small rodents and rodent burrows as a result of annual soil compaction within the managed nonnative grassland, Swainson's hawk has a low potential to forage within the study area.

White-Tailed Kite (*Elanus leucurus*)

Federal Status – None

State Status – Fully Protected

White-tailed kites are year-round residents in coastal and valley lowlands. White-tailed kites forage in open grasslands, meadows, agricultural fields, and emergent wetlands. Nesting occurs in dense stands

of oaks, willow, or other deciduous trees from February through October (CDFG, 2003). There are 5 CNDDDB records for white-tailed kite within 5 miles of the study area. The nearest CNDDDB record is from 2009 (occurrence number: 142) and is approximately 0.28 miles north of the study area. The record states that a nesting pair was observed bringing food to a nest in a deciduous tree (CDFG, 2003).

The cottonwood forest within the study area provides nesting habitat for this species. The nonnative grassland within the study area provides foraging habitat for this species. A white-tailed kite was observed foraging within the nonnative grassland during the May 27, 2011 biological survey of the study area. White-tailed kite have the potential to forage and nest within the study area.

Migratory Birds and Bird of Prey

Fish and Game Code 3503.5 protects all birds in the orders Falconiformes and Strigiformes (collectively known as birds of prey). The MBTA protects migratory birds and other birds of prey, such as the great egret (*Ardea alba*) and the American kestrel (*Falco sparverius*). Nesting season occurs from March 1 to September 15. A killdeer (*Charadrius vociferous*) nest and the nesting pair were observed within the nonnative grassland during the May 27, 2011 biological survey of the study area. Migratory birds and other birds of prey have the potential to nest in trees within the cottonwood forest and elderberry savanna, within the ornamental landscaping associated with the ruderal/developed areas, and on the ground within the nonnative grassland within the study area.

IMPACTS AND MITIGATION MEASURES

The significance of potential impacts to biological resources was evaluated based on legal protection, local, state, and federal agency policies, and documented resource scarcity and sensitivity. The project would result in a potentially significant impact if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status in local or regional plans, policies, or regulations, or by the CDFG or the USFWS;
- Have a substantial adverse effect on any riparian habitat or sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFG or the 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, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native residents or migratory wildlife corridors or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Habitat Types

Table 3 summarizes the acreages of habitat types impacted by the proposed project. Impacts to aquatic habitats are discussed further within the *Potential Waters of the U.S.* section below. The USFWS and the CDFG consider elderberry savanna as a sensitive habitat type. The proposed project was designed to avoid impacts to this habitat type. The proposed project was designed to avoid impacts to the cottonwood forest. No other habitat types are considered sensitive as the ruderal/ developed areas do not provide quality habitat for native plants and wildlife, which the CDFG considers sensitive. Therefore, no mitigation is recommended. A map showing the impacted habitat areas is provided in **Figure 10**.

TABLE 3
ACREAGES OF HABITAT TYPES IMPACTED BY THE PROPOSED PROJECT

Habitat Type	Acreage ¹
<i>Terrestrial</i>	
Managed Nonnative Grassland	97.06
Ruderal/Developed	6.19
<i>Aquatic</i>	
Concrete-Lined Detention Basin	0.72
Total	103.97

¹ GIS calculations may not reflect exact acreage of study area due to rounding.

AES, 2011

Potential Waters of the U.S.

The concrete-lined detention basin is not a potentially jurisdictional feature because it is a manmade feature used to hold water received from runoff from the surrounding managed, nonnative grassland and ruderal/developed areas following precipitation events, lacks vegetation and soils, and is an isolated feature that lacks connectivity to a waters of the U.S. regulated under the CWA. The ephemeral drainage ditch located along the southwestern edge of the project site may be considered a potential wetland or other waters of the U.S. and may be subject to USACE jurisdiction under the CWA. The proposed project was designed to avoid impacts to the ephemeral drainage ditch. Therefore, no mitigation is recommended. Should the project be re-designed to impact or alter this drainage, a Section 404 CWA permit application, including formal delineation of waters of the U.S., would be required to be submitted to the USACE.



Figure 10
Project Impacts

Special Status Plants

Dwarf Downingia (Downingia pusilla), Ahart's Dwarf Rush (Juncus leiospermus var. ahartii), and Heckard's Pepper-Grass (Lepidium latipes var. heckardii)

The proposed project would have no impacts on dwarf downingia, Ahart's dwarf rush, and Heckard's pepper-grass because these species do not occur within the project site.

Northern California Black Walnut (Juglans hindsii)

Northern California black walnut occurs within the cottonwood forest. The proposed project was designed to avoid impacts to the cottonwood forest. Therefore, this species would not be impacted and no mitigation is required.

