

**BIOLOGICAL RESOURCES ASSESSMENT
FOR THE**

**±1,095-ACRE NEWBRIDGE SPECIFIC PLAN
STUDY AREA**

SACRAMENTO COUNTY, CALIFORNIA



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INTRODUCTION

Project Location

Salix Consulting, Inc. (Salix) conducted a biological resource assessment for the approximate 1,095-acre NewBridge Specific Plan (NSP) study area in Sacramento County, California. The property is located in the eastern portion of Sacramento County, southwest of the intersection of Sunrise and Kiefer boulevards and north of the Jackson Highway (Figures 1 and 2).

East Sacramento Ranch, LLC, owns and controls the northern portion of the study area. The East Sacramento Ranch (ESR) Project area constitutes 810 acres of the larger 1,095.3-acre NSP, as shown on Figure 2. The remaining 285 acres are owned by Vulcan Materials, Bureau of Reclamation (Folsom South Canal), and agricultural-residential owners.

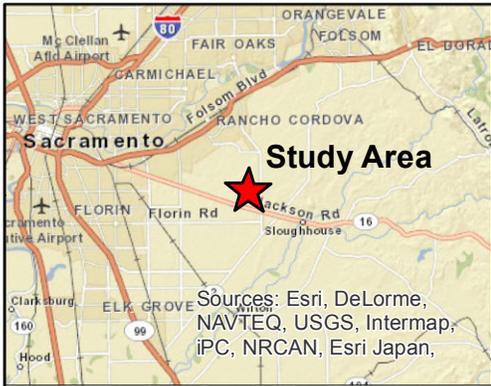
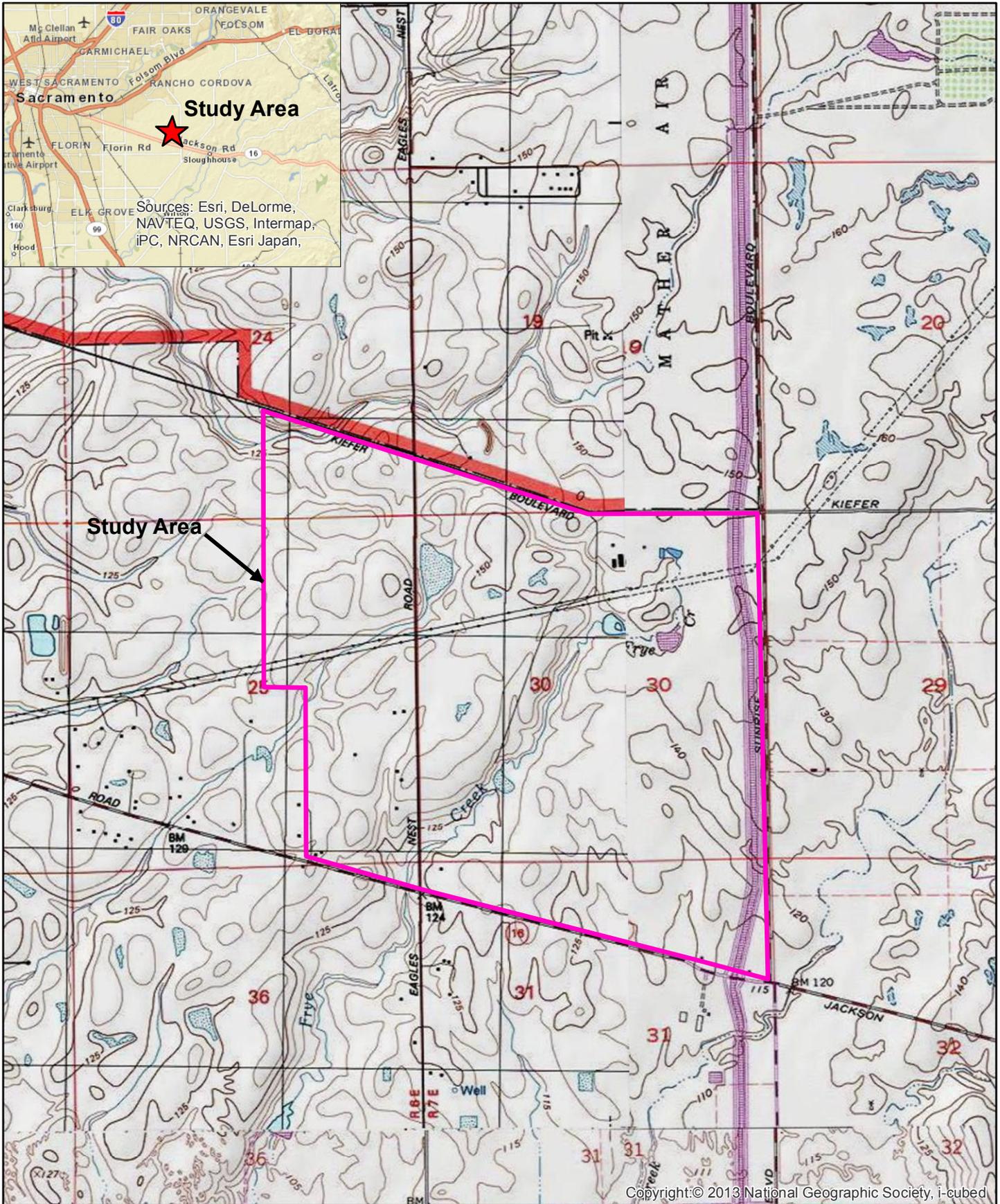
The study area is located in portions of Sections 19, 24, 25, and 30 in Township 8 north and Ranges 6 and 7 east on the Carmichael, CA and Buffalo Creek, CA 7 ½ minute USGS quadrangles. The latitude and longitude of the approximate center of the site are 38.52005° north and 121.25515° west.

Setting

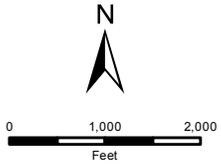
The study area is in the gently rolling to almost flat portion of the southern Sacramento Valley at elevations between 126 and 150 feet above sea level. Most of the project site contains non-native annual grassland. Past disking and other surface disturbances are readily seen on the aerials, but are less obvious in the field. Two creeks draining to the west and southwest occur in the western and central portions of the site, respectively. The drainage in the northwestern portion of the site is a tributary to Morrison Creek. Frye Creek drains much of the central portion of the site, and then flows off-site to Laguna Creek, a tributary to Morrison Creek. The former Mather Air Force Base is located north of the site and Kiefer Boulevard.

An existing rendering plant and associated offices, buildings, and parking areas occur in the northeastern portion of the site, just south of Kiefer Boulevard and west of the Folsom South Canal. Four industrial and wastewater ponds are located to the east and south of the existing rendering plant and are associated with its industrial use. These ponds function as evaporation ponds as well as catch basins, in case of spills on site. These features are managed as a part of the daily operations of the rendering facility.

The Folsom South Canal is located on the eastern edge of the NSP area within the study area. An approximate 105-acre area, which is comprised of

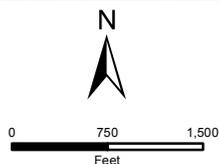
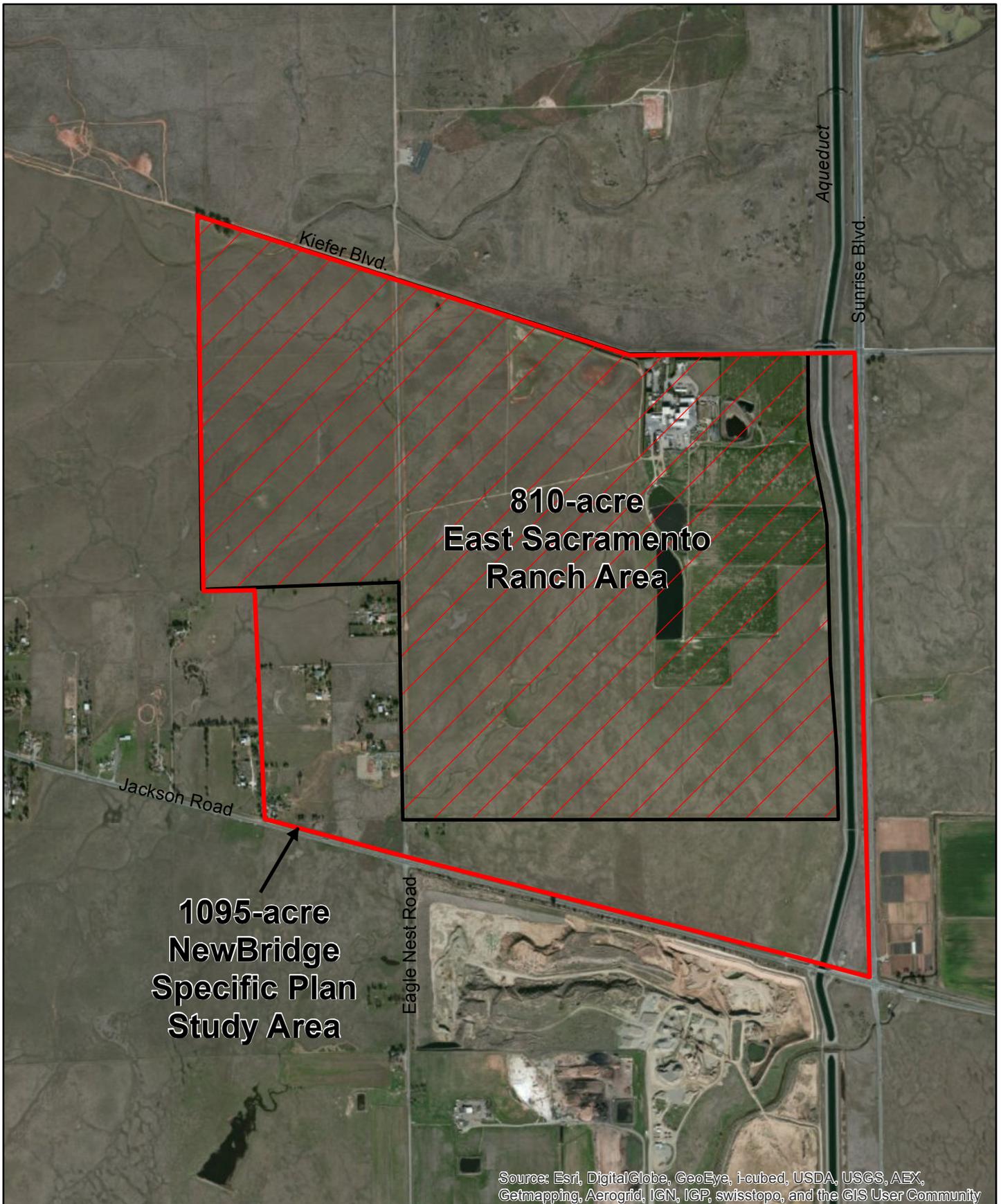


Study Area



Source Maps: USGS Topographic Map, Carmichael (1980) and Buffalo Creek (1980), CA Quadrangle, 1:24,000

Figure 1
VICINITY MAP
 NewBridge Specific Plan
 Sacramento County, CA



2012 Aerial Photo

Figure 2

AERIAL PHOTO
NewBridge Specific Plan
 Sacramento County, CA

cemeteries and rural residences, is located in the southwestern portion of the study area. High voltage electrical lines traverse the northern portion of the site in a northeast to southwest direction. The Folsom South Canal and parallel bike trail are located adjacent to Sunrise Boulevard along the eastern edge of the site. Sacramento Municipal Utility District (SMUD) has a small electric facility in the southeast corner of the site adjacent to the Folsom South Canal.

The approximate 200 acres west of Eagles Nest Road was designated as Critical Habitat by the U.S. Fish and Wildlife Service (USFWS) in 2006 for four species: vernal pool fairy shrimp, vernal pool tadpole shrimp, slender Orcutt grass, and Sacramento Orcutt grass. The USFWS published the Recovery Plan for Vernal Pool Ecosystems in California and Southern Oregon in 2005 which identifies larger Vernal Pool Regions throughout California that are based on species occurrence, vernal pool habitat, watershed boundaries and topographic features. Core areas were then identified within each Vernal Pool Region where recovery actions would be targeted. The study area is located within the "Southeastern Sacramento Valley Vernal Pool Region" in the "Mather core area" which was given a "Zone 1" ranking in the Recovery Plan, which generally specifies protection of 95 percent of suitable habitat throughout the core area.

Proposed Project Description

The proposed mixed-use project includes 3,075 residential units; commercial, office, and mixed uses; and parks, open space, and public uses. Approximately 331 acres would be preserved as Open Space. No development is planned for the approximate 105 acre area in the southwest corner of the NSP, and it will retain its agricultural zoning designation (Figure 3).

Objectives of Biological Resource Assessment

The purpose of this Biological Resource Assessment for the study area is to:

- Identify and describe the biological communities present in the study area.
- Record plant and animal species observed in the study area.
- Evaluate and identify sensitive resources and special-status plant and animal species that could be affected by project activities.
- Provide conclusions and recommendations.

METHODS

Literature Review

Many informational resources were used in this assessment including aerial photos, and topographic data. Geological information was taken from the Geologic Map of California, Sacramento Sheet (California Department of Conservation 1987). Soil



Figure 3

LAND USE PLAN

NewBridge Specific Plan

Sacramento County, CA

information was obtained from the NRCS online service at <http://websoilsurvey.nrcs.usda.gov> for Sacramento County.

Several publications were reviewed to provide information on life history, habitat requirements, distribution, and conservation status of regionally occurring animal species. They include published books, field guides, and the California Wildlife Habitats Relationships Program. These are listed in the References section of this document.

Special-Status Species Database Queries

Salix queried the California Natural Diversity Data Base (CNDDDB) for location records for special-status species known to occur in the region surrounding the study area. Quadrangles included in the query were Rio Linda, Citrus Heights, Folsom, Clarksville, Sacramento East, Carmichael, Buffalo Creek, Folsom Southeast, Florin, Elk Grove, Sloughhouse, and Carbondale. Salix biologists also reviewed the special-status species lists for the Carmichael and Buffalo Creek USGS quadrangles and Sacramento County created by the U.S. Fish and Wildlife Service (USFWS). The California Native Plant Society (CNPS) Inventory was checked for special-status plants occurring in the area.

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 (including candidates and species proposed for listing),
- Listed as endangered or threatened under the California Endangered Species Act (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 Concern by the California Department of Fish and Wildlife (CDFW), or
- Occurring on List 1 or 2 maintained by the CNPS.

