

Appendix BR-2

Special-Status Species Descriptions

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SPECIAL-STATUS PLANTS

[County- For brevity and ease of reading, it may be better to compile the following descriptions into Appendix B. Please advise if this is acceptable]

Based on the species table found in Appendix B of the Biological Resources Assessment (Appendix BR-1), the following seven special-status plant species have potential to occur in the Plan Area: Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*), Bogg's Lake hedge-hyssop (*Gratiola heterosepala*), legenere (*Legenere limosa*), Sacramento Orcutt grass, slender Orcutt grass, dwarf downingia (*Downingia pusilla*) and Sanford's arrowhead (*Sagittaria sanfordii*). Botanical surveys for special-status plant species were conducted on the Applicant-owned properties in May and June of 2014, and no populations of any special-status plant species were observed. However, because protocol-level surveys were not conducted over the entire Plan Area, the most recent surveys were conducted during a drought year and reference sites were not visited to confirm successful establishment of target species that year, and the surveys are outdated according to agency standards, the potential for these species to occur cannot be ruled out. Legenere has been documented previously on the non-participating properties at the border of the Mather Preserve (CNDDDB 2018). Also, most of the Plan Area is within the Mather Core Area and is designated by the USFWS as critical habitat for slender orcutt grass and Sacramento orcutt grass.

AHART'S DWARF RUSH

Ahart's dwarf rush is an annual herb that occurs primarily on the margins of vernal pools in areas that are sparsely vegetated. The vernal pools onsite represent potential habitat for this species. There are 13 reported occurrences of this species within California, one within 5 miles of the site. There are several occurrences of this species in the vicinity including at the Mather Preserve. Based on the presence of suitable habitat and documented occurrences in the vicinity, this species has potential to occur in the Plan Area.

BOGG'S LAKE HEDGE-HYSSOP

Bogg's Lake hedge-hyssop is an annual herb that occurs in vernal pools primarily on saturated clay (adobe) soils and, at the Bogg's Lake Preserve, on shallow lake margins (CNPS 2013). The vernal pools onsite represent potential habitat for this species. There are 93 reported occurrences of this species within California, one of which is within 5 miles of the site. The nearest occurrence is less than 0.25-mile northeast of the site boundary on the Mather Preserve. Based on the presence of suitable habitat and documented occurrences in the vicinity, this species has potential to occur onsite.

DWARF DOWNINGIA

Dwarf downingia is an annual herb that occurs in vernal pools and swales. The vernal pools onsite represent potential habitat for this species. There are 127 reported

occurrences of this species within California, 11 of which are within Sacramento County and nine of which are within the nine-quad area containing and surrounding the Plan Area (CDFW 2018). There are no reported occurrences of this species within 5 miles of the site; however, the Plan Area is within the species' known range and the presence of suitable habitat creates potential for this species to occur.

LEGENERE

Legenere is an annual herb that occurs in vernal pools and swales, seasonal marshes, artificial ponds, floodplains of intermittent streams, and other seasonally inundated habitats (CNPS 2013). The vernal pools and seasonal wetlands on site represent potential habitat for this species. There are 79 reported occurrences of this species within California, six of which are within 5 miles of the Plan Area. The nearest occurrence borders the Plan Area to the north, at the Mather Preserve. Based on the presence of suitable habitat and documented occurrences in the vicinity, this species has potential to occur on site.

SACRAMENTO AND SLENDER ORCUTT GRASSES

Though Sacramento and slender Orcutt grasses have been documented within 5 miles of the Plan Area, surveys for these species in 2006 and 2007 produced negative results. Although a portion of the Plan Area is within critical habitat for these two species, neither of these species has ever been observed within the Plan Area.

SANFORD'S ARROWHEAD

Sanford's arrowhead occurs in emergent marsh habitats, including habitats which are modified or human-made. Sanford's arrowhead is designated as a federal species of special concern and is listed by the California Native Plant Society's Inventory of Rare and Endangered Plants as category 1B.2 (i.e., rare throughout its range in California with a moderate probability of going extinct). Sanford's arrowhead is fairly common in the Sacramento area. The nearest occurrence is approximately 2 miles west of the Plan Area. Potential suitable marsh habitats include the margins of rivers, streams, ponds, reservoirs, irrigation and drainage canals and ditches, and stock-ponds. Based on the presence of suitable habitat and documented occurrences in the vicinity, this species has a high potential to occur on site.

