Appendix B

Biological and Wetland Resources Evaluation Report for APN 215-0280-055

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October 29, 2020 Project # SKD-01

Mr. Sukhpreet Dosanjh
7843 Black Sand Way
Antelope, CA 95843

Subject: Biological and Wetland Resources Evaluation Report for APN 215-0280-055 in the City of Sacramento, CA

Dear Mr. Dosanjh:

HELIX Environmental Planning, Inc. (HELIX) has prepared this biological and wetland resources evaluation report for the property located in the southeast corner of Santa Ana Avenue and Dry Creek Road, also identifiable as APN 215-0280-055, located in the City of Sacramento, California. The currently undeveloped site is the location of a proposed truck terminal yard with driveways and parking, surrounded by landscaping and a security fence. The purpose of our biological and wetland resources study was to evaluate the potential for regionally-occurring special-status plant and animal species, wetlands or other waters of the U.S. or waters of the State, and/or other sensitive biological habitats to occur in the project site and/or be impacted by the proposed development on the site. This letter report describes the methods and results of our biological and wetland resources evaluation.

Project Location and Description

The subject property is located in the City of Sacramento, in the 1200 block of Santa Ana Avenue between Dry Creek Road and Raley Boulevard (Figure 1). The property comprises Sacramento County Assessor's Parcel Number 215-0280-055, which is 3.60 acres. The study area for the purpose of this report is 3.07 acres and excludes portions of Dry Creek Road and Santa Ana Avenue and the associated rights-of-way as those areas are already developed. The approximate center of the property is at latitude 38.657989 and longitude -121.437523, NAD 83. The site is proposed for development of a truck terminal yard with driveways and parking, surrounded by landscaping and a security fence.

The site plan has been designed to avoid development within wetland features, which are present on the parcel. Wetland features and surrounding areas will be left in a natural condition to the extent feasible. Although the site has been designed to avoid wetland features to the extent feasible while retaining a viable project, paved areas for parking, drive aisles, and a driveway for egress onto Santa Ana Avenue are close to the boundary of some of the wetland features. The project proponent has committed to implementing mitigation measures during construction and operation of the project to avoid impacts to wetland features that will be retained and protected on the site. Recommended mitigation measures are included in the *Recommended Mitigation Measures* section of this report under

Aquatic Resources. Figure 2 is the approximate site boundary depicted on aerial imagery and Figure 3 is the proposed site plan. Figures are included in Attachment A.

Methods

Studies conducted in support of this report included a special-status species evaluation, an aquatic resources evaluation, and a biological and wetland reconnaissance survey, which included a tree inventory and the mapping of aquatic resources on the site.

Special-Status Species Evaluation

Regulations pertaining to the protection of biological resources at the project site are summarized in Attachment B. For the purposes of this report, special-status species are those that fall into one or more of the following categories, including those:

- listed as endangered or threatened under the Federal Endangered Species Act (FESA; including candidates and species proposed for listing);
- listed as endangered or threatened under the California Endangered Species Act (CESA; including candidates and species proposed for listing);
- designated as rare, protected, or fully protected pursuant to California Fish and Game Code;
- designated a Species of Special Concern (SSC) by the California Department of Fish and Wildlife (CDFW);
- considered by CDFW to be a Watch List species with potential to become an SSC;
- defined as rare or endangered under Section 15380 of the California Environmental Quality Act (CEQA); or
- Having a California Rare Plant Rank (CRPR) of 1A, 1B, 2A, 2B, or 3.

In order to evaluate special-status species and/or their habitats with the potential to occur in the project site and/or be impacted by the proposed project, HELIX obtained lists of special-status species known to occur and/or having the potential to occur in the proposed project site and vicinity from the U.S. Fish and Wildlife Service (USFWS; USFWS 2020), the California Native Plant Society (CNPS; CNPS 2020), and the California Natural Diversity Database (CNDDB; CDFW 2020). Attachment C includes these lists of special-status plant and animal species occurring in the project region. The potential for these regionally occurring special-status species to occur in the project site is analyzed in Attachment D.

Aquatic Resources Evaluation

The U.S. Fish and Wildlife Service's National Wetlands Inventory (NWI) online database[1] was reviewed to determine if there are any wetlands or other waters of the U.S. mapped by the USFWS on the property.

[1] https://www.fws.gov/wetlands/Data/Mapper.html

The NWI provides reconnaissance level information on wetlands and deepwater habitats from analysis of high-altitude aerial imagery.

Historic aerial imagery from National Environmental Title Research (NETR)[2] was reviewed for information on past land uses and presence of aquatic features visible on aerial imagery. NETR provides aerial imagery covering the property at irregular intervals from 1947 to 2016, and USGS topographic maps at irregular intervals from 1902 to 2018.

Reconnaissance Survey

A biological and wetland reconnaissance survey was conducted on June 3, 2020 by HELIX biologists Patrick Martin and Stephanie McLaughlin, M.S., ISA Certified Arborist (WE-12922A) between 0800 and 1030 hours. The project site was assessed to identify the habitat type(s) present on-site and the potential to support special-status plant and wildlife species, and is further analyzed in Attachment D. The survey consisted of a pedestrian survey of the project site and the surrounding area. Meandering transects of the site were performed to obtain visual coverage of the site. A tree inventory was conducted and included all trees rooted in or overhanging the project site or that may be affected by off-site project-related construction and having a diameter at standard height (DSH) of 12-inches or larger for native tree species, including native oaks (*Quercus* spp.), buckeyes (*Aesculus californicus*), or sycamores (*Platanus racemosa*), or 24-inches or larger for non-native tree species The three-parameter method was used to determine the presence/absence of wetlands, which involves identifying indicators of hydrophytic vegetation, hydric soils, and wetland hydrology according to the *Corps of Engineers Wetlands Delineation Manual* (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0; USACE 2008).

Weather during the survey was clear and hot, with temperatures ranging from 85 to 90 degrees Fahrenheit. A complete list of plant and animal species observed on the project site was prepared during the biological reconnaissance and is included as Attachment E.

Results

Environmental Setting

The site is located within an industrial and rural residential area in the northern portion of the City of Sacramento and is surrounded by industrial, commercial and residential development. The site is generally bordered by residential and industrial parcels on the east and by roadways and residential developments to the north, south, and west.

Site Conditions

The entire project site is in a relatively disturbed condition. Historic aerial imagery indicates that the property has been subject to a variety of reoccurring ground disturbance activities since 1947, including disking and staging of materials. The contours of the property reflect a history of fill, grading, and other modifications resulting in tire ruts, graded areas, and a gravel parking area currently making up the microtopography of the property.

[2] https://www.historicaerials.com

Habitat Types/Vegetation Communities

Habitat types/vegetation communities on the site include ruderal/disturbed, pond, and wetland swale. Aquatic habitats are discussed below in the aquatic resources evaluation section. Habitats and land covers are depicted on Figure 4. Representative site photographs are included as Attachment F.

Ruderal/Disturbed

Ruderal/disturbed habitat occurs in areas that are heavily disturbed by past or ongoing human activities but retain a soil substrate. Ruderal/disturbed areas may be sparsely to densely vegetated, but do not support a recognizable community or species assemblage. Vegetative cover is usually herbaceous and dominated by a wide variety of weedy non-native species or a few ruderal native species.

Ruderal/disturbed habitat, which totals 2.56 acres, comprises the majority of the site. This habitat in the project site is either unvegetated or heavily dominated by a dense cover of non-native annual grasses, with small patches of native and non-native grasses and forbs. Nearly all plant species observed during the site reconnaissance are non-natives associated with disturbance (Attachment E).

Topography

The project site is largely flat, with small depressions containing aquatic resources. Elevation on the project site ranges from 39 to 42 feet above mean sea level.

Soils

The property includes two soil mapping units (NRCS 2020): Hicksville loam, 0 to 2 percent slopes, and San Joaquin fine sandy loam, 0 to 3 percent slopes.

Hicksville loam soils occur at toeslopes and summits on terraces and hills and consist of alluvium. A typical profile is loam from 0 to 13 inches, clay loam from 13 to 43 inches, and sandy clay loam from 43 to 64 inches; the depth to water table is 0 inches. Hicksville loam is on the National Hydric Soils List for Sacramento County (NRCS 2015).

San Joaquin fine sandy loam soils occur at toeslopes on terraces and consist of alluvium derived from granite. A typical soil profile for San Joaquin fine sandy loam soil is fine sandy loam from 0 to 13 inches, sandy clay loam from 13 to 30 inches, clay loam from 30 to 35 inches, inundated from 35 to 60 inches, and stratified sandy loam or loam from 60 to 67 inches; the depth to water table is more than 80 inches.

Special-Status Species Evaluation

A total of six regionally occurring special-status plant species and 20 regionally-occurring special-status wildlife species were identified during the database queries and desktop review and are evaluated in Attachment D.

Special-Status Plant Species

A total of six regionally occurring special-status plant species were identified during the database queries and desktop review. Five of these species occur in wetland habitats such as vernal pools and seasonal wetlands: dwarf downingia (*Downingia pusilla*), legenere (*Legenere limosa*), Boggs Lake hedge-

hyssop (*Gratiola heterosepala*), Sacramento Orcutt grass (*Orcuttia viscida),* and Sanford's arrowhead (*Sagittaria sanfordii*). One of these species occurs in mesic soils: Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii)*.

There is currently no suitable habitat for special-status plant species on the site and there have been no reported occurrences of special-status plant species on or adjacent to the site in the CNDDB. The site is vegetated with ruderal vegetation and has been disturbed. The wetland swales on the site are likely to disturbed and ephemeral to provide habitat for these species, which require periods of inundation with saturation in the wetlands lasting until March or April (NatureServe 2016); aerial photographs show that the aquatic features on site are generally dry by March. Additionally, the pond is likely to disturbed and polluted with roadside runoff and illegal dumping of waste to provide suitable habitat.

Special-Status Wildlife Species

A total of 20 regionally-occurring special-status wildlife species were identified during the database searches and desktop review. The majority of the special-status wildlife species are associated with aquatic habitats of the adjacent Sacramento Valley such as rivers, sloughs, and freshwater wetlands, including vernal pools. The remaining species are associated with open areas with native or naturalized vegetation and scattered trees.

There are no reported occurrences of special-status animal species on or adjacent to the site. However, the site provides suitable habitat for Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*), burrowing owl and other nesting migratory birds. These species are discussed briefly below. In addition, although they are not expected to occur on the site, vernal pool fairy shrimp and vernal pool tadpole shrimp are discussed due to the presence of wetland swales and a pond on the site. Species determined to have no potential to occur on the project site or be impacted by the proposed project (Attachment D) are not discussed further in this report.

Vernal Pool Fairy Shrimp

The range of the vernal pool fairy shrimp within California includes the Central Valley and southern California. (USFWS 2005). Populations are known from Stillwater Plain in Shasta County through most of the length of the Central Valley to Pixley in Tulare County (additional disjunct populations exist at various locations throughout the state). Vernal pool fairy shrimp occur mostly in vernal pools, however it is also found in a variety of both natural and artificial wetland habitats, such as alkali pools, ephemeral drainages, stock ponds, roadside ditches, vernal swales, and rock outcrop pools (Helm 1997). Occupied wetlands are typically small (ranging from 0.1 to 0.05 acres in size), and pond for a relatively short duration (3-4 weeks; Eriksen and Belk 1999). Soil types associated with vernal pool fairy shrimp vary greatly with geography and influence the ecology of the species. This fairy shrimp occurs in pools with 48 to 481 parts per million salinity, and pH from 6.3 to 8.5 (Eriksen and Belk 1999).