Field Surveys

Many biological field surveys to assess plants and wildlife have been conducted within the ESR portion of the study area from 2003 to 2012 to assess habitat conditions and determine the potential for occurrence of special-status plant and wildlife species. Surveys consisted of walking the site, recording notes of species observed or their respective signs (nests, burrows, tracks, scat), and assessing habitat conditions.

Plants

Rare plant surveys were conducted for special-status plants in the spring of 2003 and 2010 by North Fork Associates, Inc. (NFA) and in 2012 by Salix. No state or federally-listed plant species were found within the ESR portion of the study area, however, one CNPS Rank 1B species, *Legenere limosa*, was observed in two vernal pools in the study area. Appendix A is a list of plants observed during the plant surveys.

Wildlife

Wildlife surveys were conducted in the spring of 2010 by NFA to determine the potential for special-status species to occur within the ESR portion of the study area. No state or federally-listed plant species were found within the surveyed portion of the study area. Appendix B is a list of wildlife observed during the wildlife surveys.

Water Resources

NFA produced a Wetland Delineation Map for the ±810-Acre ESR portion of the study area on January 17, 2011 (Figure 4), which was verified by the Corps of Engineers on February 14, 2011. The remaining 285 acres in the study area have not been delineated in the field, but waters of the U.S. have been mapped by aerial photograph interpretation.

Limitations of the Assessment

Targeted surveys for federal and state listed wildlife species, including federally-listed vernal pool crustaceans, were not conducted as part of this study.

SURVEY AND LITERATURE SEARCH RESULTS

Geology and Soils

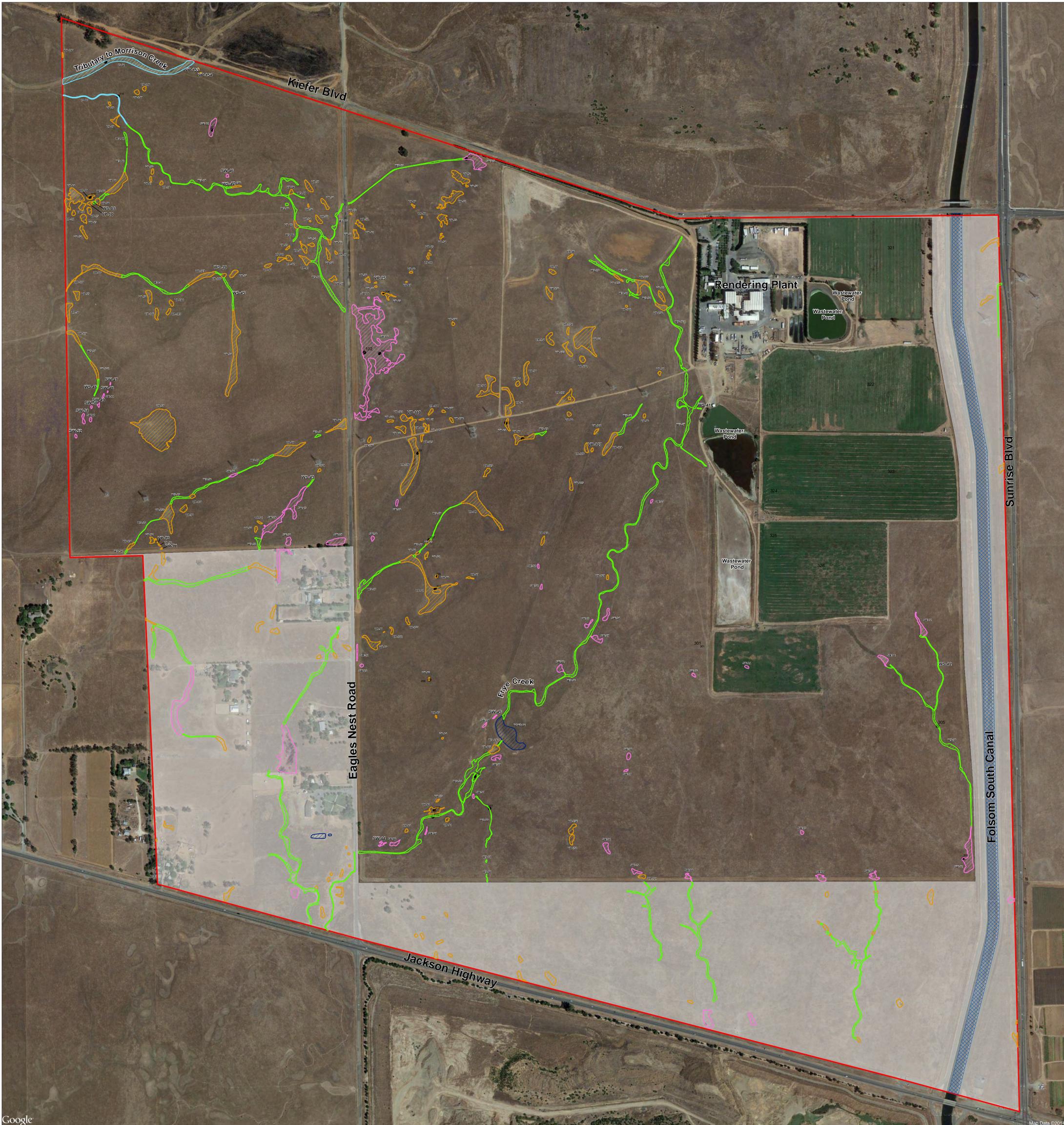
The Geologic Map of California, Sacramento Sheet (1:250,000) shows that the entire NewBridge study area is underlain by Quaternary non-marine sediments that are part of the Laguna Formation. Although this formation often supports vernal pools, it is not composed of ultramafic rock, which is known to support a suite of soil-specific special status species.

Seven soil units have been mapped on the study site (Figure 5):

- Fiddyment fine sandy loam, 1 to 8 percent slopes;
- Hedge loam, 0 to 2 percent slopes;
- Red Bluff loam, 0 to 2 percent slopes, and 2 to 5 percent slopes;
- Red Bluff-Redding complex, 0 to 5 percent slopes;
- Red Bluff-Xerarents complex, 0 to 2 percent slopes; and
- Redding gravelly loam, 0 to 8 percent slopes.

All soils mapped on the site are Alfisols, which are well developed soil with more clay in the B horizon than in the A horizon. Besides having a dense clay layer, the Fiddyment, Hedge, and Redding soils have a duripan at varying depths. Red Bluff soils are relatively deep and lack both a dense clay layer and a duripan.

Fiddyment soils occur in the southeastern portion of the property to the east of Frye Creek. Hedge soils occur in the lower Frye Creek drainage and appear to occupy the creek channel. The rendering plant was built on the Red Bluff-Xerarents complex. The remainder of the site consists of Red Bluff and Redding soils. Red Bluff soils are relatively well drained and generally are upland areas without wetlands. Vernal pools, swales, and other wetlands occur primarily on the areas where the Redding soils predominate.



Google Map Data ©2014

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WATERS OF THE UNITED STATES East Sacramento Ranch Acreage (Corps Verified)	
WETLANDS	ACREAGE
Vernal Pool (VP)	11.19
Seasonal Wetland (SW)	4.65
Wetland Swale (WS)	4.69
OTHER WATERS	
Intermittent Stream (IS)	1.04
Pond	0.66
TOTAL	22.23

WATERS OF THE UNITED STATES Remaining Portion of Study Area (Not Verified/Photo Interpretation)	
WETLANDS	ACREAGE
Vernal Pool (VP)	1.7
Seasonal Wetland (SW)	1.9
Wetland Swale (WS)	3.0
OTHER WATERS	
Canal	13.4
Pond	0.1
TOTAL	20.1

Figure 4

WETLAND DELINEATION MAP

NewBridge Specific Plan

Sacramento County, California
 Revised - October 15, 2013

DELINEATORS: J. Glazner, P. Britton, B. Anderson
 DATE OF FIELDWORK: Jan, Mar, Apr, May 2003,
 Oct 2008, & May 2009

USACE REGULATORY FILE#: 200300669
 VERIFIED BY: K. Bell & M. Finan
 DATE OF FIELD VERIFICATION: May 21, 2009

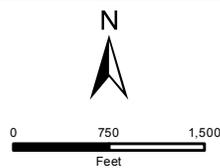
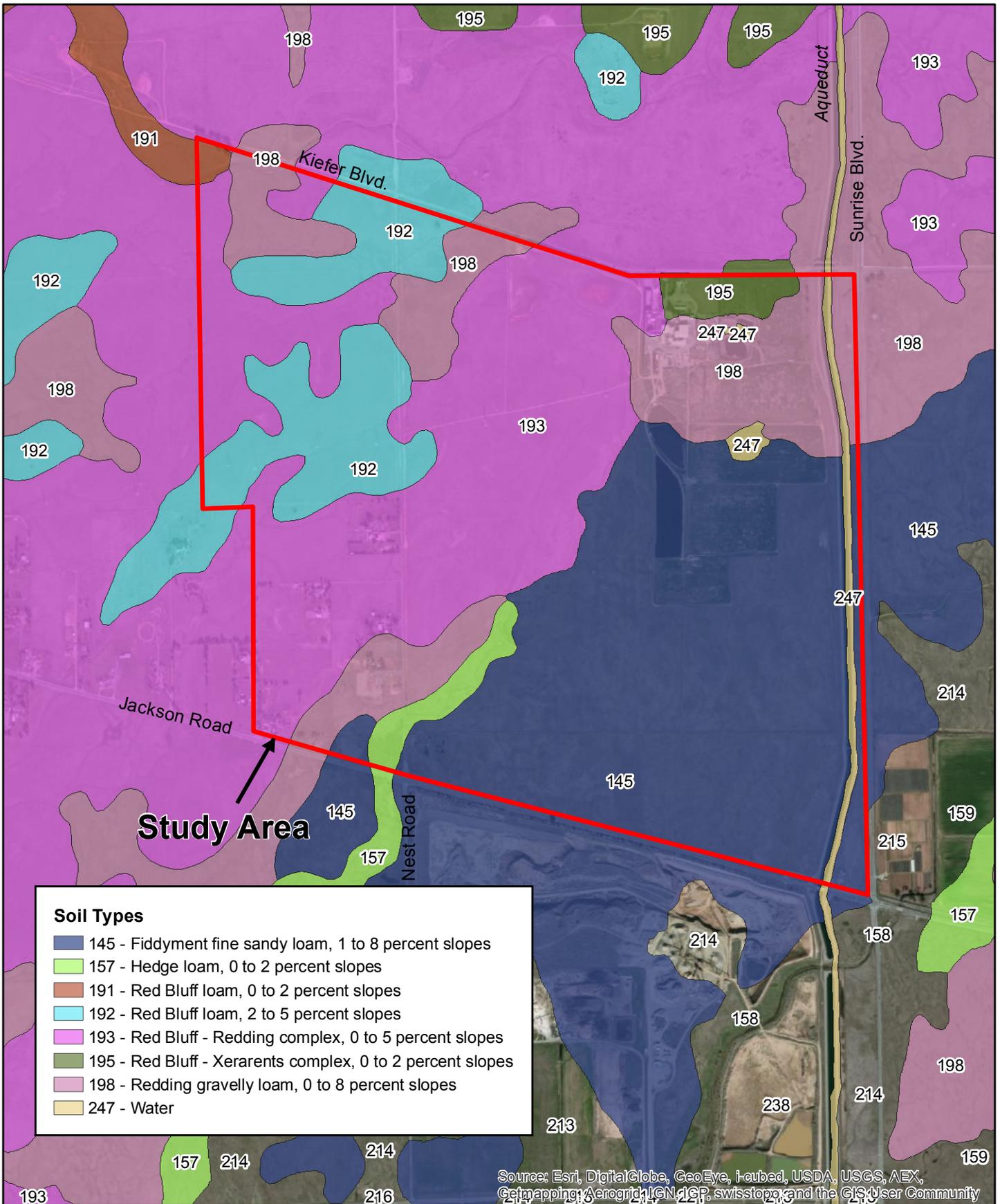
NOTES: 1. T 08N, R 06E S 24&25, T 08N, R 07E, S 19&30 of
 Carmichael & Buffalo Creek, CA, USGS 7.5 minute
 topographic quadrangles
 2. Aerial photo: May 2012

Study Area (±1095 acres)
 Wetland/Waters Data Point
 Upland Data Point
 Culvert

0 150 300
 Feet

N

Figure 4



Source Map: USDA, NRCS, Soil Survey, Sacramento County, California.

Figure 5
SOILS MAP
 NewBridge Specific Plan
 Sacramento County, CA

None of the soils on the site are derived from ultramafic rocks such as serpentinite or gabbro, which are known to support a number of special status species in the foothills to the east of the site. The absence of these soils precludes the possibility of soil-specific species.

Hydrology

The 1,095-acre study area encompasses several local watersheds. There are two large drainages within the NSP that are tributary to Morrison Creek. They appear as blue line streams on the USGS topographic maps. Both carry winter and spring flows but are dry when the rain stops and temperatures increase. The Morrison tributary which drains the northwest corner of the NSP is incised and has a coarse gravel to cobble bottom and floodplain. The central portion of the study area drains to a feature referred to as Frye Creek. Analysis of this drainage and the review of older photos indicate this feature no longer carried enough flow to warrant the label of “creek,” and is primarily now a vegetated swale.

Vernal pools, swales, and seasonal wetlands occur in scattered locations throughout the study area. Some pools are deep, and in high rainfall years hold water into the early summer. Others are relatively shallow and, in normal rainfall years, are dry by late-April or May during a year with normal rainfall.