SPECIAL-STATUS ANIMALS

BIRDS

Based on the species table found in Appendix B of the Biological Resources Assessment (Appendix BR-1), the following special-status avian species are identified as having potential to occur on or near the Plan Area: Western burrowing owl (*Athene cunicularia*), tricolored blackbird (*Agelaius tricolor*), Swainson's hawk (*Buteo swainsoni*), loggerhead shrike (*Lanius ludovicianus*), white-tailed kite (*Elanus leucurus*), grasshopper sparrow (*Ammodramus savannarum*), Cooper's Hawk (*Accipiter cooperi*), and song sparrow (*Melospiza melodia*)(Modesto population). The section also addresses nesting raptors in general, which are afforded minimum protections pursuant to the Fish and Game code regardless of status.

SWAINSON'S HAWK

The Swainson's hawk is listed as a Threatened species by the State of California and is a candidate for federal listing as threatened or endangered. It is a migratory raptor typically nesting in or near valley floor riparian habitats during spring and summer months. Swainson's hawks were once common throughout the state, but various habitat changes, including the loss of nesting habitat (trees) and the loss of foraging habitat through the conversion of native Central Valley grasslands to certain incompatible agricultural and urban uses has caused an estimated 90 percent decline in their population.

Swainson's hawks feed primarily upon small mammals, birds, and insects. Their typical foraging habitat includes native grasslands, alfalfa and other hay crops that provide suitable habitat for small mammals. Certain other row crops and open habitats also provide some foraging habitat. The availability of productive foraging habitat near a Swainson's hawk's nest site is a critical requirement for nesting and fledgling success. In central California, about 85 percent of Swainson's hawk nests are within riparian forest or remnant riparian trees. CEQA analysis of impacts to Swainson's hawks consists of separate analyses of impacts to nesting habitat and foraging habitat.

Swainson's hawks are known to forage up to 18 miles from their nest site; however, that is the extreme range of one individual bird's daily movement. It is more common for a Swainson's hawk to forage within 10 miles of its nest site. Therefore, it is generally accepted and CDFW recommends evaluating projects for foraging habitat impacts when they are within 10 miles of a known nest site.

Although this species has not been observed onsite, there is a high potential for it to occur in the Plan Area. According to the most recent data available on CNDDDB, there are several active nests within 5 to 10 miles of the site and the closest occurrence is within 2 miles. The trees that surround the irrigation pond and are adjacent to the Plan Area represent potential nesting habitat, while the Plan Area also provides foraging habitat for the hawk.

TRICOLORED BLACKBIRD

The Fish and Game Commission voted to list the tricolored blackbird as threatened on April 19, 2018 and the official Notice of Findings was published on September 14, 2018 (OAL 2018); however, the species remains as a candidate until it is added to Title 14 Section 670.5b. According to CDFW's life history account for the tricolored blackbird, the species is mostly a resident in California, and common locally throughout the Central Valley. The species is a colonial nester that breeds near fresh water, preferably in emergent wetland with tall, dense cattails or tules, but also in thickets of willow, blackberry, wild rose, and tall herbs. Nesting colonies usually support a minimum of 50 pairs. The species feeds in grassland and cropland habitats. The usual breeding season is mid-April into late-July.

According to the CNDDDB, there is a record of this species in the Plan Area. The occurrence record states there were 15 adults observed in the colony, which is small, but the colony was successfully breeding amongst blackberry bushes on the site in 1994. Foraging tricolored blackbirds were also observed during the June 22, 2017 site

visit to the Plan Area. The site includes a variety of wetland habitats, including habitats that support reeds, blackberries, and other plants that provide suitable nesting habitat. The entire Plan Area provides suitable foraging habitat.