Special Status Wildlife

Valley Elderberry Longhorn Beetle (Desmocerus californicus dimorphus; VELB)

There are several elderberry shrubs, the host plant for VELB, with stems at least one inch dgl located within 100 feet of the proposed project footprint. These shrubs are located along the southern border of the managed nonnative grassland (**Figure 7**). Removal of elderberry shrubs could result in harm to VELB which would be considered a violation of the FESA unless an incidental take authorization is obtained from the USFWS. Final design of the proposed project shall avoid removal of elderberry shrubs within stems at least one inch dgl. The following mitigation measures are recommended to avoid or reduce impacts to VELB to less than significant:

- A qualified biologist should conduct an elderberry stem survey of all elderberry shrubs within 100 feet of the proposed project footprint, in accordance with the Conservation Guidelines for the Valley Elderberry Longhorn Beetle (Conservation Guidelines; USFWS, 1999b). An Effects Analysis report should be submitted to the USFWS to document the avoidance and minimization measures identified in the Conservation Guidelines. Complete avoidance measures include:
 - The proposed project shall be designed to avoid the installation of equipment within 20 feet of any elderberry shrub with stems measuring at least one inch dgl.
 - Temporary construction fencing should be placed around the driplines of any elderberry shrubs with stems measuring at least one inch dgl prior to commencement of construction activities to ensure that no elderberry shrub is inadvertently removed. A biologist should be present during the installation of the construction fencing.
 - In all locations where the proposed project would occur within 100 feet of elderberry shrubs with stems measuring at least one inch dgl, high visibility construction fencing should be placed at the edge of the construction footprint to denote the limit of disturbance and beginning of the avoidance areas. The construction barriers and fencing should not be removed until construction activities within 100 feet of VELB habitat have been completed.
 - Signs should be erected every 50 feet along the edge of avoidance areas with the following information: "This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the FESA, as amended. Violators are subject to prosecution, fines, and imprisonment." The signs

should be clearly readable from a distance of 20 feet, and must be maintained for the duration of construction.

- A qualified biologist should conduct an environmental awareness training to instruct all construction personnel crews about the status of the VELB and the need to protect its elderberry host plant. The training should include identification of special status species, required practices before the start of construction, general measures that are being implemented to conserve these species as they relate to the proposed pipelines, penalties for noncompliance, and boundaries of the survey area and of the permitted disturbance zones. Supporting materials containing training information should be prepared and distributed. Upon completion of training, all construction personnel should sign a form stating that they have attended the training and understand all the conservation measures. Training should be conducted in languages other than English, as appropriate. Proof of this instruction should be kept on file with the contractor. The City should provide the USFWS with a copy of the training materials and copies of the signed forms by project staff indicating that training has been completed within 30 days of the completion of the first training session. The contractor should train and provide training materials to any new crew members that were not present at the environmental awareness training conducted by the biologist. Copies of signed forms should be submitted monthly as additional training occurs for new employees.
 - Staging areas should be located at least 100 feet from elderberry shrubs with stems at least one inch dgl. Temporary stockpiling of excavated or imported material should occur only in approved construction staging areas.
 - Standard precautions should be employed by the construction contractor to prevent the accidental release of fuel, oil, lubricant, or other hazardous materials.
 - A litter control program should be instituted. The contractor should provide closed garbage containers for the disposal of all food-related trash items (e.g., wrappers, cans, bottles, food scraps). All garbage should be removed daily.
 - Roadways and areas disturbed by project activities within 100 feet of elderberry shrubs should be watered at least twice a day to minimize dust emissions.
- The following mitigation measures should be implemented to minimize adverse effects to VELB habitat within 20 feet of construction activities:
- A biologist should monitor all construction activities occurring within 20 feet of the elderberry shrubs to ensure that none are harmed.
 - The contractor should ensure that dust control measures (e.g., watering) are implemented in the vicinity of the elderberry shrubs. To further minimize adverse effects associated with dust accumulation, the elderberry shrubs will be covered by a protective cloth (i.e., burlap or weed matting) during all ground-disturbing activities occurring within 20 feet of the elderberry shrubs. The cloth should be removed daily and immediately after ground-disturbing activities are completed.
 - Excluding ongoing maintenance activities within the project site, no insecticides, herbicides, fertilizers, or other chemicals that might harm VELB or the elderberry shrub

should be used in association with the proposed project within 20 feet of the elderberry shrubs.

- The following measures should be implemented following the completion of construction activities:
 - Any disturbed areas should be revegetated and restored to pre-project conditions immediately.
 - The City should provide a written report to the USFWS documenting the results of mitigation and describing how the construction areas are to be restored, protected, and maintained after construction is completed.