Biological Communities

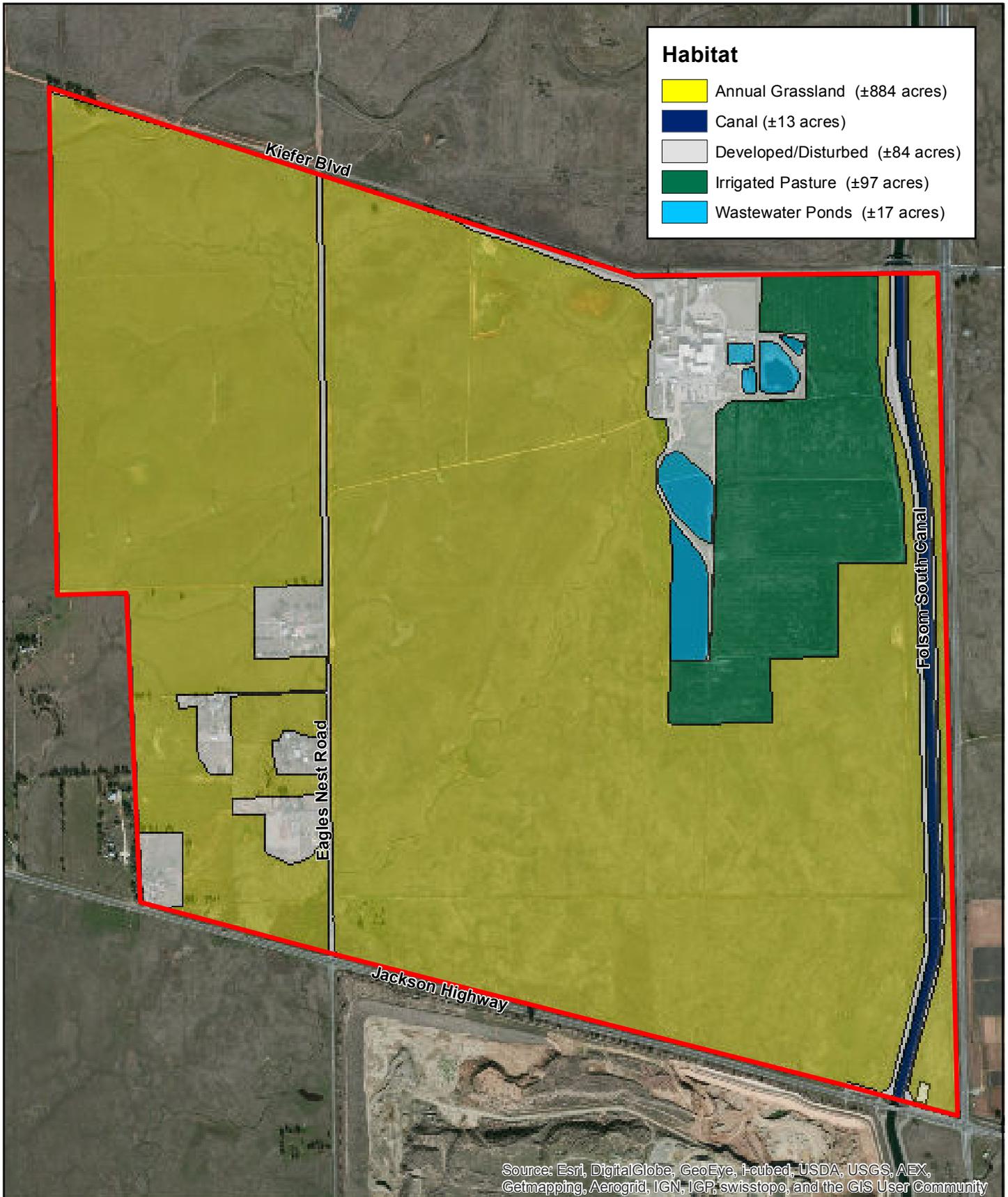
Five primary biological communities and habitat types were identified within the study area. They are listed in Table 1 below and illustrated in Figure 6. Figure(s) 7A and 7B provide site photos of the various habitats present. The various communities are described in the following paragraphs.

Table 1. Biological Communities within NewBridge Study Area

Biological Community	Estimated Acreage
Annual Grassland	± 884
Developed / Disturbed	± 84
Wastewater Ponds	± 17
Irrigated Pasture	± 97
Canal	± 13
Total	±1,095

Annual Grassland

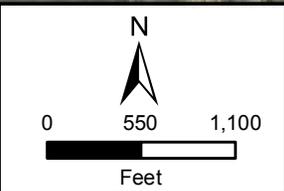
The annual grassland comprises approximately 884 acres of the NSP study area and is used for livestock grazing. The upland flora varies widely, likely as a result of soil differences. The southeast portion of the study area is dominated by non-native grasses and vetch (*Vicia sativa*). Ripgut brome (*Bromus diandrus*) and foxtail barley (*Hordeum murinum*) are particularly common and abundant grasses. By late spring, much of this area is covered with vetch. The western areas are on a different soil type and the flora is much less ruderal. Native bulbs such as blue dicks (*Dichelostemma capitatum*) and white brodiaea (*Triteleia hyacinthina*) are also common on this portion of the property. By summer, areas with more clay and poorer drainage are dominated by virgate tarweed (*Holocarpha virgata*) and spikeweed (*Centromadia fitchii*). The ±200



Habitat

- Annual Grassland (±884 acres)
- Canal (±13 acres)
- Developed/Disturbed (±84 acres)
- Irrigated Pasture (±97 acres)
- Wastewater Ponds (±17 acres)

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Study Area (±1095 acres)

2012 Aerial Photo

Figure 6
HABITAT MAP
NewBridge Specific Plan
 Sacramento County, CA



Deep vernal pool in northern project area (photo date 5-15-12).



Typical annual grassland habitat (photo date 5-18-12).



Irrigated pasture southeast of rendering facility (photo date 6-11-10).



Wastewater pond south of rendering facility (photo date 6-11-10).

acres of grassland west of Eagles Nest Road appears less disturbed than the rest of the site, and has been, perhaps, less affected by intensive grazing.

Vernal pools, swales, and seasonal wetlands occur throughout the annual grassland, particularly in the lower gradient areas. The differences between the various wetlands are often subtle and are discussed below in the waters of the United States section.

Two isolated oak trees occur just south of Kiefer Boulevard and east of Eagles Nest Road. Small clusters of walnuts, locust and eucalyptus grow in a few locations. Neither creek supports riparian vegetation. No woody species is present in the Morrison Creek tributary or the Frye Creek drainage.

Developed/Disturbed

There are two developed and disturbed areas within the NSP study area. The rendering plant located in the northeastern corner of the study area is approximately 60 acres. It includes several structures, parking areas, concrete flatwork and landscaping. There is a row of redwood trees along Kiefer Boulevard that was planted as a screen to the rendering plant. The southwestern corner of the NSP study area is comprised of a pet cemetery, a Muslim cemetery, rural residences, and open grassland. The disturbed portion of this area is approximately 24 acres. This area includes non-native landscaping.

Wastewater Ponds

Several industrial and wastewater ponds are located to the east and south of the existing rendering plant and are associated with its industrial use. These ponds function as evaporation ponds as well as catch basins, in case of spills on site. These features are completely managed and were built to support the rendering facility.

Irrigated Pasture

Approximately 97 acres in the northeast portion of the property is used to discharge wastewater from the rendering plant. As a result of irrigation, these areas support permanent pasture consisting of perennial pasture grasses and forbs that are used for year-round grazing.

Canal

The Folsom South Canal is a concrete-lined canal that is owned and operated by the U.S. Bureau of Reclamation. It runs along the eastern boundary of the NSP and occupies approximately 13 acres of the study area.

Wildlife

The northeastern and southwestern portions of the study area provide little habitat value for wildlife due to the presence of the rendering plant facilities and resulting absence of vegetative cover in many locations. However, large areas of open grassland and associated wetland areas in the southern, central, and western-most portions of the site provide seasonal and year-round habitat for local wildlife and wildlife from the region.

The few scattered trees located along the northwestern boundary and the southwestern corner provide potential roosting and nesting opportunities for raptors such as red-tailed hawk and white-tailed kite. The drainage swales, seasonal wetlands and vernal pools, and wastewater

ponds provide foraging habitat for a variety of waterfowl and wading birds. Open structures and buildings located around the rendering plant facilities provide potential roosting habitat for owls, such as barn owl and great horned owl. While no significant bat roosting activity or maternity colonies are expected to occur on site, some limited day roosting activity may occur in various open structures on a periodic basis.

Larger areas of open grassland, which encompass most of the study area, provide year-round foraging habitat for resident raptors including red-tailed hawk, and seasonal foraging habitat for migratory raptors that winter in the region, such as ferruginous hawk. Open grassland also provides nesting habitat for a variety of songbirds including western meadowlark and seasonal foraging areas for sparrows and other grassland species. Remnant exposed banks on Frye Creek provide potential habitat for burrowing owls.

The following are a sampling of the animals observed in association with annual grassland communities of the study area during the March and April 2010 field surveys: western meadowlark (*Sturnella neglecta*), western kingbird (*Tyrannus verticalis*), red-winged blackbird (*Agelaius phoeniceus*), Canada goose (*Branta Canadensis*), and black-tailed hare (*Lepus californicus*). Signs of coyote (*Canis latrans*), raccoon (*Procyon lotor*), Botta's pocket gopher (*Thomomys bottae*), California ground squirrel (*Spermophilus beecheyi*), and numerous other small rodents were also observed throughout relatively undisturbed areas of grassland located on site. During the field surveys, Swainson's hawks (*Buteo swainsoni*), white-tailed kites (*Elanus leucurus*), turkey vultures (*Cathartes aura*), red-tailed hawks (*Buteo jamaicensis*), and swallows (*Petrochelidon pyrrhonota*) were observed foraging or flying over the study area in various locations. In addition, a merlin (*Falco columbarius*) was observed foraging in the northwestern portion of the site during the March 2010 field survey. Other species observed near developed portions of the study area included mourning dove (*Zenaida macroura*), European starling (*Sturnus vulgaris*), and northern mockingbird (*Mimus polyglottos*). Though no burrowing owls (*Athene cunicularia*) were observed during any previous survey of the property prior to 2013, one was observed along Frye Creek on a site visit in April 2013.

A variety of birds were observed in and around the wastewater/industrial ponds located south of the active rendering plant during the March and April 2010 surveys including mallard (*Anas platyrhynchos*), cinnamon teal (*Anas cyanoptera*), great egret (*Ardea alba*), American coot (*Fulica Americana*), bufflehead (*Bucephala albeola*), black phoebe (*Sayornis nigricans*), and least sandpiper (*Calidris minutilla*). In addition, at least two western pond turtles (*Emys marmorata*) and one red-ear slider (*Pseudemys scripta*), a non-native species, were observed either basking along the shore or swimming in open water in the northern-most pond, located just south of the plant.

Vernal pools and seasonal wetland located on site contained a substantial amount of surface water at the time of the March 2010 site visit, but were nearly dry by the April site visit. Various species observed in and around the vernal pools and other seasonal wetlands of the site throughout the field surveys included Canada goose, killdeer (*Charadrius vociferous*), willet (*Catoptrophorus semipalmatus*), great egret, red-winged blackbird, mallard, and a racer (*Coluber constrictor*).

Lists of species observed during the March and April 2010 field surveys are provided in Appendix B.

Waters of the United States

Approximately 810 acres of the study area (ESR) was mapped and verified by the Corps in 2009. An additional ±285 acres of the study area were assessed through aerial photo interpretation in 2013. Six categories of waters of the United States have been mapped on the total study area of ±1,095 acres: vernal pool, seasonal wetland, wetland swale, intermittent stream, pond, and canal. Table 2 is an acreage summary of the various types. Figure 4 shows the location and extent of Waters of the U.S. throughout the study area.

Table 2. Waters of the United States within NewBridge Study Area

Type	Total Acreage in Study Area	East Sacramento Ranch Area (810 Acres)	Remaining Portion of Study Area (285 Acres)
Wetlands:			
Vernal Pool	12.9	11.2	1.7
Seasonal Wetland	6.6	4.7	1.9
Wetland Swale	7.7	4.7	3.0
<i>Wetland Subtotal</i>	27.2	20.6	6.6
Other Waters			
Intermittent Stream	1.0	1.0	0
Pond	0.8	0.7	0.1
Canal	13.4	0	13.4
<i>Other Waters Subtotal</i>	15.2	1.7	13.5
Total Waters of the U.S.	42.4	22.3	20.1

Wetlands

Vernal Pool

Vernal pools are depressional wetlands that support a mostly native flora. They fill with winter/spring rainfall and remain inundated for longer periods than the surrounding upland due to an impermeable or semi-permeable hardpan or duripan subsurface layer. These wetlands have a distinct flora composed primarily of native species adapted to alternating periods of inundation and desiccation. The vernal pool wetland type supports a variety of species, including popcornflower (*Plagiobothrys stipitatus* and *P. greenii*), downingia (*Downingia bicornuta* and *D. ornatissima*), buttercup (*Ranunculus bonariensis*), and annual hairgrass (*Deschampsia danthonioides*). Deeper pools have spikerush (*Eleocharis macrostachya*), aquatic buttercup (*Ranunculus aquatilis*), and water starwort (*Callitriche marginata*) and more abundant coyote thistle (*Eryngium vaseyi*).

Vernal pools are distributed throughout the grassland habitat within the study area, except for the southeast corner. Pools occur predominantly on the Redding soils and the Red Bluff-Redding complex. Many of the deepest pools occur on the relatively flat ridge between the Frye Creek drainage and Eagles Nest Road.

Seasonal Wetland

Seasonal wetlands form in very shallow depressions or as fringe wetlands along creeks. There is overlap in the characteristics of shallow vernal pools and shallow seasonal wetlands, so that it is sometimes difficult to distinguish between them. Seasonal wetlands often have a mix of vernal pool species and facultative species such as curly dock (*Rumex crispus*), Mediterranean barley (*Hordeum marinum*), and ryegrass (*Lolium multiflorum*). They tend to form in swales that have converted to wetlands in areas where the flow of water in the swale has been impeded. Several small seasonal wetlands occur along the southern property boundary.

The large seasonal wetland (SW-05) along Eagles Nest Road is the result of altered drainage (probably longer than fifteen years ago). USGS maps show this area to be a large temporary impoundment that, before 1980, may have been a large vernal pool or pond (USGS maps usually do not recognize small vernal pools). At one time, excess water from this area flowed southwest into the Elder Creek tributary. Today, however, SW-05 has been drained into a culvert under Eagles Nest Road, and the excess water flows northwest through swales and basins to the Morrison tributary. This seasonal wetland typically has a few inches of standing water during the rainy season. The majority of the wetland supports facultative species such as hairy hawkbit (*Leontodon saxatilis*), ryegrass, and Mediterranean barley, but the deeper portions support species indicative of vernal pools such as coyote thistle, Fremont's goldfields (*Lasthenia fremontii*), and popcornflower.