Vernal pool fairy shrimp were not observed during biological surveys, which were conducted after potentially suitable habitat had already dried up. No focused surveys have been conducted at the site for this species. The nearest extant occurrence in CNDDB is 1.2 miles northeast (CDFW 2020).

The wetland swales and pond are not considered suitable habitat for vernal pool fairy shrimp and this species is not expected to occur on the site. The pond on site contains waste from illegal dumping and receives water from the roadside of Santa Ana Avenue which could degrade water quality. The wetland swales on site are vegetated with a dense cover of non-native facultative grasses (annual beardgrass,

Italian ryegrass) indicating a hydrologic regime characterized by saturation rather than inundation. No impacts to this species are anticipated and no mitigation is recommended.

Vernal Pool Tadpole Shrimp

The vernal pool tadpole shrimp is currently distributed across the Central Valley of California and in the San Francisco Bay Area. The life history of the vernal pool tadpole shrimp is linked to the seasonal cycle of its vernal pool habitat. Females deposit their eggs, which are sticky and adhere well to objects, on plant matter, sediment particles, and other objects on the vernal pool bottom (Simovich et al. 1992). The shrimp survive the dry summer months as diapaused eggs (often called cysts) in pool sediments. Vernal pool tadpole shrimp populations are reestablished after winter rains fill the pools from cysts that lie dormant in the dry pool sediments (Ahl 1991). Vernal pool tadpole shrimp inhabit seasonal, vernal pools or swales that form in slight depressions after being inundated following fall and winter rains. The pools contain clear to highly turbid water and have an impervious hardpan, claypan, or basalt layer beneath the soil surface that retains the water for a few months at a time (USFWS 2005).

Vernal pool tadpole shrimp were not observed during biological surveys, which were conducted after potentially suitable habitat had already dried up. No focused surveys have been conducted at the site for this species. The nearest occurrence in CNDDB is .9 miles northeast and was last observed in 1998 (CDFW 2020).

The wetland swales and pond are not considered suitable habitat for vernal pool fairy shrimp and this species is not expected to occur on the site. The pond on site contains waste from illegal dumping and receives water from the roadside of Santa Ana Avenue which could degrade water quality. The wetland swales on site are vegetated with a dense cover of non-native facultative grasses (annual beardgrass, Italian ryegrass) indicating a hydrologic regime characterized by saturation rather than inundation. No impacts to this species are anticipated and no mitigation is recommended.

Burrowing Owl

Burrowing owls are year-round residents of most parts of California, though local seasonal movements are common and populations in northeastern California and high elevations may migrate to lower elevations during the winter. Burrowing owls inhabit underground burrows, especially those of California ground squirrels (*Otospermophilus beecheyi*), and artificial holes such as pipes, culverts, and crevices in debris piles. Suitable habitat is open and relatively flat, with short vegetation, low perches or mounds, and abundant rodent and insect prey. Common examples of suitable habitat include agricultural fields, pastures, grasslands, deserts, and disturbed places. Breeding season for burrowing owl is April through August (CDFW 2012).

No burrowing owls or sign were observed during the biological reconnaissance, which included a thorough search for this species. The nearest extant occurrence of nesting is 2 miles west along Steelhead Creek (CDFW 2020).

Ruderal/disturbed areas in the project site provide marginally suitable habitat for burrowing owl. Previous disking and staging of materials has removed any small mammal burrows; however, there are several small debris piles that provide elements of suitable habitat. The site is too small in size to support significant burrowing owl foraging and is surrounded by disturbed industrial and residential parcels. The high levels of human presence and disturbance at the site likely discourage occupation of

the site by burrowing owls, as does the presence of dogs and other animals. However, there is a potential for this species to be present on the site.

If burrowing owls are residing in the project site or on adjacent properties, the project would have potential for adverse effects through injury or mortality, displacement, and loss of habitat. Injury or mortality to individual adults and young, or mortality of eggs and chicks due to forced nest abandonment by adults, would be a violation of the Fish and Game Code and a significant impact. Loss of occupied habitat including nesting burrows, satellite burrows, foraging habitat, dispersal habitat, wintering habitat, and linkages is considered a potentially significant impact to the local and regional populations of burrowing owl (CDFW 2012).

The recommended mitigation measures for nesting burrowing owl in the following section would reduce potential impacts to this species to less than significant.

Swainson's Hawk

Swainson's hawk is a breeding season migrant in California that winters in South America; migrants typically arrive in mid-April and begin scouting nest locations. Breeding is finished by August and most birds have left the state by late-October. Populations are largest in the southern Sacramento Valley and high deserts. A year-round, resident population is present in Solano County.

Swainson's hawks typically nest in large trees in riparian woodlands, tall trees in upland stands and solitary trees in agricultural areas. Isolation from human foot traffic is important to nest site selection, though hawks are less sensitive to vehicle traffic. Nests are typically concealed in dense canopy. Individuals exhibit high nest site fidelity. Swainson's hawks forage opportunistically over a large area, soaring up to 10 miles from the nest to hunt small mammals and insects in agricultural fields and grasslands. Suitable foraging habitat is open, with low vegetation (less than 12 inches) and abundant prey. Foraging activity is highest in agricultural fields during activities that drive prey into the open such as harvesting, disking, flooding, and burning.

The site is within the range of Swainson's hawk; however, the site is heavily disturbed and surrounded by industrial, commercial and residential development and does not provide suitable nesting habitat for Swainson's hawk. Swainson's hawk could occasionally forage in the site, but the site is too small to provide any significant foraging habitat and any Swainson's hawk using the site would be expected to use it only for temporary perching or foraging. However, suitable nesting habitat is present in tall trees adjacent to the site and higher quality foraging habitat is present in surrounding areas. Therefore, Swainson's hawk could potentially nest in trees adjacent to the site. The nearest extant reported occurrence of Swainson's hawk nesting in CNDDB is 1.5 miles northwest along Dry Creek (CDFW 2020).

Swainson's hawk is a highly mobile bird species and individual birds foraging or otherwise occurring in the site could readily avoid construction areas or contact with construction equipment or personnel. Therefore, no impacts to individual foraging Swainson's hawk is anticipated. The loss of 2.56 acres of potential foraging habitat within the ruderal/disturbed habitat onsite would not be expected to significantly impact Swainson's hawks nesting in the region. Higher quality foraging habitat is abundant to the west and north of the site. If Swainson's hawk were to nest in or adjacent to the site prior to construction activities, noise, vibration, human presence, and other construction-related disturbances could disturb nests and potentially result in nest failure or lead to the abandonment of eggs or young.

No mitigation is necessary for potential impacts to Swainson's hawk foraging habitat. Ruderal/disturbed land is not considered suitable foraging habitat for Swainson's hawk and CDFW does not recommend requiring mitigation pursuant to CEQA for infill (within an already urbanized area) projects in areas which have less than 5 acres of foraging habitat and are surrounded by existing urban development, unless the project area is within 1/4 mile of an active nest tree (CDFW 1994).

The recommended mitigation measures for nesting Swainson's hawks in the following section would reduce potential impacts to this species to less than significant.

White-tailed Kite

White-tailed kite is a year-round resident in coastal and valley lowlands, where it inhabits herbaceous and open stages of most habitat types. Individuals forage in grasslands, farmlands, and wetlands, preying mostly on small diurnal mammals. Nests are built near the top of dense tree stands, usually near open foraging areas (Zeiner et al. 1988).

No white-tailed kites were observed during any of the biological surveys conducted for the proposed project. The nearest reported extant occurrences of white-tailed kite in the CNDDB is located approximately 1.2 miles southwest of the project site near the Rio Linda Airport (CDFW 2020). Nesting habitat is present adjacent to the site in large trees and foraging habitat is present in the ruderal vegetation. However, habitat for white-tailed kite is marginal due to the disturbed nature of this site.

No adverse effects to white-tailed kite foraging are anticipated as a result of the loss of ruderal/disturbed habitat that would occur due to development of the proposed project. Non-breeding adults could readily avoid contact with construction equipment or personnel by moving out of the construction area. Displacement of non-breeding adults would not be a significant impact. The project has potential for adverse effects to white-tailed kite through nest disturbance leading to destruction of eggs or nestlings if this species were to nest in or adjacent to the project site. Eggs and young still dependent on the nest would be susceptible to injury or mortality through physical contact or through nest abandonment caused by displacement of adults. Destruction of eggs or young would be a violation of the Fish and Game Code and a significant impact

The recommended mitigation measures for nesting migratory birds and raptors in the following section would reduce potential impacts to this species to less than significant.

Migratory Birds and Raptors

As noted in Attachment B, migratory and non-game birds are protected during the nesting season by California Fish and Game Code. The project site and immediate vicinity provides nesting and foraging habitat for a variety of native birds common to urbanized areas, such as mourning dove (*Zenaida macroura*), black phoebe (*Sayornis nigricans*), and killdeer (*Charadrius vociferus*). Nests were not observed during surveys; however, a variety of migratory birds have the potential to nest in and adjacent to the site, in trees, shrubs and on the ground in vegetation.

Project activities such as clearing and grubbing during the avian breeding season (February 1 through August 31) could result in injury or mortality of eggs and chicks directly through destruction or indirectly through forced nest abandonment due to noise and other disturbance. Needless destruction of nests, eggs, and chicks would be a violation of the Fish and Game Code and a significant impact.

The recommended mitigation measures for nesting migratory birds and raptors in the following section would reduce potential impacts to this species to less than significant.

Aquatic Resources Evaluation

The project site is in the Lower Steelhead Creek hydrologic unit (HUC12: 180201110303); Steelhead Creek is a tributary to the Sacramento River. NWI mapping based on 1984 aerial imagery shows no aquatic features on the property. Historic aerial imagery shows the presence of swales running laterally across the site, as well as a pond in the northeastern corner of the site.

HELIX conducted a routine assessment of waters of the U.S. and State on June 3, 2020, generally in accordance with the U.S. Army Corps of Engineers' (USACE) Corps of Engineers Wetlands Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). A formal delineation of wetlands was not completed. HELIX identified three potentially jurisdictional features totaling 0.51 acre of potentially jurisdictional waters of the U.S. and state: one seasonal pond (0.25 acre), and two wetland swales (0.26 acre). Potentially jurisdictional aquatic features are depicted on the Habitat and Resource Map, which is included in Attachment A as Figure 4.

The swales are dominated by non-native species, including annual beardgrass (*Polypogon monspeliensis*) and Italian ryegrass (*Festuca perennis*). The pond is dominated by toad rush (*Juncus bufonius*) and Gooding's black willow (*Salix gooddingii*) and appears to be used as a dumping ground for trash and other debris. All aquatic features appear to be seasonally inundated and do not support suitable habitat for special-status species that require wetland or vernal pool habitat. All aquatic features appear to be manipulated natural features disturbed by filling and fed by rainfall and run-off from Santa Ana Avenue.

The site plan has been designed to avoid direct impacts to potentially jurisdictional aquatic features. Implementation of the recommended mitigation measures to avoid indirect impacts to aquatic resources during construction and operations of the project would reduce the potential for project impacts to potentially jurisdictional aquatic resources to less than significant.