Swainson's Hawk (*Buteo swainsoni*) Nesting Habitat

Swainson's hawk has a low potential to nest within the cottonwood forest given the dense stand of trees and that the tree heights are less than 40 feet tall. The species has a greater potential to nest within the riparian vegetation along the American River outside the northern boundary of the project site.

Construction activities within 0.25 miles of an active nest could result in disturbance of potential Swainson's hawk nest sites through temporary increases in ambient noise levels and increased human activity. The nearest active nest listed within the last five years on the CNDDDB database was located approximately 2.5 miles from the project site; however, it is possible that active nests are located in greater proximity to the site that have either not been reported or updated on the CNDDDB database managed by the CDFG. Potential disruption of nesting Swainson's hawk during construction of the proposed project could result in the abandonment of active nests. This is considered a potentially significant impact. The recommended mitigation measures identified below would ensure that impacts to nesting Swainson's hawks are reduced to less than significant levels through identification and avoidance of active nests. These measures are based on the CDFG's (1994) Swainson's Hawk Staff Report and have been modified as they relate to the proposed project. The following mitigation would be required to avoid or reduce impacts to a less than significant level:

- Prior to any construction activities that occur within the nesting season (March 1 and September 15), a qualified biologist should conduct surveys for active Swainson's hawk nests in the project site and within 0.25 miles of the project site where legally permitted. The biologist should use binoculars to visually determine whether Swainson's hawk nests occur beyond the 0.25-mile survey area if access is denied on adjacent properties. If no active Swainson's hawk nests are identified within 0.25 miles of construction activities, a letter report summarizing the survey results shall be submitted to the City within 30 days following the survey, and no further mitigation for nesting habitat is recommended.
- If active Swainson's hawk nests are found within 0.25 miles of construction activities, the biologist should contact the City within one day following the preconstruction survey to report the findings. No intensive disturbances (e.g., heavy equipment operation associated with construction, use of cranes or draglines, new rock crushing activities) or other project-related activities that could cause nest abandonment or forced fledging, shall be initiated within .25 miles (buffer zone as defined in the CDFG Staff Report) of an active nest between February 15 and September 15 or until the nestlings have fledged. Should a reduced buffer be necessary, then the CDFG should

be consulted to develop take avoidance measures, and implement a monitoring and reporting program prior to any construction activities occurring within 0.25 miles of the nest.

Swainson's Hawk (Buteo swainsoni) Foraging Habitat

The managed nonnative grassland within the project site is considered low quality Swainson's Hawk foraging habitat given the lack of preferable prey base of small rodents and rodent burrows as a result of the City's ongoing landfill management activities, including mowing and annual soil compaction. Approximately 97.06 acres of low quality foraging habitat within the managed nonnative grassland would be temporarily removed as a result of the proposed project. Once the lease for the photovoltaic solar park expires in 20 years, the project site would be restored to its pre-existing condition and landfill areas would continue to be maintained in accordance with applicable permit requirements. The temporary removal of low quality foraging habitat within the project site would not result in harm to the species as higher quality foraging habitat is present in the immediate vicinity of the study area including land designated as recreational open space to the north of the American River and land to the south of Business Route 80.

The CDFG considers 5 or more vacant acres within 5 miles of a nest that has been active within the last 5 years to be significant foraging habitat for Swainson's hawk regardless of quality, the conversion of which to urban uses is considered a significant impact. The proposed project occurs within 2.5 miles of Swainson's hawk nests that have been documented active on the CNDDDB database within the last 5 years. The mitigation measure identified below would ensure that impacts to Swainson's hawk foraging habitat would be reduced to less than significant levels through the preservation and management in perpetuity of suitable foraging habitat, contiguous with other areas of suitable foraging habitat, for Swainson's hawk. Because the foraging habitat within the project site is of low quality due to the post closure maintenance activities required for the former 28th Street Landfill, the preservation of foraging habitat at the ratio identified below would be sufficient to ensure that the temporary loss of habitat on the project site would not result in substantial reduction in the numbers of species, significantly limit its range, or cause populations to be reduced below self sustaining levels. The following mitigation measure is required to reduce the loss of foraging habitat to less than significant:

- The City should purchase credits to off-set the conversion of nonnative grassland at a 0.25-to-one ratio (24.26 acres) at a CDFG-approved mitigation bank.