Wetland Swale

Wetland swales normally occur in undulating topographic lows on gently sloping land. Because the swales slope, water in them typically flows rather than stands during rainy periods. Water flows are not of sufficient duration or intensity to create scour marks in swales and thus, swales are vegetated. Within the Permit Area, swales often connect depressional features that function like vernal pools except that water usually flows through them during rainy periods. Although swales and basins share some of the same species, the overall flora of the two are somewhat different. Because the basins are often inundated deeper and longer, they usually have obligate plant species, whereas the swales often lack obligate species and are dominated by facultative species.

A lengthy wetland swale system flows north to southwest across the property and has been labeled on the USGS map as Frye Creek. Despite being labeled as a creek, it is mostly vegetated with wetland plant species and lacks an active rocky bottom and an incised channel.

Other Waters

Intermittent Stream

Two intermittent streams are mapped on the site, one large and one small and both occurring in the northwestern area and both tributary to Morrison Creek. The larger drainage carries seasonally high flows and has a cobbly bed. The smaller drainage is fed

from a wetland swale and has very short duration flows. The larger Morrison tributary is formed on Red Bluff soils, which are derived from alluvium. The topsoil and finer alluvial material have been removed leaving the exposed cobble creek bed. A wetland flora emerges in the larger channel as it dries out in the spring.

Pond (Seasonal Wetland)

Based on historical aerial photographs, an instream stock pond on Frye Creek was created decades ago to provide late spring water for cattle. The pond was notched several years ago and no longer ponds water. It does however remain saturated during the wet season and is a seasonal wetland that supports wetland grasses including ryegrass, Mediterranean barley, waxy manna grass (*Glyceria declanata*), small areas of swamp grass (*Crypsis schoenoides*), and other non-grass weedy species including pigweed (*Amaranthus* sp.), knotweed (*Polygonum arenastrum*), and curly dock.

Canal

The Folsom South Canal is a concrete-lined canal that is owned and operated by the U.S. Bureau of Reclamation. It originates at Lake Natoma and runs for approximately 26.6 miles. The Canal has a bottom width of 34 feet and a maximum water depth of 17.8 feet.

Non-Regulated Waters

Industrial Ponds

Several industrial ponds are located directly adjacent to the Sacramento Rendering Company facility and are associated with its industrial use. These ponds function as evaporation ponds as well as catch basins, in case of spills and/or the need to quickly drain equipment. These features were built to support the rendering facility, and are completely managed by the facility.

Special-Status Species

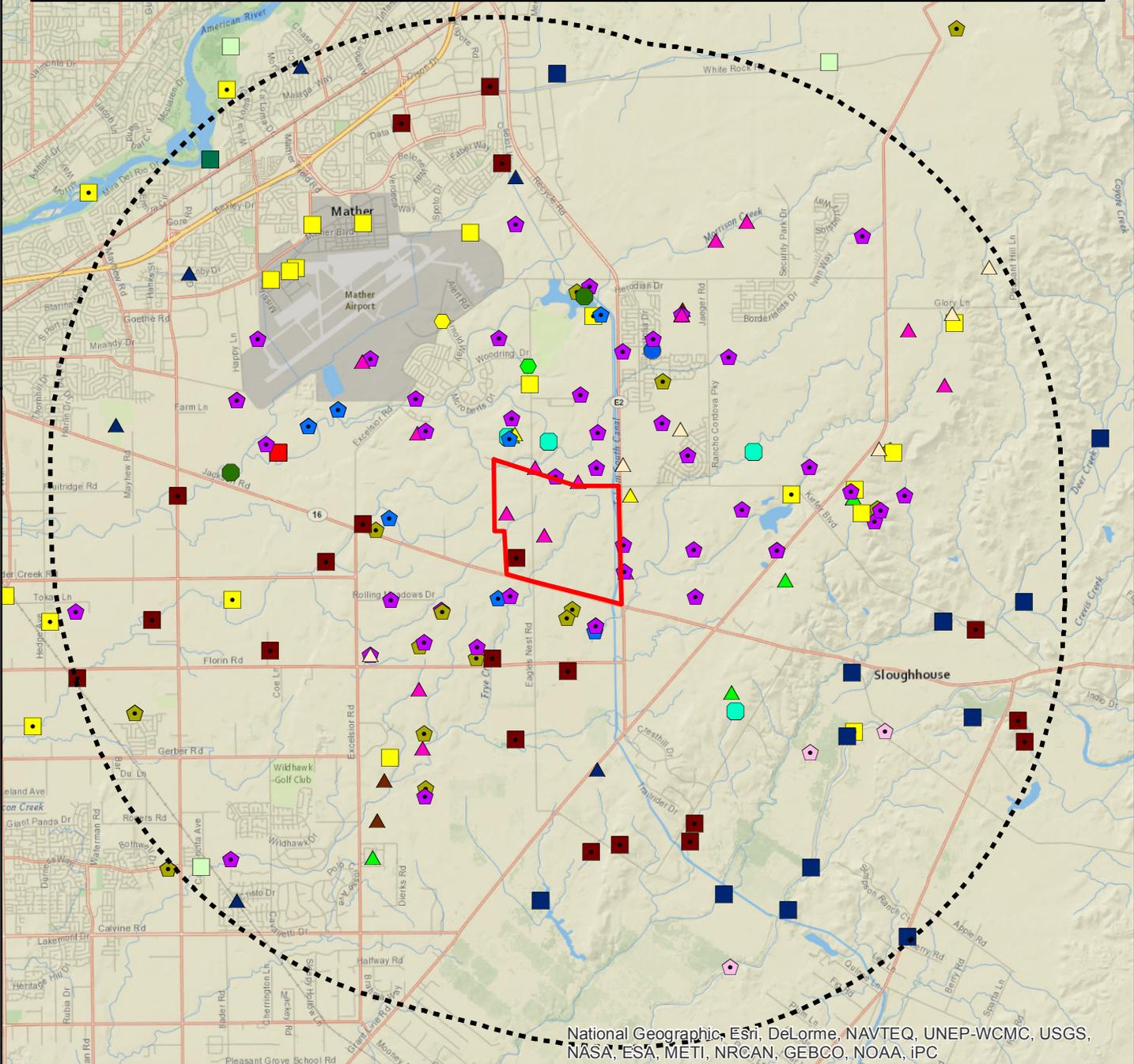
To determine potentially occurring special status species, we reviewed the standard databases from the USFWS, CDFW (the CNDDDB), and CNPS. We evaluated a larger list of regionally occurring species and determined which ones had at least some potential to occur within or near the study area. Figure 8 shows the CNDDDB plant and wildlife occurrences within a five mile radius of the study area.

Appendix C is a list of special-status plants compiled from our queries that has been refined to exclude species requiring habitats not occurring in or around the study area and species occurring far outside the study area. Appendix D is a similar refined list of special-status animals. Plant species found on the CNPS List 3 and 4 are not considered further in this document.

The refined list of special-status species in the region of the study area includes 27 plants and 26 animals (Appendices C and D, respectively). Of these, seven (7) plants are rated possible to occur, one (1) plant occurs, and 14 animals either occur onsite or were rated “possible” or “likely” to occur because the site has some areas of suitable habitat or they

Approximate Location of Special-Status Species

- | | | | |
|---------------------------|------------------------|-------------------------------------|---------------------------------------|
| ▲ Ahart's dwarf rush | ■ burrowing owl | ◆ midvalley fairy shrimp | ● American badger |
| ▲ Boggs Lake hedge-hyssop | ■ Cooper's hawk | ◆ valley elderberry longhorn beetle | ● Ricksecker's water scavenger beetle |
| ▲ legenerae | ■ golden eagle | ◆ vernal pool fairy shrimp | ● hairy water flea |
| ▲ Sacramento Orcutt grass | ■ great blue heron | ◆ vernal pool tadpole shrimp | ● western pond turtle |
| ▲ Sanford's arrowhead | ■ great egret | | ● western spadefoot |
| ▲ slender Orcutt grass | ■ Swainson's hawk | | |
| | ■ tricolored blackbird | | |
| | ■ white-tailed kite | | |



National Geographic, Esri, DeLorme, NAVTEQ, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, IPC



Study Area
5-mile Buffer

Data: California Natural Diversity Database GIS California Dept. of Fish and Wildlife, October 2013

Figure 8

CNDDDB SPECIES OCCURRENCE LOCATIONS
NewBridge Specific Plan
Sacramento County, CA

are known from nearby locations. Some species rated unlikely to occur may be discussed if they have high status or when further clarification is needed. Table 3 is a summary of those species, and they are discussed in more detail in the paragraphs following the table.

Table 3. Special-Status Species That Could Occur Within NewBridge Study Area

Species	Status*			Habitat	Potential for Occurrence**
	Federal	State	Other		
Plants					
Dwarf downingia <i>Downingia pusilla</i>	-	-	Rank 2.2	Valley and foothill grassland (mesic); vernal pools, seasonal wetlands, and wetland swales.	Possible – Suitable habitat is present in the study area. Not observed onsite.
Bogg's Lake hedge-hyssop <i>Gratiola heterosepala</i>	-	CE	Rank 1B.2	Marshes and swamps (lake margins); vernal pools. Below 1200 m	Possible – Suitable habitat is present in the study area. Not observed onsite.
Ahart's dwarf rush <i>Juncus leiospermus ahartii</i>	-	-	Rank 1B.2	Vernal pools	Possible – Suitable habitat is present in the study area. Not observed onsite.
Legenere <i>Legenere limosa</i>	-	-	Rank 1B.1	Vernal pools	Occurs – Population found in VP96 on western side of study area. Not observed onsite.
Pincushion navarretia <i>Navarretia myersii myersii</i>	-	-	Rank 1B.1	Vernal pools	Possible – Suitable habitat is present in the study area. Not observed onsite.
Slender Orcutt grass <i>Orcuttia tenuis</i>	FT	CE	Rank 1B.1	Vernal pools	Possible – Suitable habitat is present in the study area. Not observed onsite.
Sacramento Valley Orcutt grass <i>Orcuttia viscida</i>	FE	CE	Rank 1B.1	Vernal pools	Possible – Suitable habitat is present in the study area. Not observed onsite.
Sanford's arrowhead <i>Sagittaria sanfordii</i>	-	-	List 1B.2	Marshes and swamps (assorted shallow freshwater)	Possible – Suitable habitat is present within the study area. Not observed onsite.
Invertebrates					
Conservancy fairy shrimp <i>Branchinecta conservatio</i>	FE	-	-	Large, cool vernal pools.	Unlikely – Study area occurs outside of currently known range of species.
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FT	-	-	Vernal pools and seasonal wetlands.	Likely – Suitable habitat present on site. Numerous known occurrences in project region.

Species	Status*			Habitat	Potential for Occurrence**
	Federal	State	Other		
Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	FE	-	-	Vernal pools and seasonal wetlands.	Likely – Suitable habitat present on site. Several known occurrences in project region.
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	FT	-	-	Elderberry shrubs in woodland and riparian habitats	Unlikely – No elderberry shrubs (host plant) known to be present but protocol surveys have not been conducted.
Reptiles					
Western pond turtle <i>Emys marmorata</i>	-	SSC	-	Ponds, marshes, river, streams and ditches with basking sites and vegetation.	Occurs – Ponds provide marginal quality habitat. At least two individuals observed in northern pond.
Giant garter snake <i>Thamnophis gigas</i>	FT	ST	-	Freshwater marshes, low-gradient streams, canals, irrigation ditches, rice fields.	None – No suitable aquatic habitat present on site. No known occurrences in vicinity.
Amphibians					
California tiger salamander (Central Valley DPS) <i>Ambystoma californiense</i>	FT ¹	ST	-	Breeds in vernal pools, seasonal wetlands or stock ponds.	Unlikely – Site located outside of current known range of species. Few occurrences in project region.
California red-legged frog <i>Rana aurora draytonii</i>	FT	SSC	-	Deeper pools and streams with emergent or overhanging vegetation.	None – No suitable aquatic habitat present on site. Site located outside of current range. Not known from valley floor.
Western spadefoot <i>Spea hammondi</i>	-	SSC	-	Breeds in vernal pools, seasonal wetlands, or stock ponds.	Possible – Suitable breeding habitat in vernal pools and seasonal wetlands. Known occurrences in project vicinity.
Birds					
Grasshopper sparrow <i>Ammodramus savannarum</i>	-	SSC	-	Dry, dense grasslands of foothills and Central Valley.	Possible – Marginal quality nesting habitat located throughout annual grassland of the site.
Burrowing owl <i>Athene cunicularia</i>	-	SSC	-	Dry grasslands, deserts, and scrublands.	Occurs - Suitable burrowing habitat within open grassland of project site. Species observed during surveys.

Species	Status*			Habitat	Potential for Occurrence**
	Federal	State	Other		
Swainson's hawk (nesting) <i>Buteo swainsoni</i>	-	ST	-	Riparian woodlands and oak savannah with adjacent grassland or agricultural fields.	Unlikely – Suitable foraging but limited nesting habitat on site. Species observed flying overhead and foraging during surveys.
White-tailed kite (nesting) <i>Elanus leucurus</i>	-	CFP	-	Open grassland, meadows, and farmlands. Nests in tall trees near foraging areas.	Unlikely – Suitable foraging habitat located throughout site. Limited nesting habitat available. Species observed flying overhead and foraging during surveys.
Mammals					
American badger <i>Taxidea taxus</i>	-	SSC	-	Dry, open soils of shrub and forest habitats.	Possible – Suitable habitat present on and near site. Few known occurrences in project region.

*Status Codes:

Federal

FE Federal Endangered
FT Federal Threatened

State

ST California Threatened
SSC Species of Special Concern
CFP California Fully Protected

CNPS

Rank 1B Rare, Threatened, or Endangered in California
Rank 2 R, T, or E in California, more common elsewhere
1- Seriously threatened in California
2- Fairly threatened in California
3- Not very threatened in California

**Definitions for the Potential to Occur:

None. Habitat does not occur.

Unlikely. Some habitat may occur, but disturbance or other activities may restrict or eliminate the possibility of the species occurring. Habitat may be very marginal, or the study area may be outside the range of the species.

Possible. Marginal to suitable habitat occurs, and the study area occurs within the range of the species.

Likely. Good habitat occurs, but the species was not observed during surveys.

Occurs: Species was observed during surveys.

Notes:

¹ Listing status refers to Central Valley DPS of CTS only.