Protected Trees

Six trees are present on the site that include Gooding's black willow (*Salix gooddingii*) and almond (*Prunus dolcis*) (see Attachment A; Figure 4). The City of Sacramento protects trees under Chapter 12.56 of the Sacramento City Code. A permit is required to remove native oaks (*Quercus* spp.), buckeyes (*Aesculus californicus*), or sycamores (*Platanus racemosa*) having a diameter at standard height (i.e., 54 inches above grade; DSH) of 12 inches or more, or any tree having a DSH of 24 inches or more, on undeveloped private parcels inside the City limits. For a tree with a common root system that branches at the ground, DSH means the sum of the diameter of the largest trunk and one-half the cumulative diameter of the remaining trunks at 4.5 feet above natural grade (see Attachment B). No trees have a cumulative DSH greater than 24 inches, thus no trees are considered protected by Sacramento City Code. See Table 1 for additional data on the trees found on the project site.

Table 1
TREES LOCATED ON THE PROJECT SITE

Tree Number	Species	DSH (inches), including total cumulative	Height (feet)	Condition	City Code Status
1	*Salix gooddingii* Goodding's black willow	9, 7.9, 8.2, 6.4 **Total – 20.3**	21	Good	Not Protected
2	*Salix gooddingii* Goodding's black willow	8.2, 7.8, 7.1, 6.5, 8.2 **Total – 23**	13	Good	Not Protected
3	*Salix gooddingii* Goodding's black willow	9.5, 9 **Total – 4**	19	Good	Not Protected
4	*Salix gooddingii* Goodding's black willow	7.2	6	Dead	Not Protected
5	*Salix gooddingii* Goodding's black willow	12.5, 13.1 **Total – 19.4**	14	Fair	Not Protected
6	*Prunus dolcis* almond	9, 5 **Total – 11.5**	14	Good	Not Protected

Sensitive Natural Communities

Due to the general lack in abundance of native plant species, there are no terrestrial or aquatic sensitive natural communities on the property. Although wetlands may be protected as aquatic resources, natural communities are defined by one or more characteristic plant species, and the species communities in the wetlands on the property are not considered characteristic of a sensitive natural community.

Recommended Mitigation Measures

Special-Status Species

Burrowing Owl

Prior to the commencement of construction activities (which includes clearing, grubbing, or grading) a survey for burrowing owl shall be conducted by a qualified biologist. The survey shall occur within 30 days of the start of construction activities. Surveys shall be conducted in accordance with the following:

- A survey for-burrows and owls should be conducted by walking through suitable habitat over the entire project site and in areas within 150 meters (~500 feet) of the project impact zone.

- Pedestrian survey transects should be spaced to allow 100 percent visual coverage of the ground surface. The distance between transect center lines should be no more than 30 meters (~100 feet) and should be reduced to account for differences in terrain, vegetation density, and ground surface visibility. Surveyor(s) should maintain a minimum distance of 50 meters (~160 feet) from any owls or occupied burrows. It is important to minimize disturbance near occupied burrows during all seasons.

- If no occupied burrows or burrowing owls are found in the survey area, a letter report documenting survey methods and findings shall be prepared and no further mitigation is necessary.

- If occupied burrows or burrowing owls are found, then a complete burrowing owl survey is required. This consists of a minimum of four site visits conducted on four separate days, which must also be consistent with the Survey Method, Weather Conditions, and Time of Day sections of Appendix D of the California Fish and Wildlife "Staff Report on Burrowing Owl Mitigation" (March 2012). A survey report shall be prepared which is consistent with the Survey Report section of Appendix D of the California Fish and Wildlife "Staff Report on Burrowing Owl Mitigation" (March 2012).

- If occupied burrows or burrowing owls are found the applicant shall contact the County and consult with CDFW prior to construction and will be required to submit a Burrowing Owl Mitigation Plan (subject to the approval of the Environmental Coordinator and in consultation with California Fish and Wildlife). This plan must document all proposed measures, including avoidance, minimization, exclusion, relocation, or other measures, and include a plan to monitor mitigation success. The CDFW "Staff Report on Burrowing Owl Mitigation" (March 2012) should be used in the development of the mitigation plan.

Swainson's Hawk

Pre-construction surveys shall be conducted to determine if there are nesting Swainson's hawk within 0.5-mile of the project site. The purpose of the survey requirement is to ensure that construction activities do not affect nesting hawks, potentially resulting in nest abandonment or other harm to nesting success. Prior to initiation of construction activities during the Swainson's hawk breeding season (March 1 through September 15), the applicant shall determine the presence of active Swainson's hawk nests in and within 0.5-mile of the project site using the most recent published survey protocols (i.e., 3 surveys by a qualified biologist in each of the two periods preceding the construction start date; SHTAC 2000). If an active Swainson's hawk nest is discovered, the applicant shall initiate consultation with CDFW to determine what measures need to be implemented in order to ensure that nesting hawks remain undisturbed. The measures selected would depend on many variables, including the distance of activities from the nest, the types of activities, and whether the landform between the nest and activities provides any kind of natural screening. If no active nests are discovered, no further action is required.

White-Tailed Kite, Other Raptors, and Migratory Birds

The project site provides suitable nesting habitat for native songbirds and large trees adjacent to the site provide nesting habitat for raptors. Removal of vegetation containing active nests would potentially result in destruction of eggs and/or chicks; noise, dust, and other anthropogenic stressors in the vicinity of an active nest could lead to forced nest abandonment and mortality of eggs and/or chicks. Needless destruction of eggs or chicks would be a violation of the Fish and Game Code and a significant impact. Pre-construction surveys should be conducted prior to project implementation to determine if nesting birds are present on or adjacent to the site, so that measures could be implemented if needed to avoid harming nesting birds.

The following mitigation is recommended to reduce potential project impacts to nesting birds:

- If project (construction) ground-disturbing or vegetation clearing and grubbing activities commence during the avian breeding season (February 1 through August 31), a qualified biologist shall conduct a pre-construction nesting bird survey no more than 14 days prior to initiation of project activities and again immediately prior to construction. The survey area shall include suitable raptor nesting habitat within 500 feet of the project boundary (inaccessible areas outside of the project site can be surveyed from the site or from public roads using binoculars or spotting scopes). Pre-construction surveys are not required in areas where project activities have been continuous since prior to February 1, as determined by a qualified biologist. Areas that have been inactive for more than 14 days during the avian breeding season must be re-surveyed prior to resumption of project activities. If no active nests are identified, no further mitigation is required. If active nests are identified, the following measure is required:
    - A suitable buffer (e.g., 500 feet for raptors; 100 feet for passerines) shall be established by a qualified biologist around active nests and no construction activities within the buffer shall be allowed until a qualified biologist has determined that the nest is no longer active (i.e., the nestlings have fledged and are no longer reliant on the nest, or the nest has failed). Encroachment into the buffer may occur at the discretion of a qualified biologist. Any encroachment into the buffer shall be monitored by a qualified biologist to determine whether nesting birds are being impacted.

Aquatic Resources

The following mitigation measures are recommended to avoid indirect impacts to potentially jurisdictional aquatic resources on the site:

Recommended Measures During Construction

- Grading, clearing, and other ground disturbing activities within the project site shall be confined to the minimal area necessary to facilitate construction activities. To ensure that construction equipment and personnel do not affect sensitive habitat outside of designated work areas, orange barrier fencing shall be erected to clearly define the habitat to be avoided. This will delineate the Environmentally Sensitive Areas (ESA) on the project. The integrity and effectiveness of ESA fencing and erosion control measures shall be inspected daily. Corrective actions and repairs shall be carried out immediately for fence breaches and ineffective erosion control BMPs.

- Standard construction BMPs shall be implemented throughout construction in order to avoid and minimize adverse effects to the water quality within the project site. Appropriate erosion control measures shall be used (e.g., hay bales, filter fences, vegetative buffer strips or other accepted equivalents) to reduce siltation and contaminated runoff from entering preserved wetlands or leaving the project site. The integrity and effectiveness of the BMPs shall be inspected on a daily basis by the resident engineer or site foreman. Corrective actions and repairs shall be carried out immediately. Plastic mono-filament netting (erosion control matting) or similar material containing netting shall not be used at the project. Acceptable substitutes include coconut coir matting or tackified hydroseeding compounds.

- Construction by-products and pollutants such as petroleum products, chemicals, or other deleterious materials should not be allowed to enter into preserved aquatic resources. A plan for the emergency clean-up of any spills of fuel or other materials should be available when construction equipment is in use.

- During construction, equipment shall be re-fueled and serviced at designated construction staging areas. All construction material and fill shall be stored and contained in a designated area that is located away from preserved wetlands to prevent transport of materials into adjacent streams. The preferred distance is 100 feet from the preserved wetlands. In addition, a silt fence shall be installed to collect any discharge, and adequate materials should be available for spill clean-up and during storm events.

- Construction vehicles and equipment shall be monitored and maintained to prevent contamination of soil or water from external grease and oil or from leaking hydraulic fluid, fuel, oil, and grease. Leaking vehicles and equipment shall be removed from the site.

- Construction materials storage areas containing hazardous or potentially toxic materials such as herbicides and petroleum products shall have an impermeable membrane between the ground and the hazardous material and shall be bermed to prevent the discharge of pollutants to ground water and runoff water. The bermed area shall at a minimum have the capacity to store the volume of material placed in it.

- All disturbed soils shall undergo erosion control treatment prior to October 15 and/or immediately after construction is terminated. Appropriate erosion control measures shall be used (e.g., hay bales, filter fences, vegetative buffer strips or other accepted equivalents) to reduce siltation and contaminated runoff from project sites. Erosion control blankets shall be installed on any disturbed soils steeper than a 2:1 slope or steeper.

<u>Recommended Measures During Operations</u>

- In order to prevent trucks and other vehicles from inadvertently entering the wetlands during operations, bollards and/or post and cable fence will be installed at the interface of the pavement and wetland features.

Protected Trees

The project site contains no native oaks, buckeyes, or sycamores and no trees with a cumulative DSH greater than 24 inches; thus, none of the trees on the site are considered protected by Sacramento City Code. No mitigation measures are necessary.

Summary/Conclusions:

Site Conditions

The property at APN 215-0280-055 is in a disturbed condition and supports no sensitive natural communities or sensitive terrestrial biological resources. Vegetation on the property consists of ruderal species, almost all of which are non-native.

Special-Status Species

The property and adjacent sites provide marginal habitat for three regionally occurring special-status animal species: burrowing owl, white-tailed kite and Swainson's hawk. A single adult Swainson's hawk was observed foraging in the vicinity of the project site during the biological reconnaissance survey conducted on June 3, 2020. Implementation of the recommended mitigation measures for nesting bird surveys would reduce the potential for project impacts to these three bird species as well as common migratory birds and raptors to less than significant.

The property does not provide suitable habitat for any other regionally-occurring special-status plant or animal species, and no additional species have the potential to occur on the property or be impacted by the proposed project.

Migratory Birds

There is potential for common native birds to nest on the property or on adjacent properties where project activities could result in stress leading to nest failure. Implementation of the recommended mitigation measure for nesting bird surveys would reduce the potential for project impacts to nesting birds to less than significant.

Aquatic Resources

The site contains three aquatic resources: one pond (0.25 acre), and two swales (0.26 acre). The proposed project has been designed to avoid direct impacts to aquatic resources on the site. Implementation of the recommended mitigation measures would reduce indirect impacts to jurisdictional wetlands to less than significant.

Protected Trees

The project site does not contain any trees that are considered protected by the Sacramento City Code.

I appreciate the opportunity to assist you on this project. Feel free to contact me with any questions at (916) 365-8712.