WHITE-TAILED KITE

According to the CDFW life history account for the white-tailed kite, the species is a resident in coastal and valley lowlands and is rarely found away from agricultural areas. The species forages in undisturbed grasslands, meadows, farmlands, and emergent wetlands. Groves of dense, broad-leafed deciduous trees are used for nesting and roosting. The species is listed as fully protected due to nesting impacts. The grassland habitat provides foraging habitat to the white-tailed Kite. During several site visits to the Plan Area, white-tailed kites were observed foraging in the annual grassland areas; however, no nest sites for this species were observed. There is high potential for this species to nest in the Plan Area.

WESTERN BURROWING OWL

Western burrowing owl is a California species of special concern that can be found in annual and perennial grasslands, deserts, and arid scrublands characterized by low-growing vegetation (Zarn 1974). Suitable owl habitat may also include trees and shrubs if the canopy covers less than 30 percent of the ground surface. Burrows are the essential component of burrowing owl habitat. Both natural and artificial burrows provide protection, shelter, and nesting habitat for burrowing owls (Henny and Blus 1981). Burrowing owls typically use burrows made by fossorial mammals, such as ground squirrels or badgers, but also use artificial structures such as cement culverts; wood debris piles; or openings beneath cement or asphalt pavement.

Burrowing owls may use a site for breeding, wintering, foraging, and/or migration stopovers. Breeding takes place from February 1 to August 31 and wintering takes place from September 1 to January 31. Occupancy of suitable burrowing owl habitat can be verified at a site by detecting a burrowing owl, its molted feathers, cast pellets, prey remains, eggshell fragments, or excrement at or near a burrow entrance. Burrowing owls exhibit high site fidelity, reusing burrows year after year or year-round (Rich 1984, Feeney 1992).

The CNDDDB documents burrowing owl sightings outside of the Plan Area, but within 0.5 mile. The occurrence record details multiple site visits which documented 16 active burrows in 1991. Given that burrowing owls tend to display high nest fidelity, it should be assumed that this burrow area is still active. The Plan Area contains many rodent and other burrows that could be suitable for nesting or wintering.

GRASSHOPPER SPARROW

Grasshopper sparrow is a California species of special concern and, according to the CDFW life history account, the species is an uncommon and local summer resident and breeder in foothills and lowlands, arriving in California from March to May and migrating south in August or September. The species occurs in dry, dense grasslands, especially those with a variety of grasses and tall forbs and scattered shrubs for singing perches.

Nests are built of grasses and forbs in a slight depression on the ground, hidden at the base of an overhanging clump of grasses or forbs.

Grasshopper sparrow is known to occur in southern half of Sacramento County. The CNDDDB documents one occurrence of this species between 5 and 10 miles from the Plan Area. In 2007, two adults were documented north of Latrobe Road and east of Scott Road in the Deer Creek Hills Unit of the Prairie City State Vehicle Restoration Area.

LOGGERHEAD SHRIKE

According to the CDFW life history account for the loggerhead shrike, the species breeds mainly in shrublands or open woodlands with a fair amount of grass cover and areas of bare ground. They require tall shrubs or trees (they also use fences or power lines) for hunting perches, territorial advertisement, and pair maintenance; open areas of short grasses, forbs, or bare ground for hunting; and large shrubs or trees for nest placement. They also need impaling sites for prey manipulation or storage, which can include sharp, thorny, or multi-stemmed plants and barbed-wire fences. The breeding season for this species begins in mid-March to early-April and extends to July. The species is listed as a California species of special concern due to loss of nesting habitat. Although the loggerhead shrike has not been observed on site, the trees surrounding the pond, the adjacent pasture, and annual grassland all provide potential nesting and foraging habitat.

SONG SPARROW MODESTO POPULATION

Modesto song sparrow is endemic to California, where it resides only in the north-central portion of the Central Valley. Highest densities occur in the Butte Sink area of the Sacramento Valley and in the Sacramento-San Joaquin River Delta. It is a year-round resident that breeds from mid-March to early-August. The ecological requirements for this species are largely undescribed. Grinnell and Miller noted this population's affinity for emergent freshwater marshes dominated by tules and cattails, as well as riparian willow thickets. These song sparrows also nest in riparian forest of valley oak with a sufficient understory of blackberry along vegetated irrigation canals and levees, and in recently planted valley oak restoration sites. Modesto song sparrow is listed as a California species of special concern due to habitat loss, fragmentation, and degradation. Modesto song sparrow has been observed onsite (Foothill Associates 2015) and the freshwater emergent vegetation within the Plan Area provides potential nesting habitat for this species.