Plants

The query of the California Natural Diversity Data Base resulted in a list of 27 species occurring in the region surrounding the property (see Appendix A). Of these, seven are considered “possible” for occurrence and one (Legenere) occurs within the study area. The following paragraphs describe in more detail each of the potentially occurring or occurring special status plants listed in Table 2.

Dwarf downingia (*Downingia pusilla*) is a small annual member of the bellflower family (Campanulaceae). It has no state or federal status. The CNPS places the dwarf downingia on their Rank 2.2, meaning that, although it is rare in California, it is more widespread elsewhere. Dwarf downingia also occurs in Chile where the type specimen was collected. Dwarf downingia is distinguished from other members of the genus by having very small flowers that

are not upside down at blooming time. The species is an obligate wetland plant that occurs primarily in vernal pools. It blooms from March to May, depending on the amount and distribution of winter rains.

Suitable habitat for dwarf downingia is present in the NewBridge study area, but it was not observed during field surveys. Only the common double-horned downingia (*Downingia bicornuta bicornuta*) and Solano downingia (*Downingia ornatissima ornatissima*) were present in 2003 and 2010.

Bogg's Lake hedge-hyssop (*Gratiola heterosepala*) is a small annual member of the plantain family (Plantaginaceae). It is given endangered status by the state Endangered Species Act, although it has no federal status. The CNPS places it on its Rank 1B.2. It differs from the common *G. ebracteata* by having blunt tips on the leaves and sepals, which are smaller and of different lengths. It is restricted to the moist margins of vernal pools and marshes in northern California. It blooms from April to June, usually as the pools begin to dry.

Suitable habitat for this species is present in the NewBridge study area, and it occurs in the Mather and Anatolia vernal pool preserves. Only the common *G. ebracteata* was observed during field surveys.

Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*) is a very small annual member of the rush family (Juncaceae). It has no state or federal status, but it is on the CNPS Rank 1B.2. It differs from the more common *J. bufonius* by having terminal flowers and from the introduced *J. capitatus* by having inconspicuous bracts. It is very similar in stature to *J. uncialis*, but it has very long styles compared to the more common species. It grows in vernal pools along the east side of the Central Valley from Butte County to Calaveras County. It blooms from March to May.

Ahart's dwarf rush has been observed at the Mather vernal pool preserve, and suitable habitat occurs in the NewBridge study area. The common, and very similar, *J. uncialis* was found at several locations during field surveys.

Legenere (*Legenere limosa*) is small annual member of the bellflower family (Campanulaceae). It has no state or federal status, and it is a CNPS Rank 1B.1 species. The genus name is an anagram of E.L. Greene, one of California's early botanists (and now you know). It is the only species in the genus and has small, inconspicuous flowers that have pedicels rather than being sessile. Legenere prefers the drying mud of late season vernal pools and it blooms from April to June.

Legenere was found in one pool on the east and one pool on the west side of Eagles Nest Road.

Pincushion navarretia (*Navarretia myersii* subsp. *myersii*) is an annual, member of the phlox family (Polemoniaceae). It is on the CNPS Rank 1B.1, but has no state or federal status. Pincushion navarretia differs, in part, from the more common *N. leucocephala* by its larger flowers. It is confined to vernal pools at a relatively few locations in the eastern Central Valley. It generally blooms in May.

Suitable habitat is present for pincushion navarretia. However, only the common *N. intertexta* and *N. leucocephala* subsp. *leucocephala* were found during field surveys.

Slender Orcutt grass (*Orcuttia tenuis*) is an annual member of the grass family (Poaceae). It is a threatened federal species and an endangered state species. It is also on the CNPS Rank 1B.1 list. This species is better known from more northern California, but it also occurs in

Sacramento County, where it prefers large, deep vernal pools. It blooms late in the season, usually between May and July.

Several pools are suitable for slender Orcutt grass, and it is known to occur in the vicinity. However, no members of the genus were found during field surveys.

Sacramento Valley Orcutt grass (*Orcuttia viscida*) is annual member of the grass family (Poaceae). It is a federal endangered species and is a California endangered species. It is also on the CNPS Rank 1B.1 list. Technical characteristics, such as longer lemma awns, separate this species from other members of the genus. It prefers large, deep vernal pools, and is known to occur only in Sacramento County. Sacramento Valley Orcutt grass blooms late, typically from May to July.

Several pools are suitable for Sacramento Valley Orcutt grass, and it is known to occur in the vicinity. However, no members of the genus were found during field surveys.

Sanford's arrowhead (*Sagittaria sanfordii*) is a herbaceous perennial member of the water-plantain family (Alismataceae). It is a federal species of concern and is on the CNPS Rank 1B.2. Sanford's arrowhead lacks the arrow shaped (sagittate) leaves of other members of the genus. It has sharply triangular petioles (leaf stems) that distinguish it in the vegetative state from *Alisma*, in which the back of the petioles are rounded. Its preferred habitat is marshes associated with slow-moving water in sloughs and ditches. It is known to occur in concrete lined channels with only a few inches of soil. It has a long blooming period, starting as early as May and sometimes lasting until early fall.

Only marginal habitat for Sanford's arrowhead is present within the study area, and it was not observed during field surveys.

Wildlife

Vernal pool crustaceans

Vernal pools and seasonal wetlands of the study area provide potential habitat for two federally-listed vernal pool crustaceans, including vernal pool fairy shrimp and vernal pool tadpole shrimp. In 2005, the U.S. Fish and Wildlife Service (USFWS) published the "*Recovery Plan for Vernal Pool Ecosystems in California and Southern Oregon*" (Recovery Plan), which covers numerous vernal pool species including vernal pool fairy shrimp and vernal pool tadpole shrimp (USFWS 2005a). The Recovery Plan identifies larger Vernal Pool Regions throughout California that are based on species occurrence, vernal pool habitat, watershed boundaries and topographic features. Core Areas were then identified within each Vernal Pool Region where recovery actions would be targeted. The NSP study area is located within the "Mather Core Area", which occurs in the larger "Southeastern Sacramento Valley Vernal Pool Region".

In February 2006 the USFWS published a final critical habitat designation for 22 vernal pool ecosystems in California and southern Oregon (Federal Register 2006). Critical Habitat is defined as "a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management or protection" (USFWS 2005b). Critical habitat units for vernal pool tadpole shrimp and vernal pool fairy shrimp were designated in the immediate vicinity of the study area. Critical Habitat Unit 8 for vernal pool tadpole shrimp and Critical Habitat Unit 13 for vernal pool fairy shrimp occur in eastern Sacramento County, north of Highway 16 (Jackson Highway) and south of Highway 50.

The portion of the study area located west of Eagles Nest Road and south of Keifer Boulevard occurs within the eastern-most portion of the designated critical habitat for both species. The approximate 188 acre portion of the study area located within Critical Habitat consists of open rangeland with scattered vernal pools and wetland swales.

Brief descriptions of the federally-listed vernal pool crustaceans evaluated as part of this study are provided below.

Vernal pool fairy shrimp (*Branchinecta lynchi*), a federally threatened species, is a small crustacean that occurs in association with a variety of vernal pool habitats. This species has never been found in permanent bodies of water such as riverine habitats. While vernal pool fairy shrimp have been found in large vernal pools, individuals tend to occur in smaller pools often measuring less than 0.05 acres in area (USFWS 2005a). Vernal pool fairy shrimp are adapted to survive the seasonal flooding and drying of the pools in which they live. The average time of maturity of vernal pool fairy shrimp is 41 days, but can be as little as 18 days in warmer pools. After maturing, this species breeds and produces eggs that are dropped to the bottom of the pool. Adult fairy shrimp then die at the end of the wet season after the pool dries out. Remaining eggs are then protected throughout the dry season by a thick outer covering (USFWS 2005a).

The CNDDDB documents numerous known occurrences of vernal pool fairy shrimp in the broader project region and many of the occurrences are located within one mile of the study area (CNDDDB 2013).

Suitable habitat for vernal pool fairy shrimp occurs in association with vernal pools and seasonal wetlands located throughout the study area. No focused surveys have been conducted to determine presence/absence and specific locations of vernal pool fairy shrimp within the site. However, based on the number of previously documented occurrences in the immediate vicinity of the site, this species is assumed to occur in all suitable vernal pool habitats throughout the study area.

Vernal pool tadpole shrimp (*Lepidurus packardii*), a federally endangered species, is a small crustacean that inhabits a wide variety of ephemeral aquatic habitats of the Central Valley (USFWS 2005a). This species has been observed in stock ponds, vernal pools, grass bottom swales, mud-bottomed pools, and other seasonal wetlands containing clear to highly turbid water (City of Sacramento 2003). It is known to occur in vernal pools ranging in size from seven square feet to 88 acres, with a variety of depths and volumes. The life history of this species is closely tied to the seasonal cycle of the vernal pool that it inhabits and similar to that of vernal pool fairy shrimp (refer to previous discussion). After winter rainwater fills the pool, the population is reestablished from cysts that lie dormant in the dry pool sediments. The species matures at approximately three to four weeks after the pools have been filled. Some cysts hatch immediately, while others remain dormant until the subsequent rainy season.

The CNDDDB lists several documented occurrences of vernal pool tadpole shrimp within the immediate vicinity of the study area (CNDDDB 2013). The closest documented occurrences include areas immediately north and east of the study area and areas just to the south of Highway 16. During the March 2010 site visit, exoskeletons of tadpole shrimp were observed in a larger vernal pool located on site, just east of Eagles Nest Road and south of the power lines. While no focused surveys were conducted for vernal pool crustaceans to confirm presence/absence as part of this study, it is expected that vernal pool tadpole shrimp likely

occur in vernal pools and swales throughout the study area, based on known occurrences in the region surrounding the project site.

Conservancy fairy shrimp (*Branchinecta conservatio*), a federally endangered species, is a small crustacean in the Branchinectidae family. This species inhabits somewhat large, cool water vernal pools with moderately turbid water (USFWS 2005a). Similar to other vernal pool crustaceans, the life cycle of Conservancy fairy shrimp is closely tied to the ephemeral conditions of the pool in which they live. Vernal pools that support Conservancy fairy shrimp generally persist until June. The average age of maturity is 49 days, and individuals may live up to 154 days (USFWS 2005a). The female fairy shrimp carries its eggs in a brood sac. Eggs then either drop to the bottom of the pool or remain in the brood sac until the mother dies and sinks to the pool bottom. The eggs subsequently dry out as the pool dries at the end of the rainy season. The resting eggs, known as cysts, remain in the dry pool bed until rain stimulates hatching in the following season. Hatching of the eggs can begin within the same week that the pool starts to fill with rainwater.

The CNDDDB does not document any known occurrences of Conservancy fairy shrimp within the project region, or within Sacramento County (CNDDDB 2013). Because there are currently no known populations within Sacramento County, the potential for occurrence of Conservancy fairy shrimp within the study area is considered unlikely.

Other Invertebrates

Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) is a federal threatened species. Live elderberry shrubs (*Sambucus nigra subsp. caerulea*) are the exclusive host plant of valley elderberry longhorn beetle (VELB). Adult VELB emerge from pupation inside the wood of elderberry shrubs in the spring as their flowers begin to open (USFWS 1999a). Exit holes made by the emerging adults are distinctive small oval openings (approx. ¼-inch width). Adults eat elderberry foliage until about June when they mate. Females lay eggs in crevices in the bark before dying a short time later. Upon hatching the larvae then begin to tunnel into the tree where they will spend one to two years eating the interior wood, which is their sole food source.

The CNDDDB documents several occurrences of this species in the project region. A high concentration of occurrences exist approximately seven miles north along the American River and from scattered areas along portions of the Cosumnes River to the south (CNDDDB 2013). The CNDDDB also documents a few known occurrences of VELB in groves of elderberry in the Folsom and Rancho Cordova areas, to the north and northeast.

No elderberry shrubs were observed within the study area during recent surveys and the southwest area has not been evaluated at all. Elderberry surveys have a two year shelf life.

Amphibians

California tiger salamander (*Ambystoma californiense*) is a large, stocky terrestrial salamander that is endemic to California. The Central Valley distinct population segment (DPS) of California tiger salamander (CTS) is listed as federal and state threatened.

Throughout California, CTS occurs primarily in annual grassland habitats and foothill regions at elevations below 2000 feet (USFWS 2009a). Adults require vernal pools or other ephemeral

bodies of water for breeding and egg-laying, but will occasionally use permanent human-made ponds if predatory fish are absent (Zeiner et al. 1988). A strong negative association between bullfrogs and California tiger salamanders (CTS) has been documented, and therefore breeding rarely occurs in aquatic sites where bullfrogs and predatory fish are numerous (USFWS 2009).

Adult CTS remain underground for most of the year in small mammal burrows in the vicinities of breeding ponds. Surface movements of adults subsequently occur during periods of significant rainfall. Breeding and egg-laying typically occurs from December through early February. Clusters of eggs are deposited at breeding sites on both submerged and emergent vegetation and eggs hatch after 10 to 14 days. The aquatic larval stage then lasts for approximately three to six months. Larvae typically transform during late spring or early summer and disperse from the breeding sites to nearby upland areas (Zeiner et al. 1988). CTS cannot dig their own burrows, and therefore only occur in association with burrowing mammals such as western ground squirrels. Adults of this species have been observed up to 1.3 miles from breeding ponds, but are most often found less than a mile from the nearest aquatic breeding site, depending on local topographic and vegetation conditions.

The CNDDDB documents few occurrences of CTS within the broader project region. The closest documented occurrences of CTS relative to the study area are from approximately 12 miles to the southeast and south, in areas located south of the Cosumnes River. Because all of the documented occurrences in the region are located south of the Cosumnes River, the study area is assumed to be located outside of the current range for the species, and therefore, CTS is not expected to occur on site.

California red-legged frog (*Rana aurora draytoni*), a federally threatened species and California species of special concern, historically ranged from Marin County southward to northern Baja California. This species is still locally abundant within portions of the San Francisco Bay area and along the central coast. Only isolated populations of California red-legged frog (CRLF) have been documented in the Sierra Nevada foothills region. Remaining aggregations within the foothills have become fragmented and nearly extirpated due to a variety of factors including habitat loss, expansions of exotic predators, and habitat fragmentation (USFWS 2010). CRLF prefers aquatic habitats with little or no flow, the presence of surface water to at least early June, surface water depths to at least 0.7 meters (2.3 feet), and the presence of fairly sturdy underwater supports such as cattails. The largest densities of this subspecies are typically associated with dense stands of overhanging willows and an intermixed fringe of sturdy emergent vegetation (USFWS 2005c). CRLF typically breed from January to July, with peak breeding occurring in February. Eggs are attached to subsurface vegetation, and hatched tadpoles require 11 to 20 weeks to metamorphose.