Sincerely,

Stephen Stringer, M.S.
Principal Biologist/Biology Group Manager

Attachments:

A – Figures
B – Regulatory Context
C – Database Query Results
D – Potential for Regionally-Occurring Special-status Species to Occur on the Property
E – Species Observed on the Property
F – Site Photos

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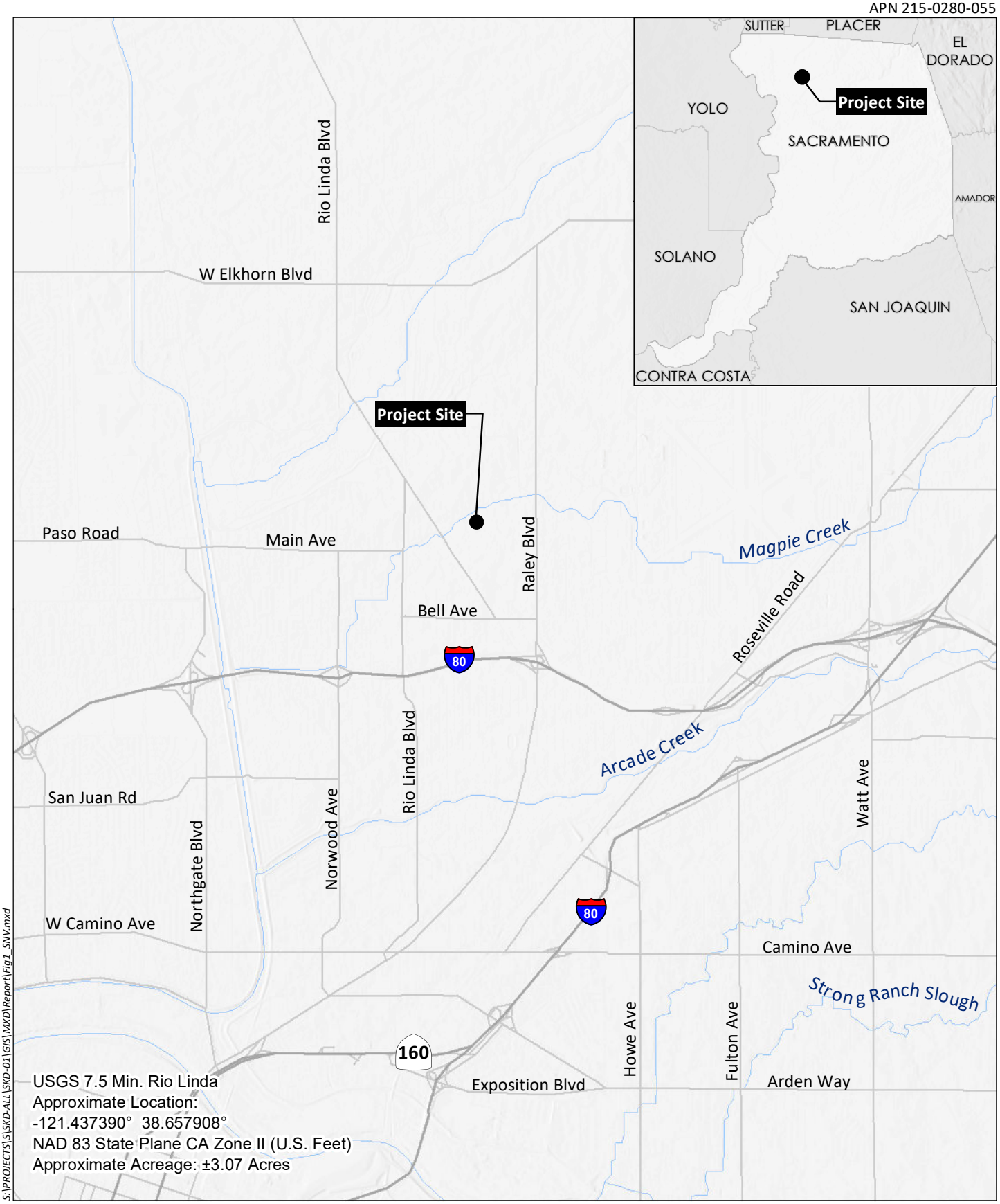
Attachment A

Figures

APN 215-0280-055



Source: Base Map Layers (Esri, USGS, NGA, NASA)

HELIX Environmental Planning

Vicinity Map

Figure 1

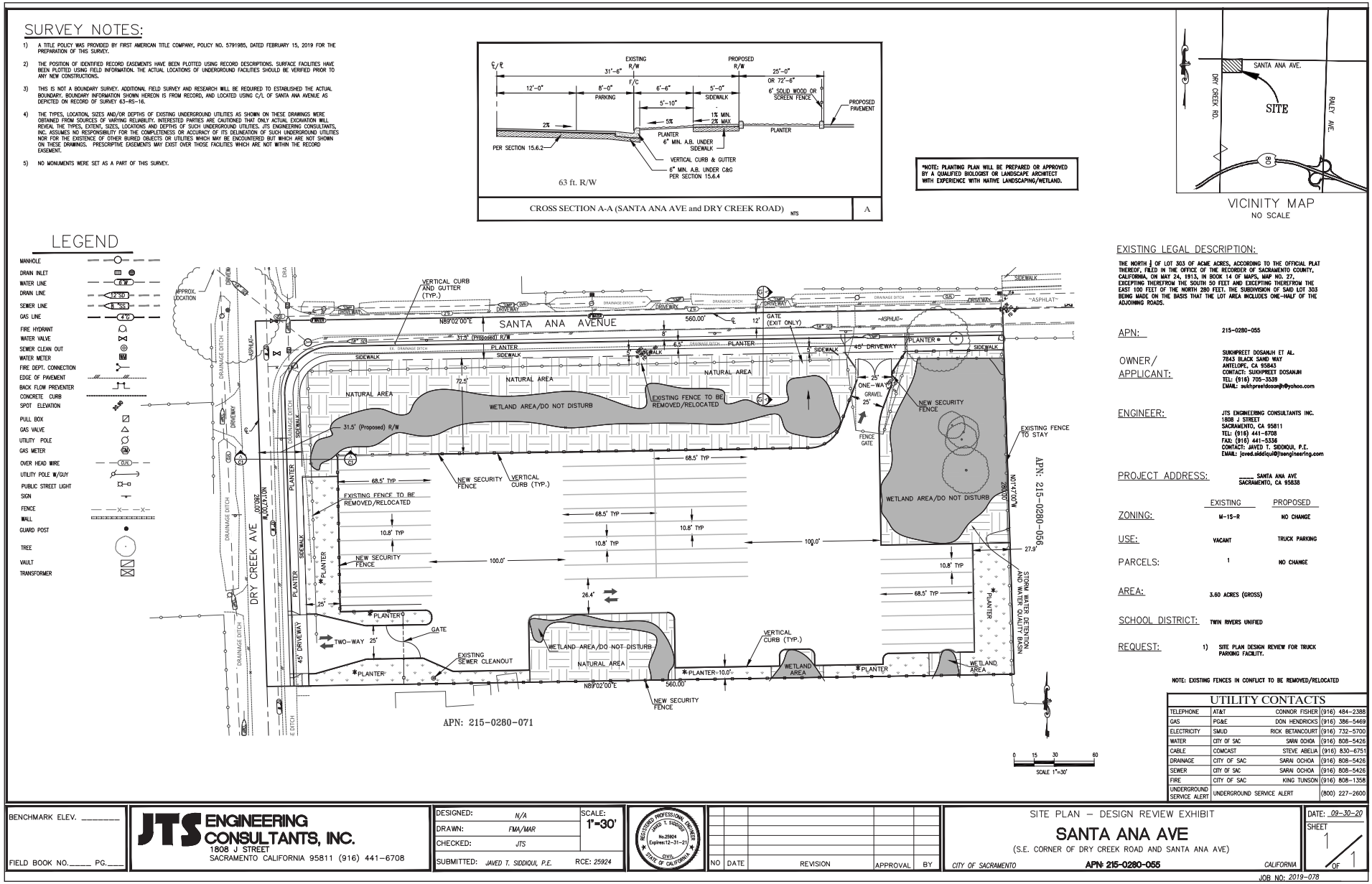
APN 215-0280-055

Source: Base Map Layers (Sacramento County 2018)

HELIX Environmental Planning

Aerial Map

Figure 2



Source: JTS Engineering

HELIX Environmental Planning

Site Plan

Figure 3

APN 215-0280-055

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Source: Base Map Layers (Sacramento County 2018)

HELIX Environmental Planning

Habitat and Resources Map

Figure 4

Attachment B

Regulatory Context

Attachment B
Regulatory Context

Regulatory Setting

Policies, regulations, and plans pertaining to the protection of biological resources on the project site are summarized in the following sections.

Federal Requirements

Federal Endangered Species Act

The U.S. Fish and Wildlife Service (USFWS) enforces the provisions stipulated within the Federal Endangered Species Act of 1973 (FESA; 16 USC 1531 et seq.). Species identified as federally threatened or endangered (50 CFR 17.11, and 17.12) are protected from take, defined as direct or indirect harm, unless a Section 10 permit is granted to an entity other than a federal agency or a Biological Opinion with incidental take provisions is rendered to a federal lead agency via a Section 7 consultation. Pursuant to the requirements of FESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally-listed species may be present in the study area and determine whether the proposed project will jeopardize the continued existence of or result in the destruction or adverse modification of critical habitat of such species (16 USC 1536 (a)[3], [4]). Other federal agencies designate species of concern (species that have the potential to become listed), which are evaluated during environmental review under the National Environmental Protection Act (NEPA) or California Environmental Quality Act (CEQA) although they are not otherwise protected under FESA.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 established federal responsibilities for the protection of nearly all species of birds, their eggs, and nests. The Migratory Bird Treaty Reform Act of 2004 further defined species protected under the act and excluded all non-native species. Section 16 U.S.C. 703–712 of the Act states "unless and except as permitted by regulations, it shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill" a migratory bird. A migratory bird is any species or family of birds that live, reproduce or migrate within or across international borders at some point during their annual life cycle. Currently, there are 836 migratory birds protected nationwide by the Migratory Bird Treaty Act, of which 58 are legal to hunt. The U.S. Court of Appeals for the 9th Circuit (with jurisdiction over California) has ruled that the MBTA does not prohibit incidental take (952 F 2d 297 – Court of Appeals, 9th Circuit 1991).

Clean Water Act

Any person, firm, or agency planning to alter or work in waters of the U.S., including the discharge of dredged or fill material, must first obtain authorization from the U.S. Army Corps of Engineers (USACE) under the Clean Water Act (CWA; 33 USC 1344). Permits, licenses, variances, or similar authorization may also be required by other federal, state, and local statutes. Section 10 of the Rivers and Harbors Act prohibits the obstruction or alteration of navigable waters of the U.S. without a permit from USACE (33 USC 403).

Attachment B (cont.)
Regulatory Context

Waters of the U.S. include certain wetlands; wetlands are defined in 33 CFR Part 328 as:

> "those areas that are inundated or saturated by surface or ground water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions."

Section 401 of the CWA requires that an applicant for a federal license or permit that allows activities resulting in a discharge to waters of the U.S. also obtain a state certification that the discharge complies with all applicable water quality standards, limitations, and restrictions. The Regional Water Quality Control Board (RWQCB) administers the certification program in California and no license or permit may be issued until certification has been granted.

Section 402 establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into waters of the U.S.