COOPER'S HAWK

Cooper's hawk is a resident of the Central Valley and nests in a variety of woodland habitats but is most often found nesting in oak woodlands (County of Sacramento et al. 2018). Cooper's hawk is listed as a watch list species by CDFW and is covered by the SSHCP. The CNDDDB records Cooper's hawk occurrences within 5 miles of the Plan Area; however, the species is not known to occur within the Plan Area.

OTHER RAPTORS

Raptors observed in flight over the Plan Area included American kestrel (*Falco sparverius*), northern harrier (*Circus cyaneus*), red-tailed hawk (*Buteo jamaicensis*),

turkey vulture (*Cathartes aura*), great-horned owl (*Bubo virginianus*), and barn owl (*Tyto alba*). Raptors, in general, build nests in large mature trees; though there are some ground-nesting species such as northern harrier and burrowing owl (refer to species-specific discussions above). Although no nests were observed, raptors were observed foraging and roosting onsite and there are many large trees on the site that are suitable for nesting raptors.

MAMMALS

PALLID BAT

Pallid bats, a California species of special concern, are not known to occur within the Plan Area but are known to occur in southern Sacramento County. The species typically uses caves, mines, rock crevices, hollow trees and buildings for roost sites (CWHR 2000). Foraging habitat for pallid bats consists of grasslands and open woodlands, and such habitats are found within the Plan Area.

WESTERN RED BAT

Western Red Bat is known to roost in the leaves of large shrubs and trees. Roosts are most often located in trees that are located near streams, grasslands, pastures, or agricultural areas. The species may also roost in mature trees within urban settings. The species is not known to occur within the Plan Area but is known to occur in southern Sacramento County (County of Sacramento et al. 2018).

AMERICAN BADGER

According to the CDFW life history account for the species, the American badger (*Taxidea taxus*) is an uncommon, permanent resident which is most often found in drier open stages of shrub, forest, and herbaceous habitats. Badgers dig burrows in soils which are easily crumbled and broken down, and regularly dig new burrows to use for cover during the night. Badgers may exhibit some torpor in winter, but do not hibernate. Home ranges vary by geography and season but are generally quite large (up to 1,500 acres for males). Badgers mate in the early summer and fall, and young are born in March and April; females bear and rear young within burrows. Badgers prey on small mammals, reptiles, and insects. The conversion of suitable habitat to either urban or agricultural uses has contributed to the decline of the species, as has the usage of rodenticides and other “pest” control mechanisms – which has resulted in direct mortality due to ingestion and also a substantial reduction in the prey base. The American badger is state-listed as a Species of Special Concern. There is no published regulatory guidance for the treatment of this species.

Although no American badgers have been observed on the Plan Area, they have historically been observed in the general area, which indicates that the area contains suitable soils for the creation of dens.

REPTILES AND AMPHIBIANS

WESTERN POND TURTLE

According to the CDFW life history account for the species, the western pond turtle (*Emys marmorata*), is an aquatic turtle that usually leaves the aquatic site to reproduce, to aestivate, or to overwinter. Western pond turtles require some slack- or slow-water

aquatic habitat. High-gradient streams with minimal cover or basking habitat are not suitable. In pond environments, the species typically only leaves the water to reproduce, whereas in stream environments, the turtles more commonly leave the water to aestivate or overwinter, in addition to leaving for reproduction. Turtles leave the water to overwinter in October or November, and typically become active in March or April. Mating typically occurs in late April or early May but may occur year-round. Most egg-laying occurs in May or June but may occur as early as April or as late as August. The hatchlings remain in the nest over the winter and emerge in the spring. Suitable nesting locations have dry soils (usually in a substrate with a high clay or silt fraction) on a slope that is unshaded and may be at least partially south-facing. The nest site can be up to 1,300 feet from the aquatic habitat, but it is more typical for the nest to be within 650 feet of aquatic habitat. The life history account conservatively recommends a buffer of 1,650 feet to ensure that neither adults nor nests will be disturbed.