CRLF is not expected to occur in aquatic habitats within or near the study area as the site occurs outside of the current range of the species (USFWS 2002). The CNDDDB does not list any documented occurrences of CRLF within Sacramento County and there are currently no documented occurrences of CRLF within the project vicinity. The closest documented occurrence is from over 17 miles northeast of the study area, in the foothills along the east side of Folsom Lake (CNDDDB 2013). In addition, existing literature indicates that CRLF may have been extirpated from the floor of the Central Valley prior to the 1960s (USFWS 2002).

Western spadefoot (*Spea hammondi*), a California species of special concern, occurs primarily in annual grassland habitats, open sandy floodplains, alluvial terraces, and occasionally in valley-foothill hardwood woodlands. Adults of this species use vernal pools and other ephemeral

sources of water for breeding and egg-laying (Zeiner et al. 1988). Adult toads remain in underground burrows (up to 36 inches deep) in the vicinities of breeding ponds for most of the year, and rarely are encountered above-ground. Surface movement to adjacent breeding habitat typically occurs following the first significant rainfall of the year, with breeding and egg-laying occurring from late winter to the end of March. Egg masses are attached to plant material or on the top of submerged rocks. Hatching then occurs fairly quickly, usually within two weeks. Recently metamorphosed juveniles often hide in drying mud cracks or under other surface objects in the vicinities of breeding ponds for up to several days following transformation.

There have been several recorded occurrences of western spadefoot within the immediate vicinity of the study area including areas located directly to the north (CNDDDB 2013). Within the study area, scattered vernal pools, seasonal wetlands, wetland swales and adjacent grassland provide suitable breeding and upland habitat for western spadefoot. Based on the presence of potential breeding and upland habitat, and the proximity to other known occurrences in the region, it is expected that this species has a reasonable potential for occurring within scattered seasonal wetlands of the project site.

Reptiles

Western pond turtle (*Emys marmorata*), a California species of special concern, occurs in association with streams, rivers, and ponds containing suitable cover and basking sites. This subspecies can be associated with both permanent and ephemeral water sources, including perennial and intermittent streams. Suitable basking sites along streams or ponds include partially submerged logs, rocks, mats of floating vegetation, or open streambanks. Suitable upland habitat, such as sandy banks or grassy fields, located adjacent to the aquatic habitat is required for egg-laying. Nesting may take place in a variety of soil types from loose sandy soils to compact soils, and in a variety of habitat types. Eggs are laid from March to August, depending on local climate and water conditions, and incubation occurs for 73 to 80 days (Zeiner et al. 1988).

During the March and April 2010 field surveys at least two northwestern pond turtles were observed either basking on the shore or swimming in the large wastewater/industrial pond located just south of the rendering plant. Other pond turtles were briefly observed during the April site visit and at least one was identified as an introduced slider. Additional pond turtles were observed during the field survey but the species could not be confirmed at the time. The industrial pond where the pond turtles were observed provides only marginal quality habitat due to the absence of cover, few basking sites, and possibly, poor water quality. The turtles present within the pond, including the individuals of western pond turtle, may have either moved overland from other aquatic habitats in the vicinity or were translocated from other off-site habitats and released.

Giant garter snake (*Thamnophis gigas*) is a highly aquatic snake that prefers freshwater marsh and low gradient streams of the Central Valley. This species has also adapted to agricultural wetlands and various other man-made waterways including irrigation ditches and drainage canals with mud bottoms. Primary habitat types include permanent and seasonal marshes, flooded rice fields, and waterways associated with rice agriculture. Specific requirements for giant garter snake (GGS) include the following: presence of adequate surface water and emergent, herbaceous vegetation (e.g., cattails, bulrush) throughout the active season (early-spring through mid-fall); openings in vegetation and grassy banks for basking and; adequate

adjacent upland vegetation for use during the dormant season. While specific water requirements are unknown, the presence of a sufficient amount of surface water is required to allow for foraging and provide cover throughout the active season. This species will typically inhabit small mammal burrows and other soil crevices, located on west and south facing slopes, during the rainy season and dormancy period. The diet of this species includes small fish, tadpoles and frogs. Breeding activity usually takes place during March and April. Live young are born from late July through early September, in secluded sites such as under loose bark, rotting logs, or in dense vegetation near water. Following birth, young immediately disperse to adjacent dense cover (USFWS 1999b).

The CNDDDB documents several occurrences of GGS within the broader project region (CNDDDB 2013). The closest recorded occurrences are from over 5 to 6 miles to the southwest, in the vicinity of Elk Grove and near Freeport. Other occurrences are documented to the north of Sacramento, in the Rio Linda area. Suitable habitat for GGS does not occur on or in the vicinity of the project site. This species is typically more common in the lower reaches of the watershed, in basin areas with perennial surface water and more substantial emergent vegetation (County of Sacramento 2009). Based on the distance from other known populations of GGS and the absence of suitable habitat, this species is not expected to occur within the study area.

Birds

Grasshopper sparrow (*Ammodramus savannarum*), a California species of special concern, is considered an uncommon and local, summer resident and breeder in California (Zeiner et al. 1990a). It is known to occur in dry, dense grasslands, containing a variety of grasses and tall forbs and scattered shrubs they use as singing perches. They prefer areas with a thick cover of grasses and forbs for nesting, especially native grassland areas. Grasshopper sparrow breeds from early April to mid-July with a peak in May and June. They generally construct a nest in a slight depression on the ground, hidden at the base of an overhanging clump of grasses and forbs. Usually 4 to 5 eggs are laid and incubated by the female alone for 11 to 12 days. Young grasshopper sparrows leave the nest at about nine days but are not able to fly until later. This solitary nester sometimes raises two or three broods each year.

The CNDDDB documents only two known occurrences of grasshopper sparrow within the region surrounding the study area. The closest reported occurrences are from approximately eight miles to the east in annual grassland in the vicinity of Rancho Murrieta, and from the southeast, just south of Meiss Road (CNDDDB 2013). While the study area does not provide preferred nesting habitat for the species, in the form of dense grassland with scattered shrubs, there is some limited potential for grasshopper sparrow to occur periodically on site.

Burrowing owl (*Athene cunicularia*), a California species of special concern, occurs in association with open, dry grasslands, deserts, agricultural areas, and rangeland. Preferred habitat includes open fields with short vegetation for foraging. They often occur where numerous burrowing mammals are present and frequently occupy California ground squirrel burrows (Zeiner et al. 1990a). Burrowing owls may also use man-made structures such as debris piles, culverts, and cement piles for cover. Distinctive burrow characteristics for burrowing owl are not known. However, given the size of this owl, burrow entrances are expected to be at least seven centimeters in diameter. Circumstantial evidence of burrowing owl occurrence within an area typically consists of the presence of molted feathers, cast pellets, prey remains, or excrement near a burrow entrance. Breeding of burrowing owl occurs from March to late

August and incubation lasts between 28 to 30 days. Young are fledged at about 44 days but remain near the burrow and join the adults to forage at dusk. Young burrowing owls often establish nest sites the following year near their natal sites.

The CNDDDB documents several occurrences of burrowing owl in the project region. Several sightings have been reported from areas located directly north of the Study (CNDDDB 2013). During the March and April 2010 field surveys, no evidence of occurrence of this species was observed throughout the study area. However a burrowing owl was observed in a subsequent site visit in the spring of 2013 along Frye Creek. In addition, suitable habitat consisting of annual grassland with short vegetation and small mammal burrows, occurs throughout much of the site located west and south of the rendering plant and along Frye Creek.

Swainson's hawk (*Buteo swainsoni*), a state threatened species, is an uncommon breeding resident and migrant in the Central Valley. The nesting lifestage of this species is considered sensitive by CDFG. Breeding and nesting primarily occurs in riparian woodland habitats and oak savannah of the Central Valley, and often takes place near water. Some nesting in urban woodland areas has also been recorded. This species forages in adjacent agricultural fields, grasslands, and open pasture and have been known to forage as much as 20 miles from their nesting site. Small mammals, amphibians, reptiles, birds, and occasionally fish make up the diet of this species. Swainson's hawk often roosts in large trees but will sometimes roost on the ground. Nests consist of a platform of sticks, bark, and fresh leaves constructed in a tree, bush or utility pole from 4 to 100 feet above ground. Breeding occurs from late March to late August, with peak activity in late May through July. Incubation is about 25 to 28 days. Migrating individuals typically move south through California in September and October and move back to their summer range in March through May.

The CNDDDB documents numerous occurrences of Swainson's hawk throughout the project region, including some nesting sites within five miles of the study area (CNDDDB 2013). The closest documented occurrence was from 1998 (occurrence no. 708), and located three to four miles east/southeast of the study area, downstream of the Keifer Boulevard crossing on Deer Creek. Other nesting activity (occurrence no. 1641) was documented in 2007 near the corner of Sunrise Boulevard and White Rock Road, approximately 4.5 miles north of the study area.

Within the study area, potential nesting habitat is primarily limited to a few scattered trees located in the northwestern portion of the site. Suitable nesting habitat occurs in association with two individual oak trees and a grove of tall eucalyptus in the northwestern portion of the site. During the April 2010 survey, two Swainson's hawks were observed flying over grassland in the northern portion of the site, just east of Eagles Nest Road. Based on the direct observation of the species, and the close proximity to previously documented nesting activity and larger areas of foraging habitat, it is expected that Swainson's hawk has a reasonable potential for occurring on a seasonal basis (approximately March through August).

White-tailed kite (*Elanus leucurus*), a California fully protected species, is an uncommon to locally fairly common resident and is typically found in grassy foothill slopes interspersed with oaks (including interior live oak, agricultural areas, and marshy bottomlands). They generally forage in undisturbed open grasslands, farmlands, meadows, and emergent wetlands, in areas with a high prey base. Nest trees range from single isolated trees to trees within larger stands. Nests of white-tailed kite are constructed near the top of oaks, willows, or other tall trees from 20 to 100 feet above ground. Breeding takes place from February to October, with peak activity

from May to August. Incubation lasts between 28 and 30 days, and young usually fledge by October.

The CNDDDB documents numerous occurrences of white-tailed kite within the project region. The closest documented nesting activity is reported from directly north of the study area (CNDDDB 2013). Suitable nesting habitat is limited within the study area and includes two oak trees and grove of tall eucalyptus located in the northwestern portion of the site. In addition, one individual white-tailed kite was observed foraging over grassland in the western portion of the site, just west of Eagles Nest Road. Based on the presence of suitable habitat and direct observation of the species, it is expected that white-tailed kite has some limited potential for nesting within the few taller trees located in the northwestern portion of the site.

Mammals

American Badger (*Taxidea taxus*) is an uncommon, permanent resident in much of California. Preferred habitat includes open stages of most habitat types containing dry, loose soils for burrowing. Old burrows are frequently reused, although some dig a new den each night, particularly in summer. Young are born in burrows dug in areas with sparse overstory cover. Mating of badgers takes place in summer and early-fall, with gestation occurring for 183 to 265 days. A litter of 2 to 3 pups is then born in March or April. The species is carnivorous and diet consists of burrowing rodents, mice, and chipmunks, as well as ground squirrels and pocket gophers (Zeiner et al. 1990b).

The CNDDDB documents four occurrences of American badger in the project region, including two occurrences reported from the vicinity of the study area. In 1990, three badgers and numerous burrows were observed in an area of annual grassland located less than two miles north of the study area, just east of Sunrise Boulevard and south of Douglas Boulevard (CNDDDB 2013). In 1991, a badger carcass was reported from an area located between Bradshaw Road and Excelsior Road, approximately three to four miles west of the study area. Badgers require large areas of open land (100 to 1,000 acres) for denning and foraging (County of Sacramento 2009). Although no sign of badger occurrence (i.e., burrows) was observed during the field surveys, there is some limited potential for individuals of the species to periodically occur on site.

RECOMMENDATIONS

Waters of the United States

1. Areas considered to be waters of the United States exist within the study area. Activities that affect these areas would require a permit from the U.S. Army Corps of Engineers pursuant to Section 404 of the federal Clean Water Act. The project would also need to obtain a water quality certification from the Regional Water Quality Control Board pursuant to Section 401 of the federal Clean Water Act.

Streams, Pond, and Riparian Habitat

1. Impacts to the bed, bank, or channel of streams or ponds would require a Streambed Alteration Agreement with the CDFW. This would likely exclude the wastewater ponds.

Tree Conservation

1. Removal of native oaks on any property or parcel is regulated by the Sacramento County Code, Chapter 19.12 Tree Preservation and Protection, which states that is it the policy of the County to “protect all trees possible through the development review process.” Tree removal should be discussed with Sacramento County Department of Environmental Review and Assessment (DERA).

Special-Status Plants

1. Suitable habitat for seven special-status plant species occurs within the study area. Rare plant surveys were conducted in 2003, 2007 and 2010 and only *Legenere limosa* was found. No other special status species were found during field surveys. *Legenere* was found in the proposed preserve areas on either side of Eagles Nest Road. No further action is recommended for this species as long as its habitat is preserved. The area west of Eagles Nest Road is designated as Critical Habitat for two plants (slender orcutt grass and Sacramento valley orcutt grass). Federal agencies are required to consult with the USFWS on actions they carry out, fund or authorize to ensure their actions do not destroy or adversely modify Critical Habitat. Therefore any issuance of a permit resulting in disturbance of suitable habitat for the species or disturbance of Critical Habitat will require consultation with USFWS.