Section 404 establishes a permit program administered by USACE that regulates the discharge of dredged or fill material into waters of the U.S. (including wetlands). Implementing regulations by USACE are found at 33 CFR Parts 320-332. The Section 404 (b)(1) Guidelines were developed by the USEPA in conjunction with USACE (40 CFR Part 230), allowing the discharge of dredged or fill material for non-water dependent uses into special aquatic sites only if there is no practicable alternative that would have less adverse impacts.

State Requirements

California Endangered Species Act

The California Endangered Species Act (CESA) (California Fish and Game Code Sections 2050 to 2097) is similar to the FESA. The California Fish and Wildlife Commission is responsible for maintaining lists of threatened and endangered species under CESA. CESA prohibits the take of listed and candidate (petitioned to be listed) species. "Take" under California law means to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch capture, or kill (California Fish and Game Code, Section 86). The California Department of Fish and Wildlife (CDFW) can authorize take of a state-listed species under Section 2081 of the California Fish and Game Code if the take is incidental to an otherwise lawful activity, the impacts are minimized and fully mitigated, funding is ensured to implement and monitor mitigation measures, and CDFW determines that issuance would not jeopardize the continued existence of the species. A CESA permit must be obtained if a project will result in the "take" of listed species, either during construction or over the life of the project. For species listed under both FESA and CESA requiring a Biological Opinion under Section 7 of the FESA, CDFW may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

California Code of Regulations Title 14 and California Fish and Game Code

The official listing of endangered and threatened animals and plants is contained in the California Code of Regulations Title 14 §670.5. A state candidate species is one that the California Fish and Game Code has formally noticed as being under review by CDFW to include in the state list pursuant to Sections 2074.2 and 2075.5 of the California Fish and Game Code.

Attachment B (cont.)
Regulatory Context

Legal protection is also provided for wildlife species in California that are identified as "fully protected animals." These species are protected under Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the California Fish and Game Code. These statutes prohibit take or possession of fully protected species at any time. CDFW is unable to authorize incidental take of fully protected species unless any such take authorization is issued in conjunction with the approval of a Natural Community Conservation Plan that covers the fully protected species (California Fish and Game Code Section 2835).

California Environmental Quality Act

Under the California Environmental Quality Act of 1970 (CEQA; Public Resources Code Section 21000 et seq.), lead agencies analyze whether projects would have a substantial adverse effect on a candidate, sensitive, or special-status species (Public Resources Code Section 21001(c)). These "special-status" species generally include those listed under FESA and CESA, and species that are not currently protected by statute or regulation, but would be considered rare, threatened, or endangered under the criteria included CEQA Guidelines Section 15380. Therefore, species that are considered rare are addressed under CEQA regardless of whether they are afforded protection through any other statute or regulation. The California Native Plant Society (CNPS) inventories the native flora of California and ranks species according to rarity; plants ranked as 1A, 1B, 2A, 2B, and 3 are generally considered special-status species under CEQA.[1]

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines Section 15380(d) provides that a species not listed on the federal or state list of protected species may be considered rare if it can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants and animals. Section 15380(d) allows a public agency to undertake a review to determine if a significant effect on species that have not yet been listed by either the USFWS or CDFW (i.e., candidate species) would occur.

California Native Plant Protection Act

The California Native Plant Protection Act of 1977 (California Fish and Game Code Sections 1900-1913) empowers the Fish and Game Commission to list native plant species, subspecies, or varieties as endangered or rare following a public hearing. To the extent that the location of such plants is known, CDFW must notify property owners that a listed plant is known to occur on their property. Where a property owner has been so notified by CDFW, the owner must notify CDFW at least 10 days in advance of any change in land use (other than changing from one agricultural use to another), in order that CDFW may salvage listed plants that would otherwise be destroyed. Currently, 64 taxa of native plants have been listed as rare under the act.

Nesting Birds

California Fish and Game Code Subsections 3503 and 3800 prohibit the possession, take, or needless destruction of birds, their nests, and eggs, and the salvage of dead nongame birds. California Fish and Game Code Subsection 3503.5 protects all birds in the orders of Falconiformes and Strigiformes (birds of

[1] The California Rare Plant Rank system can be found online at: < http://www.cnps.org/cnps/rareplants/ranking.php>

Attachment B (cont.)
Regulatory Context

prey). Fish and Game Code Subsection 3513 states that it is unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Bird Treaty Act. The Attorney General of California has released an opinion that the Fish and Game Code prohibits incidental take.

Porter-Cologne Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act, Water Code Section 13000 et seq.) is California's statutory authority for the protection of water quality in conjunction with the federal CWA. The Porter-Cologne Act requires the State Water Resources Control Board (SWRCB) and RWQCBs under the CWA to adopt and periodically update water quality control plans, or basin plans. Basin plans are plans in which beneficial uses, water quality objectives, and implementation programs are established for each of the nine regions in California. The Porter-Cologne Act also requires dischargers of pollutants or dredged or fill material to notify the RWQCBs of such activities by filing Reports of Waste Discharge and authorizes the SWRCB and RWQCBs to issue and enforce waste discharge requirements, National Pollution Discharge Elimination System (NPDES) permits, Section 401 water quality certifications, or other approvals. The RWQCB will assert jurisdiction over any waters of the state, including wetlands, regardless of whether or not the feature qualifies as waters of the U.S.

California Fish and Game Code Section 1602 – Lake and Streambed Alteration Program

Diversions or obstructions of the natural flow of, or substantial changes or use of material from the bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources are subject to regulation by CDFW, pursuant to Section 1602 of the California Fish and Game Code. The CDFW requires notification prior to commencement of any such activities, and a Streambed Alteration Agreement (SAA) pursuant to Fish and Game Code Sections 1601-1603, if the activity may substantially adversely affect an existing fish or wildlife resource. A lake under CDFW jurisdiction is defined as "a permanent natural body of water of any size or an artificially impounded body of water of at least one acre, isolated from the sea, and having an area of open water of sufficient depth and permanency to prevent complete coverage by rooted aquatic plants" (CCR Vol. 18 Title 14, Section 1562.1). Streambeds within CDFW jurisdiction are based on the definition of a stream as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supporting fish or other aquatic life" (CCR Vol. 18 Title 14, Section 1.72).

Local Requirements

Trees

The City of Sacramento protects trees under Chapter 12.56 of the Sacramento City Code. A permit is required to remove native oaks (*Quercus* spp.), buckeyes (*Aesculus californicus*), or sycamores (*Platanus racemosa*) having a diameter at standard height (i.e., 54 inches above grade; DSH) of 12 inches or more, or any tree having a DSH of 24 inches or more, on undeveloped private parcels inside the City limits. For a tree with a common root system that branches at the ground, DSH means the sum of the diameter of the largest trunk and one-half the cumulative diameter of the remaining trunks at 4.5 feet above natural grade.

Attachment C

Database Query Results

CNPS California Native Plant Society

*The database used to provide updates to the Online Inventory is under construction. View updates and changes made since May 2019 here.

Plant List

7 matches found. *Click on scientific name for details*

Search Criteria

California Rare Plant Rank is one of [1A, 1B, 2A, 2B, 3, 4],
FESA is one of [Endangered, Threatened, Candidate, Not Listed],
CESA is one of [Endangered, Threatened, Rare, Not Listed], Found in Quads 3812164, 3812163 3812154 and 3812153;

Modify Search Criteria Export to Excel Modify Columns Modify Sort Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Brodiaea rosea ssp. vallicola	valley brodiaea	Themidaceae	perennial bulbiferous herb	Apr-May(Jun)	4.2	S3	G5T3
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	Mar-May	2B.2	S2	GU
Fritillaria agrestis	stinkbells	Liliaceae	perennial bulbiferous herb	Mar-Jun	4.2	S3	G3
Gratiola heterosepala	Boggs Lake hedge-hyssop	Plantaginaceae	annual herb	Apr-Aug	1B.2	S2	G2
Juncus leiospermus var. ahartii	Ahart's dwarf rush	Juncaceae	annual herb	Mar-May	1B.2	S1	G2T1
Legenere limosa	legenere	Campanulaceae	annual herb	Apr-Jun	1B.1	S2	G2
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	1B.2	S3	G3

Suggested Citation

California Native Plant Society, Rare Plant Program. 2020. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 02 June 2020].

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Glossary

Information
About the Inventory
About the Rare Plant Program
CNPS Home Page
About CNPS
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Contributors
The Calflora Database
The California Lichen Society
California Natural Diversity Database
The Jepson Flora Project
The Consortium of California Herbaria
CalPhotos

Questions and Comments
rareplants@cnps.org

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

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

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

Location

Sacramento County, California

Local office

Sacramento Fish And Wildlife Office

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

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

Endangered species

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

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

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

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

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

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

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

Reptiles

NAME	STATUS

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

Amphibians

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

Fishes

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

Insects

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

Crustaceans

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

Critical habitats

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

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

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

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

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

Additional information can be found using the following links:

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

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

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

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Bald Eagle Haliaeetus leucocephalus — Breeds Jan 1 to Aug 31

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

Burrowing Owl Athene cunicularia — Breeds Mar 15 to Aug 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9737

Clark's Grebe Aechmophorus clarkii — Breeds Jan 1 to Dec 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Common Yellowthroat Geothlypis trichas sinuosa — Breeds May 20 to Jul 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/2084

Lawrence's Goldfinch Carduelis lawrencei — Breeds Mar 20 to Sep 20

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Long-billed Curlew Numenius americanus — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/5511

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

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

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

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

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

Song Sparrow Melospiza melodia — Breeds Feb 20 to Sep 5
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Spotted Towhee Pipilo maculatus clementae — Breeds Apr 15 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/4243

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

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

Yellow-billed Magpie Pica nuttalli — Breeds Apr 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9726

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (▪)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