This species has not been observed on the Applicant-owned properties during any of Foothill Associates' previous visits. Many of the wetlands on the site dry out seasonally and are not suitable for the species. The primary suitable habitat areas include the perennial marsh areas and the pond on the southern side of the Plan Area, but the species could nest in upland habitats up to several hundred feet from these aquatic habitats; therefore, this species could be present in the Plan Area.

WESTERN SPADEFOOT

The western spadefoot (*Spea hammondi*) breeds in shallow, seasonal wetlands in valley and foothill habitats such as grasslands, open chaparral, sage scrubland, short-grass plains, and pine woodlands. Spadefoot occur in both grazed and ungrazed habitat. Adult spadefoot occupy burrows up to 3 feet in depth in upland habitat during dry periods to avoid desiccation. Individuals may remain in these burrows for eight to nine months. Most surface activity is nocturnal. Spadefoot leave their upland burrows for wetlands during the breeding season, which lasts from January to August, depending on rainfall. It appears that vernal pools and other temporary wetlands may be optimal for breeding due to the absence or reduced abundance of both native and nonnative predators (e.g., bullfrogs, fish, and crawfish), many of which require more permanent water sources. Current research on amphibian conservation suggests that typical upland habitat utilization falls within 1,200 feet of aquatic habitats (USFWS 2005).

The Plan Area contains vernal pools; therefore, suitable habitat for western spadefoot is present in the Plan Area.

INVERTEBRATES

VERNAL POOL INVERTEBRATES

There are a variety of invertebrate species that rely on vernal pools and similar seasonal wetland habitat. Special-status invertebrate species associated with vernal pools in the region include midvalley fairy shrimp (*Branchinecta mesovallensis*), vernal pool fairy shrimp, vernal pool tadpole shrimp, and Ricksecker's water scavenger beetle (*Hydrochara rickseckeri*). All of these species spend their life cycle within vernal pools. None of these species are readily observed through casual observation. Thus, lack of recorded sightings is not evidence to conclude that the species is absent. Where

suitable habitat is present, these species should be assumed present unless protocol-level surveys have found them to be absent.

According to the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (vernal pool recovery plan) (USFWS 2005), midvalley fairy shrimp, vernal pool fairy shrimp, and vernal pool tadpole shrimp use the same habitat types. These species feed on algae, bacteria, protozoa, rotifers and bits of detritus. The females carry their eggs in a ventral brood sac until they are dropped to the bottom of the pool, or the mother dies and sinks. At the end of the rainy season, as occupied vernal pools dry up, the eggs, referred to as cysts, remain in a dormant stage in the dried pool until the rains of the next season, or other environmental stimuli cause them to hatch. Cysts will hatch when the pool refills, although not all cysts present will hatch during the following rainy season and they may remain dormant in the soil for multiple seasons.

The majority of the Plan Area is located within designated critical habitat for both vernal pool fairy shrimp and vernal pool tadpole shrimp. The Plan Area contains vernal pools; which represent potential habitat for these species. Wet season surveys were performed during 2009-2010 on the Applicant-owned property of the Plan Area (Appendix E of Appendix BR-1) and indicated that both species are present in the Plan Area.

VALLEY ELDERBERRY LONGHORN BEETLE

The valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) is completely dependent on its host plant, elderberry (*Sambucus* spp.), which is a common component of the remaining riparian forests and adjacent upland habitats of the Central Valley. The adult-stage of the species is short-lived, so the majority of the species' life is spent in larval form within the stem of an elderberry plant. Adults emerge from late-March through June, at around the same time as the elderberry produces flowers, producing an exit hole in the stem of the plant, which is often the only exterior evidence of the plant's use by the beetle. The species is federally-listed as threatened.

Although no elderberry shrubs were observed on the Applicant-owned property, there is potential for them to occur on the non-participating properties.