Special-Status Wildlife

1. Four of the species discussed in the report were determined to have minimal potential for occurring on site due to the limited amount, or marginal-quality of habitat available, or the rarity of the species within the project region. These species include the federally-listed Conservancy fairy shrimp, California tiger salamander, California red-legged frog, and giant garter snake. Further assessment of these species may be required by USFWS.
2. No protocol-level surveys to determine presence/absence of vernal pool crustaceans within the study area were conducted as part of this study. However, based on the presence of suitable habitat and the close proximity to other known occurrences of these species, vernal pool fairy shrimp and vernal pool tadpole shrimp are expected to occur in at least some of the vernal pools located throughout the site. Any disturbance of vernal pools or seasonal wetlands within the project site should therefore be avoided to the extent feasible. Impacts to federal-listed species or their habitats would require consultation with the U.S. Fish and Wildlife Service (USFWS). In addition, the portion of the study area located west of Eagles Nest Road occurs within designated Critical Habitat for both species. Federal agencies are required to consult with the USFWS on actions they carry out, fund or authorize to ensure their actions do not destroy or adversely modify Critical Habitat. Therefore any issuance

of a permit resulting in disturbance of suitable habitat for the species or disturbance of Critical Habitat will require consultation with USFWS.

3. No elderberry shrubs were found within the study area during field surveys. However, surveys were not conducted in the southwestern corner of the study area and surveys are only valid for two years. Protocol-level surveys for VELB should be conducted. The removal or disturbance of elderberry shrubs may require consultation with the USFWS.
4. Within the study area, suitable breeding habitat for western spadefoot occurs in the vernal pool complexes and other aquatic sites located throughout the grasslands. Western spadefoot is a state Species of Special Concern and must be considered in the CEQA analysis for the project. Any disturbance of annual grassland within the study area could result in loss of potential breeding habitat and loss of individuals estivating in underground burrows throughout much of the year. Therefore preconstruction surveys should be conducted prior to any ground disturbing activities and the CDFW should be consulted.
5. The presence of western pond turtle was confirmed within the project site during the March and April 2010 field surveys. Suitable habitat for this species is limited to the large industrial pond located within the south-central portion of the project site. Western pond turtle is a state Species of Special Concern and must be considered in the CEQA analysis for the project. If it is determined that disturbance of the pond or areas surrounding the pond will be required, CDFW should be consulted for this species.
6. Portions of the study area may provide suitable nesting habitat for grasshopper sparrow. The potential for occurrence is considered low, however, due to the distance from other documented nesting occurrences and the marginal-quality of habitat available. Grasshopper sparrow is a state Species of Special Concern and must be considered in the CEQA analysis for the project. Since there may be some limited potential for nesting of individual birds, CDFW should be consulted for this species.
7. One burrowing owl was observed within the study area during a site visit in the spring of 2013. Burrowing owls were not observed in any year prior to that sighting. Suitable habitat for burrowing owl occurs in open grassland of the site, in areas located west, southwest and south of the rendering plant. Prior to any future work activities or ground disturbance on site, a pre-construction burrowing-owl survey should be conducted to determine presence/absence of the species. Surveys should be conducted by a biologist approved by the California Department of Fish and Wildlife, and should be conducted according to current survey protocols, including the California Burrowing Owl Consortium's 1993 *Burrowing Owl Survey Protocol and Mitigation Guidelines*. The biologist should prepare a report that documents the survey results and should submit to CDFW.
8. Swainson's hawk and white-tailed kite were observed soaring above the study area. Based on the close proximity to other documented nesting sites (CNDDDB 2013) and

the presence of a few potential nesting trees, both species cannot be ruled out as potential nesters on site. Any removal of identified potential nesting trees during the nesting season would require a preconstruction survey. If active nests are found on or immediately adjacent to the site, consultation should be initiated with CDFW to determine appropriate avoidance measures.

9. Swainson's hawk and white-tailed kite were observed foraging within the study area during surveys. Due to the proximity to other previously documented nesting sites (within a 5-mile radius), the study area would be considered suitable foraging habitat for both species. Any disturbance of annual grassland of the site could therefore result in loss of suitable foraging habitat for the species. Prior to project initiation, the CDFW should be contacted to determine appropriate mitigation measures and responsibilities for the loss or disturbance of potential foraging habitat.
10. While American badger is considered to be rare within the project region, there is a documented occurrence in the vicinity of the study area. No indication of badger occurrence was observed within the study area during the field surveys. There is limited potential for individuals of this species to occur in annual grassland in the study area. American badger is a state Species of Special Concern and must be considered in the CEQA analysis for the project. Prior to initiation of any ground disturbance activities within annual grassland of the site, a pre-construction survey should be conducted by a qualified biologist to determine presence/absence of active badger dens. If active dens are found or any other indication of badger occurrence observed, CDFW should be immediately contacted to determine appropriate avoidance and mitigation requirements.

REFERENCES AND OTHER RESOURCES

- Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, editors. 2012. *The Jepson manual: vascular plants of California*, second edition. University of California Press, Berkeley.
- Barbour, M.G. and J. Major (eds). 1998. *Terrestrial Vegetation of California*, Expanded Edition. California Native Plant Society Special Publication Number 9. Sacramento, California.
- California Department of Conservation, California Geological Survey. Geologic Map of California, Sacramento Quadrangle (1:250,000). <http://www.quake.ca.gov/gmaps/RGM/sacramento/sacramento.html>. Sacramento, California.
- California Department of Fish and Wildlife, California Wildlife Habitat Relationships Program. 2008. *Complete List of Amphibians, Reptiles, Birds, and Mammals in California*. Sacramento, California.
- _____, Wildlife and Habitat Data Analysis Branch. 2013. *Natural Diversity Data Base Report (CCNDDB)*. Sacramento, California.
- California Native Plant Society. 2013. *Inventory of Rare and Endangered Plants*. An online database maintained by the Native Plant Society. <http://www.rareplants.cnps.org/>. Sacramento, California.
- Clark, W.S. and B.K. Wheeler. 1987. *The Peterson Field Guide to Hawks of North America*. Houghton Mifflin Company, Boston, Massachusetts.
- Federal Register. February 10, 2006. *Endangered and Threatened Wildlife and Plants: Designation of Critical Habitat for Four Vernal Pool Crustaceans and Eleven Vernal Pool Plants; Final Rule*. 50 CFR Part 17. Pages 7118 - 7316
- Folsom South Canal Partners. 2007. *Folsom South Canal Corridor Plan web site*. <http://www.folsomsouthcanal.com/>. Accessed October 2013.
- Holland, V.L., and D. J. Keil. 1995. *California Vegetation*. Kendall/Hunt Publishing Company. Dubuque, Iowa.
- Fix, David and Andy Bezener. 2000. *Birds of Northern California*. Lone Pine Publishing. Renton, Washington.
- Ingles, Lloyd G. 1965. *Mammals of the Pacific States*. Stanford University Press. Stanford, California.
- Jameson, E.W., Jr. and H.J. Peeters. 2004. *Mammals of California*. University of California Press. Berkeley, California.

- Sawyer, J.O. and T. Keeler-Wolf. 1995. A Manual of California Vegetation. California Native Plant Society. Sacramento, California.
- Sibley, D.A. 2003. The Sibley Field Guide to Birds of Western North America. Alfred A. Knopf. New York.
- Stebbins, R.C. 1985. A Field Guide to Western Reptiles and Amphibians. Houghton Mifflin Company. Boston, Massachusetts.
- United States Department of Agriculture, Natural Resources Conservation Service. 2013. Online Web Soil Survey for study area location.
<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>.
- United States Fish and Wildlife Service. 2005. Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon. United States Fish and Wildlife Service, Region 1, Portland, Oregon.
- _____. 1999a. Conservation Guidelines for Valley Elderberry Longhorn Beetle. Sacramento, California.
- _____. 1999b. Draft Recovery Plan for Giant Garter Snake.
- _____. 2002. Recovery Plan for the California Red-legged Frog (*Rana aurora draytonii*). United States Fish and Wildlife Service, Portland Oregon.
- _____. 2005a. Recovery Plan for Vernal Pool Ecosystems in California and Southern Oregon. Portland, Oregon.
- _____. 2005b. "Critical Habitat" Information Page.
http://www.fws.gov/endangered/pdfs/listing/Critical_Habitat_12_05.pdf
- The University and Jepson Herbaria. 2013. The Jepson Interchange. An online database that updates The Jepson Manual.
- Zeiner, D.C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White. 1988. California's Wildlife, Volume I. Amphibians and Reptiles. State of California, the Resources Agency, Department of Fish and Game, Sacramento, California.
- _____. 1990a. California's Wildlife, Volume II: Birds. State of California, the Resources Agency, Department of Fish and Game, Sacramento, California.
- _____. 1990b. California's Wildlife, Volume III: Mammals. State of California, the Resources Agency, Department of Fish and Game, Sacramento, California.

Appendix A.
Plant Species Observed Within the NewBridge Specific Plan Study Area

Appendix A -- Plants Observed-- NewBridge Study Area

Taxon	Common Name
<i>Acnispom americanus</i> var. <i>americanus</i>	Spanish clover
<i>Aegilops triuncialis</i>	Barbed goatgrass
<i>Aira caryophylla</i>	Silver European hairgrass
<i>Alopecurus saccatus</i>	Pacific foxtail
<i>Amaranthus albus</i>	Tumble pigweed
<i>Amsinckia menziesii</i>	Common fiddleneck
<i>Anagalis arvensis</i>	Scarlet pimpernel
<i>Anagalis minimus</i>	Chaffweed
<i>Avena barbata</i>	Slender wild oat
<i>Avena fatua</i>	Wild oat
<i>Briza minor</i>	Small quaking grass
<i>Brodiaea elegans</i> ssp. <i>elegans</i>	Harvest brodiaea
<i>Brodiaea minor</i>	Dwarf brodiaea
<i>Bromus diandrus</i>	Ripgut grass
<i>Bromus hordeaceus</i>	Soft chess
<i>Calandrinia ciliata</i>	Red maids
<i>Callitriche heterophylla</i> ssp. <i>heterophylla</i>	Varied leaf water-starwort
<i>Callitriche marginata</i>	Winged water-starwort
<i>Capsella bursa-pastoris</i>	Shepherd's purse
<i>Cardamine oligosperma</i>	Few-seed bitter cress
<i>Carduus pycnocephalus</i>	Italian thistle
<i>Castilleja attenuata</i>	Valley tassels
<i>Castilleja campestris</i> ssp. <i>succulenta</i>	Succulent owl's-clover
<i>Castilleja campestris</i> ssp. <i>campestris</i>	Field owl's-clover
<i>Centaurea solstitialis</i>	Yellow starthistle
<i>Centromadia fitchii</i>	Fitch's spikeweed
<i>Cerastium glomeratum</i>	Mouse-ear chickweed
<i>Chlorogalum pomeridianum</i> var. <i>pomeridianum</i>	Soap plant
<i>Cicendia quadrangularis</i>	Timwort
<i>Convolvulus arvensis</i>	Bindweed
<i>Cotula coronopifolia</i>	Brass-buttons
<i>Crassula aquatica</i>	Water pygmy-weed
<i>Croton setigerus</i>	Turkey mullein
<i>Crypsis schoenoides</i>	Swamp pricklegrass
<i>Cuscuta howelliana</i>	Boggs Lake dodder

Taxon	Common Name
<i>Cynodon dactylon</i>	Bermudagrass
<i>Cyperus eragrostis</i>	Tall flatsedge
<i>Deschampsia danthonioides</i>	Annual hairgrass
<i>Dichelostemma capitatum</i> ssp. <i>capitatum</i>	Blue dicks
<i>Downingia bicornuta</i> var. <i>bicornuta</i>	Double-horned downingia
<i>Downingia ornatissima</i> var. <i>ornatissima</i>	Solano downingia
<i>Eleocharis acicularis</i> var. <i>acicularis</i>	Least spikerush
<i>Eleocharis macrostachya</i>	Creeping spikerush
<i>Erodium botrys</i>	Broad-leaf filaree
<i>Erodium moschatum</i>	White-stem filaree
<i>Eryngium vaseyi</i>	Vasey's coyote-thistle
<i>Eschscholzia californica</i>	California poppy
<i>Eschscholzia lobbii</i>	Fryingpan poppy
<i>Eucalyptus globulus</i>	Blue gum
<i>Festuca myuros</i>	Rattail six-weeks grass
<i>Festuca perennis</i>	Italian ryegrass
<i>Geranium dissectum</i>	Cut-leaf geranium
<i>Glyceria x occidentalis</i>	Western mannagrass
<i>Glyceria declinata</i>	Waxy mannagrass
<i>Gnaphalium palustre</i>	Western marsh cudweed
<i>Gratiola ebracteata</i>	Bractless hedge-hyssop
<i>Hirschfeldia incana</i>	Short-podded mustard
<i>Holocarpha virgata</i> ssp. <i>virgata</i>	Virgate tarweed
<i>Holozonia filipes</i>	Holozonia
<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>	Mediterranean barley
<i>Hordeum murinum</i> ssp. <i>leporinum</i>	Foxtail barley
<i>Hypochaeris glabra</i>	Smooth cat's-ear
<i>Isoetes orcuttii</i>	Orcutt's quillwort
<i>Juncus bufonius</i>	Toad rush
<i>Juncus capitatus</i>	Capped rush
<i>Juncus mexicanus</i>	Mexican rush
<i>Juncus tenuis</i>	Slender rush
<i>Juncus uncialis</i>	Inch-high rush
<i>Juncus xiphioides</i>	Iris-leaf rush
<i>Lactuca serriola</i>	Prickly lettuce
<i>Lasthenia fremontii</i>	Fremont's goldfield
<i>Lasthenia glaberrima</i>	Smooth goldfields
<i>Lathyrus cicera</i>	Wild-pea