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

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

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

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

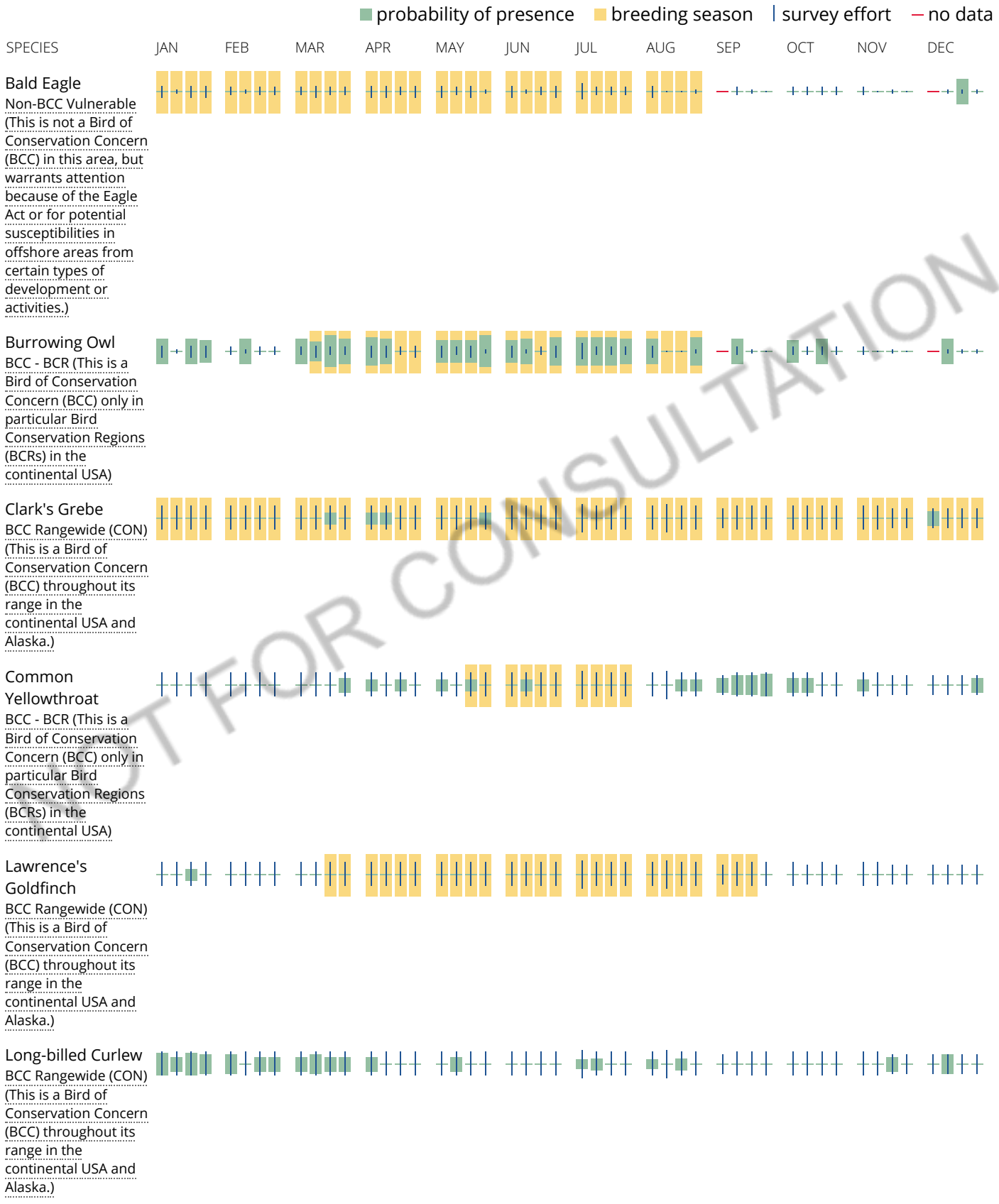
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

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

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

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Marbled Godwit
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

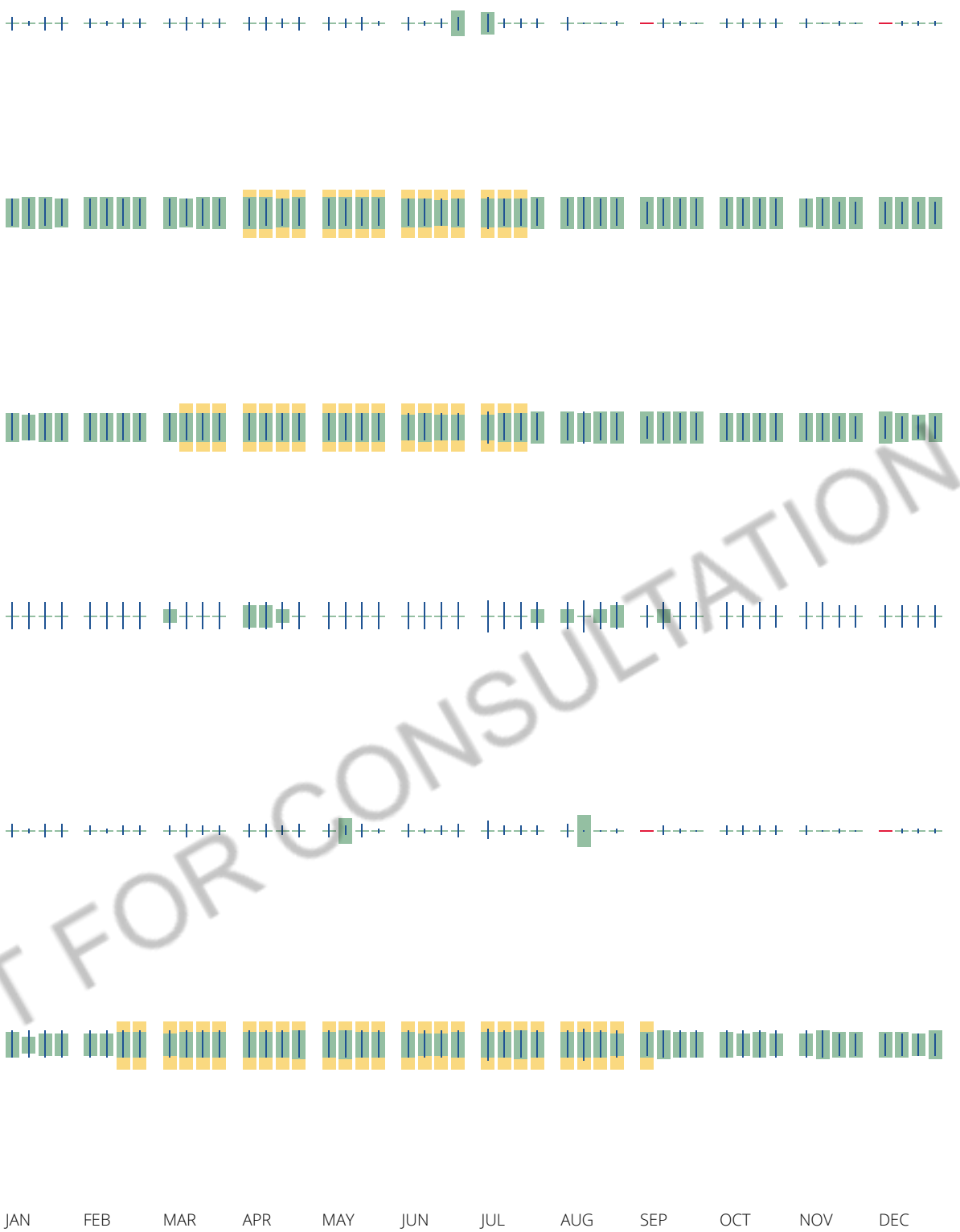
Nuttall's Woodpecker
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Oak Titmouse
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Rufous Hummingbird
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

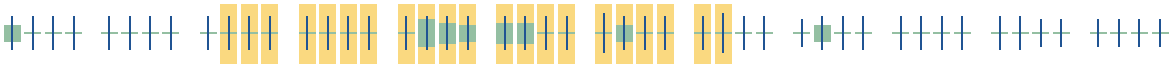
Short-billed Dowitcher
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Song Sparrow
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



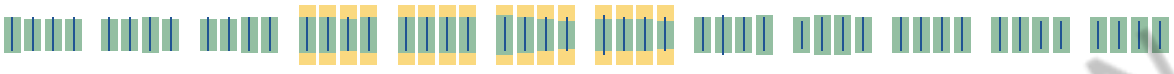
Spotted Towhee
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Tricolored Blackbird
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Whimbrel
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Yellow-billed Magpie
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



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

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

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

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

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

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

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

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

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

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

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

What are the levels of concern for migratory birds?

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

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

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

Details about birds that are potentially affected by offshore projects

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

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

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ “What does IPaC use to generate the migratory birds potentially occurring in my specified location”. Please be aware this report provides the “probability of presence” of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look

carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

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

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

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

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

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

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

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

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

Data exclusions

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

Data precautions

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

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Rio Linda (3812164) OR Sacramento East (3812154) OR Carmichael (3812153) OR Citrus Heights (3812163))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
Ambystoma californiense California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
Andrena subapasta An andrenid bee	IIHYM35210	None	None	G1G2	S1S2	
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Ardea alba great egret	ABNGA04040	None	None	G5	S4	
Ardea herodias great blue heron	ABNGA04010	None	None	G5	S4	
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
Branchinecta mesovallensis midvalley fairy shrimp	ICBRA03150	None	None	G2	S2S3	
Buteo regalis ferruginous hawk	ABNKC19120	None	None	G4	S3S4	WL
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
Desmocerus californicus dimorphus valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T2	S2	
Downingia pusilla dwarf downingia	PDCAM060C0	None	None	GU	S2	2B.2
Dumontia oregonensis hairy water flea	ICBRA23010	None	None	G1G3	S1	
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Elderberry Savanna Elderberry Savanna	CTT63440CA	None	None	G2	S2.1	
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Fritillaria agrestis stinkbells	PMLIL0V010	None	None	G3	S3	4.2
Gratiola heterosepala Boggs Lake hedge-hyssop	PDSCR0R060	None	Endangered	G2	S2	1B.2
Hydrochara rickseckeri Ricksecker's water scavenger beetle	IICOL5V010	None	None	G2?	S2?	
Juncus leiospermus var. ahartii Ahart's dwarf rush	PMJUN011L1	None	None	G2T1	S1	1B.2
Legenere limosa legenere	PDCAM0C010	None	None	G2	S2	1B.1
Lepidurus packardi vernal pool tadpole shrimp	ICBRA10010	Endangered	None	G4	S3S4	
Linderiella occidentalis California linderiella	ICBRA06010	None	None	G2G3	S2S3	
Melospiza melodia song sparrow ("Modesto" population)	ABPBXA3010	None	None	G5	S3?	SSC
Northern Claypan Vernal Pool Northern Claypan Vernal Pool	CTT44120CA	None	None	G1	S1.1	
Northern Hardpan Vernal Pool Northern Hardpan Vernal Pool	CTT44110CA	None	None	G3	S3.1	
Northern Volcanic Mud Flow Vernal Pool Northern Volcanic Mud Flow Vernal Pool	CTT44132CA	None	None	G1	S1.1	
Oncorhynchus mykiss irideus pop. 11 steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	G5T2Q	S2	
Orcuttia viscida Sacramento Orcutt grass	PMPOA4G070	Endangered	Endangered	G1	S1	1B.1
Progne subis purple martin	ABPAU01010	None	None	G5	S3	SSC
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S2	
Sagittaria sanfordii Sanford's arrowhead	PMALI040Q0	None	None	G3	S3	1B.2
Spea hammondii western spadefoot	AAABF02020	None	None	G3	S3	SSC
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Thamnophis gigas giant gartersnake	ARADB36150	Threatened	Threatened	G2	S2	

Record Count: 38

Attachment D

Potential for Regionally-Occurring Special-status Species to Occur on the Property

Attachment D
Potential for Regionally-Occurring Special-status Species to Occur on the Property

Species Name/ Common Name[1]	Status[2]	Habit, Ecology and Life History	Potential to Occur
Plants			
Downingia pusilla dwarf downingia	--/--/2B.2	An annual herb found in vernal pools and mesic microsites in valley and foothill grassland from 1 – 445 meters elevation. Blooms March – May (CNPS 2020).	**Will not occur.** There are no suitable vernal pools on the property.
Gratiola heterosepala Boggs Lake hedge-hyssop	--/SE/1B.2	An annual herb found on clay soils in marshes and swamps at lake margins, and in vernal pools from 10 – 2,375 meters elevation. Blooms April – August (CNPS 2020).	**Will not occur.** There are no marshes, swamps, or suitable vernal pools on the property.
Juncus leiospermus var. *ahartii* Ahart's dwarf rush	--/--/1B.2	An annual herb found in mesic soils in valley and foothill grassland from 30 – 299 meters elevation. Blooms March – May (CNPS 2020).	**Will not occur.** There is no suitable mesic grassland habitat on the property.
Legenere limosa legenere	--/--/1B.1	An annual herb found in vernal pools from 1 – 880 meters elevation. Blooms April – June (CNPS 2020).	**Will not occur.** There are no suitable vernal pools on the property.
Orcuttia viscida Sacramento Orcutt grass	FE/SE/1B.1	An annual herb found in vernal pools from 30 – 100 meters elevation. Blooms April-July (Sep) (CNPS 2020).	**Will not occur.** There are no suitable vernal pools on the property.
Sagittaria sanfordii Sanford's arrowhead	--/--/1B.2	A perennial rhizomatous herb found in marshes, swamps, and assorted shallow freshwater habitats from 0 – 650 meters elevation. Blooms May – October (November) (CNPS 2020).	**Will not occur**. There is no suitable aquatic habitat on the property.
Animals			
Invertebrates			
Branchinecta lynchi vernal pool fairy shrimp	FT/--/--	The range of the vernal pool fairy shrimp (VPFS) within California includes the Central Valley and southern California. (USFWS 2005). Populations are known from Stillwater Plain in Shasta County through most of the length of the Central Valley to Pixley in Tulare County (additional disjunct populations exist at various locations throughout state). VPFS occurs mostly in vernal pools, however it is also found in a variety of both natural and artificial wetland habitats, such as	**Not Expected.** The disturbed wetlands on the project site are not considered suitable habitat for this species. The wetland swales on site are vegetated with a dense cover of non-native facultative grasses indicating a hydrologic regime characterized by saturation rather than inundation. The pond is not considered to be suitable habitat as it