Burrowing Owl (Athene cunicularia)

Burrowing owls or their nests were not observed during May 27, 2011 survey of the project site. Although unlikely, burrowing owls have the potential to nest or winter within nonnative grassland along the margins of the project site. Potential disruption of burrowing owls from construction activities could result in the abandonment or loss of active nests through burrow destruction. This is considered a potentially significant impact. The following mitigation is recommended to avoid or reduce impacts to a less than significant level:

- A qualified biologist should conduct a preconstruction survey within 30 days prior to construction activities occurring within potential nesting or wintering habitat for burrowing owl, including the nonnative grassland areas that occur within the project site. In accordance with the CDFG

burrowing owl survey protocol, the survey area should extend 500-feet from construction areas (CDFG, 1995) where legally permitted. The biologist should use binoculars to visually determine whether burrowing owls occur beyond the construction areas if access is denied on adjacent properties. If no burrowing owls or their sign are detected in the vicinity of the project site during the preconstruction survey, a letter report documenting survey methods and findings should be submitted to the City and the CDFG within 30 days following the survey, and no further mitigation is required.

- If unoccupied burrows are detected during the non-breeding season (September through January 31), the City should be contacted within one day following the preconstruction survey to report the findings. The City should collapse the unoccupied burrows, or otherwise obstruct their entrances to prevent owls from entering and nesting in the burrows.
- If occupied burrowing owl burrows are detected, impacts on burrows should be avoided by providing a buffer of 160 feet during the non-breeding season (September 1 through January 31) or 250 feet during the breeding season (February 1 through August 31). The size of the buffer area may be adjusted if a qualified biologist or the CDFG determine the burrowing owl would not likely be affected by the proposed project. Project activities should not commence within the buffer area until a qualified biologist confirms that the burrow is no longer occupied. If the burrow is occupied by a nesting pair, a minimum of 7.5 acres of foraging habitat contiguous to the burrow should be maintained until the breeding season is finished.
- If impacts to occupied burrows are unavoidable, onsite passive relocation techniques approved by the CDFG should be used to encourage burrowing owls to move to alternative burrows outside of the project site. No occupied burrows should be disturbed during the nesting season unless a qualified biologist verifies through non-invasive methods that juveniles from the occupied burrows are foraging independently and are capable of independent survival. Mitigation for foraging habitat for relocated pairs shall follow the guidelines provided in *the California Burrowing Owl Survey Protocol and Mitigation Guidelines* (California Burrowing Owl Consortium, 1993). The mitigation for foraging habitat for relocated pairs range from 7.5 to 19.5 acres per pair.

Migratory Birds and Other Birds of Prey

The proposed project has the potential to impact nest sites for federally and state protected migratory birds and other birds of prey within the project site. Nesting birds and other raptors, including white-tailed kite, may utilize trees in the vicinity of the project site as nesting habitat. The current design of the proposed project would not result in the removal of any trees within the study area. However, potential disruption of nesting migratory birds and other birds of prey during construction could result in nest abandonment or mortality. The mitigation measures below would ensure that impacts to nesting birds are reduced to less than significant levels through identification and avoidance of active nests. The following mitigation measures are required to avoid impacts to nest sites for migratory birds and other birds of prey:

- A preconstruction survey should be conducted by a qualified biologist for nesting birds of prey and migratory birds within 2 weeks prior to commencement of construction activities that occur between March 1 and September 15. The qualified biologist should document and submit the results of the preconstruction survey in a letter to the CDFG and the City within 30 days following the survey. The letter should include: a description of the methodology including dates of field visits, the names of survey personnel, and a list of references cited and persons contacted, and a

map showing the location(s) of any bird nests observed on the project site. If no active nests are identified during the preconstruction survey, then no further mitigation is recommended so long as construction activities commence within 14 days of the preconstruction survey. An additional preconstruction survey would be recommended within 14 days of the anticipated construction commencement should construction be delayed beyond the 14 days of the previous preconstruction survey.

- If any active nests are identified during the preconstruction survey within the project site, a buffer zone should be established around the nests, in coordination with CDFG. A qualified biologist should monitor nests weekly during construction to evaluate potential nesting disturbance by construction activities. The biologist should delimit the buffer zone with construction tape or pin flags within 50 feet of the active migratory nest or within 100 feet of an active raptor nest (excluding an active Swainson's hawk nest or an occupied burrowing owl burrow) and maintain the buffer zone until the end of the breeding season or until the young have successfully fledged. If establishing the 50- or 100-foot buffer zone is impractical, then a qualified biologist would monitor any construction activity occurring within the buffer zone on a daily basis. The biologist should have the authority to halt construction activities within the buffer zone should the disturbance have the potential to result in nest abandonment or forced fledging.

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ATTACHMENTS

ATTACHMENT 1

POST-CLOSURE REPORT

ATTACHMENT 2

USFWS, CNPS, AND CNDDDB LISTS

ATTACHMENT 3

PLANTS AND WILDLIFE SPECIES OBSERVED

ATTACHMENT 4

***REGIONALLY OCCURRING SPECIAL STATUS SPECIES AND THEIR
DESIGNATED CRITICAL HABITAT***