Attachment D (cont.)
Potential for Regionally-Occurring Special-status Species to Occur on the Property

Species Name/ Common Name[1]	Status[2]	Habit, Ecology and Life History	Potential to Occur
		alkali pools, ephemeral drainages, stock ponds, roadside ditches, vernal swales, and rock outcrop pools (Helm 1997). Occupied wetlands are typically small (ranging from 0.1 to 0.05 acres in size), and pond for a relatively short duration (3-4 weeks) (Eriksen and Belk 1999). Soil types associated with VPFS vary greatly with geography and influence the ecology of the species. This fairy shrimp occurs in pools with 48 to 481 ppm salinity, and pH from 6.3 to 8.5 (Eriksen and Belk 1999).	contains waste from illegal dumping and receives water from the roadside of Santa Ana Avenue, which would degrade water quality. The nearest extant occurrence in CNDDB of this species is 1.2 miles northeast (CDFW 2020).
Desmocerus californicus californicus valley elderberry longhorn beetle	FT/--/--	Endemic to elderberry shrubs (*Sambucus* spp.) occurring in riparian habitat in the Sacramento and San Joaquin Valleys, riparian habitats in the Sacramento and San Joaquin Valleys, and less common throughout riparian forests of the Central Valley from Redding to Fresno County (USFWS 2014) typically below 152 m amsl (USFWS 2017a).	**Will not occur.** There are no elderberry shrubs in or immediately adjacent to the property.
Lepidurus packardi vernal pool tadpole shrimp	FE/--/--	The vernal pool tadpole shrimp (VPTS) occurs within the Central Valley of California and in the San Francisco Bay area (USFWS 2005), with the majority of the populations occurring in the Sacramento Valley. This species has also been reported from the Sacramento River Delta to the east side of San Francisco Bay, and from a few scattered localities in the San Joaquin Valley from San Joaquin County to Madera County (Rogers 2001). Suitable habitats vary considerably, including vernal pools, clay flats, alkaline pools, ephemeral stock tanks, roadside ditches, and road ruts (Rogers 2001). Vernal pools may range in size from small, clear, and well-vegetated to highly turbid, alkali scald pools	**Not Expected.** The disturbed wetlands on the project site are not considered suitable habitat for this species. The wetland swales on site are vegetated with a dense cover of non-native facultative grasses indicating a hydrologic regime characterized by saturation rather than inundation. The pond is not considered to be suitable habitat as it contains waste from illegal dumping and receives water from the roadside of Santa Ana Avenue, which would degrade water quality. Nearest extant occurrence in CNDDB is 0.9 miles

Attachment D (cont.)
Potential for Regionally-Occurring Special-status Species to Occur on the Property

Species Name/ Common Name[1]	Status[2]	Habit, Ecology and Life History	Potential to Occur
		to large winter lakes (Rogers 2001) ranging in size from 54 square feet to 89 acres (USFWS 2005), containing clear- to highly-turbid water. They may be seasonal or ephemeral and may exhibit a wide range of salinity levels. However, VPTS survival requires that water bodies be deeper than 5 inches, pond for 40 days or more, and not experience wide daily temperature fluctuations (Rogers 2001). VPTS cysts (resting eggs) also must have the opportunity to dry out before they can hatch.	northeast and was last observed in 1998 (CDFW 2020).
Fishes			
Hypomesus transpacificus Delta smelt	FT/SE/--	Delta smelt are tolerant of a wide salinity range. For a large part of their one-year life span, delta smelt live along the freshwater edge of the mixing zone (saltwater-freshwater interface). Shortly before spawning, adults migrate upstream from the brackish-water habitat associated with the mixing zone and disperse into river channels and tidally-influenced backwater sloughs. They spawn in shallow, fresh or slightly brackish water upstream of the mixing zone. Most spawning happens in tidally-influenced backwater sloughs and channel edgewaters. Although spawning has not been observed in the wild, the eggs are thought to attach to substrates such as cattails, tules, tree roots and submerged branches. Delta smelt are found only from Suisun Bay upstream through the Delta in Contra Costa, Sacramento, San Joaquin, Solano and Yolo counties (USFWS 1995).	**Will not occur.** There is no suitable habitat for this species on the property and the property is outside of this species' known geographic range.

Attachment D (cont.)
Potential for Regionally-Occurring Special-status Species to Occur on the Property

Species Name/ Common Name[1]	Status[2]	Habit, Ecology and Life History	Potential to Occur
Oncorhynchus mykiss irideus pop. 11 Central Valley Steelhead DPS	FT/--/--	This distinct population segment includes all naturally spawned anadromous steelhead populations below natural and manmade impassable barriers in the Sacramento and San Joaquin Rivers and their tributaries, excluding steelhead from San Francisco and San Pablo Bays and their tributaries, as well as two artificial propagation programs: the Coleman NFH, and Feather River Hatchery steelhead hatchery programs (NMFS 2016). Steelhead spawn in rivers and streams with cool, clear, water and suitable silt free substrate (NMFS 2016).	**Will not occur.** There is no suitable aquatic habitat on the property.
Amphibians			
Ambystoma californiense California tiger salamander	FT/ST/--	Generally restricted to vernal pools and seasonal ponds, including many constructed stock ponds, in grassland and oak savannah plant communities from sea level to about 1,500 feet in central California. Adults spend the majority of their lives in upland areas surrounding suitable breeding ponds, in rodent burrows. Suitable breeding habitat must be present in combination with suitable upland habitat. In the Coastal region, populations are scattered from Sonoma County in the northern San Francisco Bay Area to Santa Barbara County, and in the Central Valley and Sierra Nevada foothills from Yolo to Kern counties (USFWS 2017b).	**Will not occur**. The property is outside of this species' known geographic range and there is no suitable habitat in or adjacent to the site.
Rana draytonii California red-legged frog	FT/--/SSC	The California red-legged frog occupies a fairly distinct habitat, combining both specific aquatic and riparian components. The adults require dense, shrubby or emergent riparian vegetation closely associated with deep (greater than 2 1/3-foot deep) still or slow-moving water. The largest densities of California red-legged frogs are	**Will not occur**. The property is outside of this species' known geographic range and there is no suitable habitat in or adjacent to the site.

Attachment D (cont.)
Potential for Regionally-Occurring Special-status Species to Occur on the Property

Species Name/ Common Name[1]	Status[2]	Habit, Ecology and Life History	Potential to Occur
		associated with deep-water pools with dense stands of overhanging willows (*Salix* spp.) and an intermixed fringe of cattails (*Typha latifolia*). Well-vegetated terrestrial areas within the riparian corridor may provide important sheltering habitat during winter. California red-legged frogs aestivate (enter a dormant state during summer or dry weather) in small mammal burrows and moist leaf litter. They have been found up to 100 feet from water in adjacent dense riparian vegetation. Studies have indicated that this species cannot inhabit water bodies that exceed 70° F, especially if there are no cool, deep portions (USFWS 2002).	
Spea hammondii western spadefoot toad	--/--/SSC	Amphibian that breeds in vernal pools and seasonal ponds or slow portions of streams in grasslands and woodlands. Adults spend most of their time in underground burrows in grasslands surrounding breeding pools (Jennings and Hayes 1994). Breeding is typically finished by the end of March. Tadpoles mature through late-spring and disperse as pools dry (Zeiner et al. 1988-1990).	**Will not occur.** The project site does not provide suitable breeding habitat for this species.
Reptiles			
Actinemys (=Emys) marmorata western pond turtle	--/--/SSC	Inhabits slow-moving water with dense submerged vegetation, abundant basking sites, gently sloping banks, and dry clay or silt soils in nearby uplands. Turtles will lay eggs up to 0.25-mile from water, but typically go no more than 600 feet (Jennings and Hayes 1994).	**Will not occur.** There is no suitable habitat on the property.
Thamnophis gigas giant garter snake	FT/ST/--	Endemic to the San Joaquin and Sacramento Valley floors. Inhabits agricultural wetlands and other waterways such as irrigation and drainage canals, sloughs, ponds, small lakes, low gradient streams, and adjacent uplands. Requires	**Will not occur.** There is no suitable habitat on the property and potential aquatic resources on the project site are dry during the active season of this species.

Attachment D (cont.)
Potential for Regionally-Occurring Special-status Species to Occur on the Property

Species Name/ Common Name[1]	Status[2]	Habit, Ecology and Life History	Potential to Occur
		adequate water during its active season (early spring through mid-fall) to provide food and cover, emergent, herbaceous wetland vegetation for foraging and cover, grassy banks and openings in waterside vegetation for basking, and higher elevation uplands for cover and refuge from flood waters during its dormant season (winter). Inhabits small mammal burrows and other soil crevices with sunny exposure along south and west facing slopes, above prevailing flood elevations when dormant. Primarily found in marshes and sloughs as well as slow-moving creeks but absent from large rivers (USFWS 2017c).	
Birds			
Agelaius tricolor tricolored blackbird	--/ST/--	Common locally throughout central California. Nests and seeks cover in emergent wetland vegetation and thorny vegetation such as Himalayan blackberry (*Rubus armeniacus*) as well as cattails and tules. Nesting area must be large enough to support a minimum colony of 50 pairs as they are a highly colonial species. Forages on ground in croplands, grassy fields, flooded land, and edges of ponds for insects (Shuford and Gardali 2008).	**Will not occur.** The project site does not provide suitable nesting habitat for this species. Nearest extant occurrence in CNDDB is 3.4 miles south at McLellan Airfield (CDFW 2020).
Aquila chrysaetos golden eagle	--/--/FP	Typically occurs in rolling foothills, mountain areas, deserts and other open habitats up to 3,822 m amsl. Typically nests on cliff ledges or large trees in open areas in canyons. Will occasionally use other tall structures for nesting, such as electrical transmission towers. Prey consists mostly of rodents, carrion, birds, reptiles and occasionally small livestock (Zeiner et al. 1990).	**Will not occur.** The property does not provide suitable nesting or foraging habitat.

Attachment D (cont.)
Potential for Regionally-Occurring Special-status Species to Occur on the Property

Species Name/ Common Name[1]	Status[2]	Habit, Ecology and Life History	Potential to Occur
Athene cunicularia burrowing owl	--/--/SSC	Forages in grasslands, agricultural fields, and disturbed places where burrowing mammals are abundant. Nests in burrows, especially those of California ground squirrel (*Otospermophilus beecheyi*; CDFW 2012).	**May Occur**. Marginal habitat for this species is present on the site. Previous disking and staging of materials has removed any small mammal burrows; however, there are several small debris piles that provide elements of suitable habiat. The site is too small in size to support burrowing owl foraging and is surrounded by disturbed industrial and residential parcels. No small mammal burrows or sign of burrowing owl was observed on the site. The nearest extant occurrence of nesting is 2 miles west along Steelhead Creek (CDFW 2020).
Buteo swainsoni Swainson's hawk	--/ST/--	Swainson's hawk breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah in the Central Valley and forages in adjacent grasslands or suitable grain or alfalfa fields, or livestock pastures. Swainson's hawks breed in California and winter in Mexico and South America. Swainson's hawks usually arrive in the Central Valley between March 1 and April 1 and migrate south between September and October. Swainson's hawks usually nest in trees adjacent to suitable foraging habitat. Swainson's hawk nests are usually located in trees near the edges of riparian stands, in lone trees or groves of trees in agricultural fields, and in mature roadside trees. Valley oak, Fremont cottonwood, walnut, and large willow with an average height of about 58 feet, and ranging from 41 to 82 feet, are the most commonly used nest trees in the	**Present.** A single adult Swainson's hawk was observed flying over the site during the biological reconnaissance survey. The hawk was chased off the site by a pair of American crows. There is no suitable nesting habitat on the site and the site is not large enough to provide any significant foraging habitat. However, Swainson's hawk would be expected to occasionally fly over the site or perch in the site and may occasionally forage in the site. Large trees adjacent to the site could be used by this species for nesting and suitable foraging habitat is present in close proximity. Open habitat, such as grain fields, grassland and savannah, is

Attachment D (cont.)
Potential for Regionally-Occurring Special-status Species to Occur on the Property

Species Name/ Common Name[1]	Status[2]	Habit, Ecology and Life History	Potential to Occur
		Central Valley. Suitable foraging areas for Swainson's hawk include native grasslands or lightly grazed pastures, alfalfa and other hay crops, idle land, certain grain and row croplands, and ruderal lands. Swainson's hawks primarily feed on voles; however, they will feed on a variety of prey including small mammals, birds, and insects (CDFW 1994).	abundant less than a mile north and west of the project site, which are within the foraging range of a nesting pair of Swainson's hawk. The nearest extant occurrence of nesting is 1.5 miles northwest along Dry Creek (CDFW 2020).
Coccyzus americanus occidentalis Western yellow-billed cuckoo	FT/SE/--	Occurs at isolated sites in Sacramento Valley in northern California, and along Kern and Colorado River systems in southern California. Frequents valley foothill and desert riparian habitats. Inhabits open woodlands with clearings, and riparian habitats with dense understory foliage along slow-moving drainages, backwaters, or seeps. Prefers dense willows for roosting but will use adjacent orchard in the Sacramento Valley (CDFW 2005).	**Will not occur.** The property does not provide suitable habitat for this species.
Elanus leucurus white-tailed kite	--/--/FP	Inhabits rolling foothills and valley margins with scattered oaks, as well as river bottomlands or marshes next to deciduous woodland. Nests in isolated, dense-topped trees in open areas. Forages in a variety of habitats including grassland, marshes, and agricultural fields (Zeiner *et al.* 1988-1990).	**High.** The project site provides suitable foraging habitat and large trees on adjacent lots provide suitable nesting habitat for this species. Raptor nests were not observed in any of the large trees adjacent to the site. Nearest extant occurrence is 0.9 mile north near the Bell Acqua Lakes (CDFW 2020).
Melospiza melodia Song sparrow ("Modesto" population)	--/--/SSC	Restricted to California, where it is locally numerous in the Sacramento Valley, Sacramento–San Joaquin River Delta, and northern San Joaquin Valley. Resides in emergent freshwater marshes dominated by tules (*Scirpus* spp.) and cattails (*Typha* spp.) as well as riparian willow (*Salix* spp.) thickets. These	**Will not occur.** The property does not provide suitable nesting habitat for this species.

Attachment D (cont.)
Potential for Regionally-Occurring Special-status Species to Occur on the Property

Species Name/ Common Name[1]	Status[2]	Habit, Ecology and Life History	Potential to Occur
		Song Sparrows also nest in riparian forests of Valley Oak (*Quercus lobata*) with a sufficient understory of blackberry (*Rubus* spp.), along vegetated irrigation canals and levees, and in recently planted Valley Oak restoration sites (Shuford and Gardali 2008).	
Progne subis purple martin	--/--/SSC	Occurs as a summer resident and migrant, primarily from mid-March to late September. Breeds from May (rarely late Apr) to mid-August. Purple martins are widely but locally distributed in forest and woodland areas at low to intermediate elevations throughout much of the state. Martins use a wide variety of nest substrates (e.g., tree cavities, bridges, utility poles, lava tubes, and, formerly, buildings), but nonetheless are very selective of habitat conditions nearby. Martins are most abundant in mesic regions, near large wetlands and other water bodies, and at upper slopes and ridges, which likely concentrate aerial insects (Shuford and Gardali 2008).	**Will not occur.** The property does not provide suitable nesting habitat for this species.
Riparia riparia bank swallow	--/ST/--	Found primarily in riparian and lowland habitat in California. Nests in colonies along cliffs or steep riverbanks in holes. In California, a majority of the population is situated along the Sacramento River and the Feather River. Other smaller populations persist near Monterey and north of Shasta counties (Zeiner *et al.* 1988-1990).	**Will not occur.** The project site does not provide suitable nesting habitat for this species.

Attachment D (cont.)
Potential for Regionally-Occurring Special-status Species to Occur on the Property

Species Name/ Common Name[1]	Status[2]	Habit, Ecology and Life History	Potential to Occur
Mammals			
Taxidea taxus American badger	--/--/SSC	Inhabits drier open stages of most shrub, forest, and herbaceous habitats with loose, friable soils. Preys on a wide variety of mammals, reptiles, birds, and carrion, and hunts mostly by digging out fossorial prey. Occasionally takes prey on the surface. Not tolerant of cultivation. No longer occur in the Central Valley except in the extreme western edge (Williams 1986).	**Will not occur.** The project site does not provide suitable habitat for this species; the property is too small and in too urbanized a setting to provide foraging habitat.

[1] Sensitive species reported in CNDDB or CNPS on the "Rio Linda" USGS quads, or in USFWS lists for the project site.

[2] Status is as follows: Federal (ESA) listing/State (CESA) listing/other CDFW status or CRPR. F = Federal; S = State of California; E = Endangered; T = Threatened; C = Candidate; FP=Fully Protected; SSC=Species of Special Concern; WL=Watch List.

[3] Status in the Project site is assessed as follows. **Will Not Occur**: Species is either sessile (*i.e.* plants) or so limited to a particular habitat that it cannot disperse on its own and/or habitat suitable for its establishment and survival does not occur on the project site; **Not Expected**: Species moves freely and might disperse through or across the project site, but suitable habitat for residence or breeding does not occur on the project site, potential for an individual of the species to disperse through or forage in the site cannot be excluded with 100% certainty; **Presumed Absent:** Habitat suitable for residence and breeding occurs on the project site; however, focused surveys conducted for the current project were negative; **May Occur**: Species was not observed on the site and breeding habitat is not present but the species has the potential to utilize the site for dispersal, **High**: Habitat suitable for residence and breeding occurs on the project site and the species has been recorded recently on or near the project site, but was not observed during surveys for the current project; **Present**: The species was observed during biological surveys for the current project and is assumed to occupy the project site or utilize the project site during some portion of its life cycle.

CRPR = California Rare Plant Rank: 1B – rare, threatened, or endangered in California and elsewhere; 2B – rare, threatened, or endangered in California but more common elsewhere. Extension codes: .1 – seriously endangered; .2 – moderately endangered.

Attachment D
Potential for Regionally-Occurring Special-status Species to Occur on the Property

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2017b. Recovery Plan for the Central California Distinct Population Segment of the California Tiger Salamander (*Ambystoma californiense*). U.S. Fish and Wildlife Service, Pacific Southwest Region, Sacramento, California. v + 69pp.

2017c. Recovery Plan for the Giant Garter Snake (*Thamnophis gigas*). U.S. Fish and Wildlife Service, Pacific Southwest Region, Sacramento, California. vii + 71 pp.

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Attachment E

Species Observed on the Property

Attachment E
Species Observed on the Property

Table E-1. Plant Species

Family	Species Name	Common Name	Status[1]
Native			
Cyperaceae	*Eleocharis macrostachya*	pale spikerush	--
Juncaceae	*Juncus bufonius*	toad rush	--
Salicaceae	*Populus fremontii*	Fremont cottonwood	--
	Salix gooddingii	Goodding's black willow	--
Non-native			
Asteraceae	*Helminthotheca echioides*	Bristly oxtongue	Limited
	Leontodon saxatilis	lesser hawkbit	--
Geraniaceae	*Erodium botrys*	long-beak filaree	--
Lythraceae	*Lythrum hyssopifolia*	hyssop loosestrife	Moderate
Poaceae	*Avena fatua*	wild oats	Moderate
	Briza minor	little quakinggrass	--
	Bromus diandrus	ripgut brome	Moderate
	Bromus hordeaceus	Soft brome	Limited
	Cynodon dactylon	Bermuda grass	Moderate
	Festuca perennis	Italian ryegrass	--
	Polypogon monspeliensis	annual beard grass	Limited
Rosaceae	*Prunus dolcis*	almond	--

[1] Status of native species is federal listing/state listing/California Rare Plant Rank; Status for non-native species is California Invasive Species Council invasiveness rating.

Attachment E
Species Observed on the Property

Table E-2. Wildlife Species

Order/Family	Species Name	Common Name	Status[1]
Birds			
Accipitriformes			
Accipitridae	*Buteo swainsoni*	Swainson's hawk	ST
Charadriiformes			
Charadriidae	*Charadriidae vociferus*	killdeer	--
Columbiformes			
Columbidae	*Zenaida macroura*	mourning dove	--
Passeriformes			
Corvidae	*Aphelocoma californica*	California scrub jay	--
	Corvus brachyrhynchos	American crow	--
Fringillidae	*Haemorhous mexicanus*	house finch	--
Icteridae	*Euphagus cyanocephalus*	Brewer's blackbird	--
	Sturnella neglecta	western meadowlark	--
Mimidae	*Mimus polyglottos*	northern mockingbird	--
Passeridae	*Passer domesticus*	house sparrow	--
Passerelidae	*Zonotrichia leucophrys*	white-crowned sparrow	--
Tyrannidae	*Sayornis nigricans*	black phoebe	--
	Tyrannus verticalis	western kingbird	--
Piciformes			
Picidae	*Dryobates nuttallii*	Nuttall's woodpecker	--
Mammals			
Lagomorpha			
Leporidae	*Lepus californicus*	black-tailed jackrabbit	--

[1] Status for animal species is ESA/CESA listing or other sensitivity.

Attachment F

Site Photos

Photo 1: View of ruderal/disturbed habitat, looking west from project center.

Photo 2: View of ruderal/disturbed habitat, looking east from project center.

Photo 3: Pond and willow trees in the northwest corner of the site.

Photo 4: Debris pile along the southern boundary of the site.

Photo 5: Wetland swale in the southern portion of the site.

Photo 6: Wetland swale along the southern boundary of the site.