Taxon	Common Name
<i>Legenere limosa</i>	Legenere
<i>Lemna sp.</i>	Duckweed
<i>Leontodon saxatilis ssp. longirostris</i>	Long-beaked hawkbit
<i>Lepidium nitidum var. nitidum</i>	Shining peppergrass
<i>Lepidium oblongum var. oblongum</i>	Wayside peppergrass
<i>Lilaea scilloides</i>	Flowering quillwort
<i>Limnanthes alba ssp. alba</i>	White meadowfoam
<i>Limnanthes douglasii ssp. rosea</i>	Douglas' meadowfoam
<i>Limosella acaulis</i>	Owyhee mudwort
<i>Lupinus bicolor</i>	Miniature lupine
<i>Lythrum hyssopifolia</i>	Hyssop loosestrife
<i>Matricaria discoidea</i>	Pineapple-weed
<i>Medicago polymorpha</i>	California burclover
<i>Microseris sp.</i>	Silverpuffs
<i>Mimulus guttatus</i>	Common monkeyflower
<i>Mimulus tricolor</i>	Tricolored monkeflower
<i>Montia fontana</i>	Blinks
<i>Navarretia intertexta ssp. intertexta</i>	Needle-leaved navarretia
<i>Navarretia leucocephala ssp. leucocephala</i>	White-flowered navarretia
<i>Odontostomum hartwegii</i>	Hartweg's odontostomum
<i>Parentucellia viscosa</i>	Yellow glandweed
<i>Paspalum dilatatum</i>	Dallis grass
<i>Pillularia americana</i>	American pillwort
<i>Plagiobothrys greenii</i>	Greene's popcornflower
<i>Plagiobothrys nothofulvus</i>	Rusty popcornflower
<i>Plagiobothrys stipitatus var. micranthus</i>	Stipitate popcornflower
<i>Poa annua</i>	Annual bluegrass
<i>Pogogyne douglasii</i>	Douglas' mesa mint
<i>Pogogyne zizphoroides</i>	Sacramento mesamint
<i>Polygonum aviculare</i>	Prostrate knotweed
<i>Polypogon monspeliensis</i>	Annual beard grass
<i>Populus fremontii ssp. fremontii</i>	Fremont cottonwood
<i>Portulaca oleracea</i>	Common purslane
<i>Pseudognaphalium luteoalbum</i>	Everlasting cudweed
<i>Psilocarphus brevissimus var. brevissimus</i>	Dwarf woolly-heads
<i>Psilocarphus oregonus</i>	Oregon woolly-heads
<i>Psilocarphus tenellus var. globiferus</i>	Round woolly-marbles
<i>Ranunculus aquatilis</i>	Aquatic buttercup

Taxon	Common Name
<i>Ranunculus bonariensis</i> var. <i>trisepalus</i>	Vernal pool buttercup
<i>Ranunculus muricatus</i>	Spiny-fruit buttercup
<i>Raphanus sativus</i>	Wild radish
<i>Rumex acetosella</i>	Sheep sorrel
<i>Rumex crispus</i>	Curly dock
<i>Rumex pulcher</i>	Fiddle dock
<i>Rumex salicifolius</i>	Willow dock
<i>Salix exigua</i>	Narrow leaved willow
<i>Salix laevigata</i>	Polished willow
<i>Salix lasiolepis</i>	Arroyo willow
<i>Senecio vulgaris</i>	Common groundsel
<i>Sequoia sempervirens</i>	Redwood
<i>Sidalcea calycosa</i> ssp. <i>calycosa</i>	Annual checker mallow
<i>Silene gallica</i>	Windmill-pink
<i>Silybum marianum</i>	Milk thistle
<i>Sonchus asper</i>	Prickly sow-thistle
<i>Spergularia bocconi</i>	Boccone's sand-spurrey
<i>Spergularia rubra</i>	Ruby sand-spurrey
<i>Taeniatherum caput-medusae</i>	Medusahead
<i>Thysanocarpus radians</i>	Fringe pod
<i>Tribulus terrestris</i>	Puncture vine
<i>Trifolium depauperatum</i>	Dwarf sack clover
<i>Trifolium dubium</i>	Little hop clover
<i>Trifolium glomeratum</i>	Clover
<i>Trifolium hirtum</i>	Rose clover
<i>Trifolium subterraneum</i>	Subterranean clover
<i>Trifolium variegatum</i>	White-tip clover
<i>Trifolium willdenovii</i>	Tomcat clover
<i>Triphysaria pusilla</i>	Little owl's-clover
<i>Triphysaria versicolor</i> ssp. <i>faucibarbata</i>	Yellow owl's clover
<i>Triteleia hyacinthina</i>	White brodiaea
<i>Veronica peregrina</i> ssp. <i>xalapensis</i>	Purshlane speedwell
<i>Vicia sativa</i>	Common vetch
<i>Vicia villosa</i>	Winter vetch
<i>Vulpia bromoides</i>	Brome fescue
<i>Wyethia angustifolia</i>	Narrowleaf mules ears
<i>Zeltnera muehlenbergii</i>	June centaury

Appendix B.
Wildlife Species Observed Within the NewBridge Specific Plan Study Area

Appendix B
Wildlife Observed -- NewBridge Study Area

Reptiles

Northwestern pond turtle	<i>Actinemys marmorata marmorata</i>
Slider	<i>Pseudemys scripta</i>
Racer	<i>Coluber constrictor</i>

Birds

Great egret	<i>Ardea alba</i>
Cattle egret	<i>Bubulcus ibis</i>
Turkey vulture	<i>Cathartes aura</i>
Canada goose	<i>Branta canadensis</i>
Mallard	<i>Anas platyrhynchos</i>
Cinnamon teal	<i>Anas cyanoptera</i>
Green-winged Teal	<i>Anas crecca</i>
Bufflehead	<i>Bucephala albeola</i>
Common goldeneye	<i>Bucephala clangula</i>
White-tailed kite	<i>Elanus leucurus</i>
Swainson's hawk	<i>Buteo swainsoni</i>
Red-tailed hawk	<i>Buteo jamaicensis</i>
Merlin	<i>Falco columbarius</i>
American coot	<i>Fulica americana</i>
Killdeer	<i>Charadrius vociferus</i>
Willet	<i>Catoptrophorus semipalmatus</i>
Least sandpiper	<i>Calidris minutilla</i>
Mourning dove	<i>Zenaida macroura</i>
Black phoebe	<i>Sayornis nigricans</i>
Western kingbird	<i>Tyrannus verticalis</i>
American crow	<i>Corvus brachyrhynchos</i>
Northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>
Cliff swallow	<i>Petrochelidon pyrrhonota</i>
Northern mockingbird	<i>Mimus polyglottos</i>
European starling	<i>Sturnus vulgaris</i>
Savannah sparrow	<i>Passerculus sandwichensis</i>
White-crowned sparrow	<i>Zonotrichia leucophrys</i>
Golden-crowned sparrow	<i>Zonotrichia atricapilla</i>
Dark-eyed junco	<i>Junco hyemalis</i>
Western meadowlark	<i>Sturnella neglecta</i>
Red-winged blackbird	<i>Agelaius phoeniceus</i>
Brewer's blackbird	<i>Euphagus cyanocephalus</i>
House finch	<i>Carpodacus mexicanus</i>
Burrowing owl	<i>Athene cunicularia</i>

Mammals

Black-tailed hare	<i>Lepus californicus</i>
California ground squirrel	<i>Spermophilus beecheyi</i>
Botta's pocket gopher	<i>Thomomys bottae</i>
Coyote	<i>Canis latrans</i>
Raccoon	<i>Procyon lotor</i>

Appendix C.
**Special-Status Plant Species Known to Occur in the Region of the NewBridge Specific Plan
Study Area**

Appendix C

Potentially-occurring Special-Status Plants - NewBridge Study Area

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Agavaceae				
<i>Chlorogalum grandiflorum</i> Red Hills soaproot	Fed: - State: - CNPS: Rank 1B.2	May-June	Chaparral; cismontane woodland; [serpentinite or gabbroic].	None. Soil type not present.
Alismataceae				
<i>Sagittaria sanfordii</i> Sanford's arrowhead	Fed: - State: - CNPS: Rank 1B.2	May-August	Marshes and swamps (assorted shallow freshwater).	Possible. Marginal habitat occurs in the study area.
Apiaceae				
<i>Eryngium pinnatisectum</i> Tuolumne button-celery	Fed: - State: - CNPS: Rank 1B.2	June-August	Cismontane woodland; lower montane coniferous forest; vernal pools; [mesic].	Unlikely. Study area outside (well to the west) of known occurrences of the species.
Asteraceae				
<i>Packera layneae</i> Layne's ragwort	Fed: FT State: CR CNPS: Rank 1B.2	April-July	Chaparral; cismontane woodland; [serpentinite or gabbroic].	None. Soil type not present.
<i>Wyethia reticulata</i> El Dorado County mules ears	Fed: - State: - CNPS: Rank 1B.2	May-July	Chaparral; cismontane woodland; lower montane coniferous forest; [clay or gabbroic].	None. Soil type not present.
Brassicaceae				
<i>Lepidium latipes heckardii</i> Heckard's peppergrass	Fed: - State: - CNPS: Rank 1B.2	April-May	Valley and foothill grassland (alkaline flats).	None. Site lacks alkaline soils.

Family	Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Campanulaceae					
	<i>Downingia pusilla</i>	Fed: -	March-May	Valley and foothill grassland (mesic); vernal pools.	Possible. Suitable habitat occurs in the study area.
	Dwarf downingia	State: - CNPS: Rank 2.B2			
	<i>Legenere limosa</i>	Fed: -	April-June	Vernal pools.	Occurs. Found in two pools on the east and west side of Eagles Nest Road.
	Legenere	State: - CNPS: Rank 1B.1			
Cistaceae					
	<i>Helianthemum suffrutescens</i>	Fed: -	April-June	Chaparral (often serpentinite, gabbroic, or Ione soil).	Not a valid taxon (<i>H. scoparium</i> , Jepson). Common in region. Not considered further.
	Bisbee Peak rush-rose	State: - CNPS: Rank 3.2			
Convolvulaceae					
	<i>Cuscuta obtusiflora</i> var. <i>glandulosa</i>	Fed: -	July-October	Holoparasitic on herbaceous wetland species	None. Not found in region.
	Peruvian dodder	State: - CNPS: Rank 2B.2			
Ericaceae					
	<i>Arctostaphylos myrtifolia</i>	Fed: FT	January-December	Chaparral; cismontane woodland; [acidic Ione clay or sandy].	None. Soil type not present.
	Ione manzanita	State: - CNPS: Rank 1B.2			
Fabaceae					
	<i>Trifolium hydrophilum</i>	Fed: -	April-June	Salt marshes, alkaline soil.	None. Alkaline soils not present.
	Saline clover	State: - CNPS: Rank 1B.2			
Juglandaceae					
	<i>Juglans hindsii</i>	Fed: -	April-May	Riparian.	None. Native to only three known locations (Jepson)
	Northern California black walnut	State: - CNPS: Rank 1B.1			

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Juncaceae				
<i>Juncus leiospermus ahartii</i> Ahart's dwarf rush	Fed: - State: - CNPS: Rank 1B.2	March-May	Vernal pools.	Possible. Suitable habitat occurs in the study area.
Liliaceae				
<i>Fritillaria agrestis</i> Stinkbells	Fed: - State: - CNPS: Rank 4.2	March-April	Chaparral; cismontane woodland; valley and foothill grassland; [clay, sometimes serpentinite].	None. Suitable habitat not present on site. CNPS "Plants of Limited Distribution" (Rank 4) Not considered rare. Not considered further.
Malvaceae				
<i>Fremontodendron decumbens</i> Pinehill flannelbush	Fed: FE State: CR CNPS: Rank 1B.2	April-July	Gabbro outcrops in chaparral/pine woodland.	None. Soil type not present.
<i>Hibiscus lasiocarpus var. occidentalis</i> Rose mallow	Fed: - State: - CNPS: Rank 1B.2	June-September	Freshwater wetlands/marshes	None. Suitable habitat not present.
Onagraceae				
<i>Clarkia biloba brandegeae</i> Brandegee's clarkia	Fed: - State: - CNPS: Rank 4.2	May-July	Chaparral; cismontane woodland [often on roadcuts].	CNPS "Plants of Limited Distribution" (Rank 4) Not considered rare. Not considered further.
Plantaginaceae				
<i>Gratiola heterosepala</i> Bogg's Lake hedge-hyssop	Fed: - State: CE CNPS: Rank 1B.2	April-June	Marshes and swamps (lake margins); vernal pools. Below 1200 m.	Possible. Suitable habitat occurs in the study area, and the species occurs on nearby properties.
Poaceae				
<i>Orcuttia tenuis</i> Slender Orcutt grass	Fed: FT State: CE CNPS: Rank 1B.1	May-July	Vernal pools.	Possible. Suitable habitat occurs in the study area. Known to occur on nearby properties.

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
<i>Orcuttia viscida</i> Sacramento Valley Orcutt grass	Fed: FE State: CE CNPS: Rank 1B.1	May-June	Vernal pools.	Possible. Suitable habitat occurs in the study area. Known to occur on nearby properties.
Polemoniaceae <i>Navarretia myersii myersii</i> Pincushion navarretia	Fed: - State: - CNPS: Rank 1B.1	May-May	Vernal pools.	Possible. Suitable habitat occurs in the study area.
Polygonaceae <i>Eriogonum apricum apricum</i> Ione buckwheat	Fed: FE State: CE CNPS: Rank 1B.1	July-October	Chaparral (Ione soil).	None. Soil type not present.
<i>Eriogonum apricum prostratum</i> Irish Hill buckwheat	Fed: FE State: CE CNPS: Rank 1B.1	June-July	Chaparral (Ione soil).	None. Soil type not present.
Rhamnaceae <i>Ceanothus roderickii</i> Pine Hill ceanothus	Fed: FE State: CR CNPS: Rank 1B.2	May-June	Chaparral; cismontane woodland; [serpentinite or gabbroic].	None. Soil type not present.
Rosaceae <i>Horkelia parryi</i> Parry's horkelia	Fed: - State: - CNPS: Rank 1B.2	April-June	Chaparral; cismontane woodland; [especially Ione formation].	None. Soil type not present.
Rubiaceae <i>Galium californicum sierrae</i> Eldorado bedstraw	Fed: FE State: CR CNPS: Rank 1B.2	May-June	Chaparral; cismontane woodland; lower montane coniferous forest; [gabbroic].	None. Soil type not present.

Status definitions:

Federal:

FE - Federal Endangered
FT - Federal Threatened
FPE - Federal Proposed Endangered
FPT - Federal Proposed Threatened
FC - Federal Candidate

State:

CE - California Endangered
CT - California Threatened
CR - California Rare
SSC - Species of Special Concern

CNPS (California Native Plant Society - Rank.RED Code):

Rank 1A - Extinct
Rank 1B - Plants rare, threatened, or endangered in California and elsewhere
Rank 2 - Plants rare, threatened, or endangered in California, more common elsewhere
Rank 3 - Plants about which more information is needed, a review list
Rank 4 - Plants of limited distribution, a watch list

RED Code

1 - Seriously endangered (>80% of occurrences threatened)
2 - Fairly endangered (20 to 80% of occurrences threatened)
3 - Not very endangered (<20% of occurrences threatened)

Appendix D.
**Special-Status Wildlife Species Known to Occur in the Region of the NewBridge Specific
Plan Study Area**

Appendix D
Potentially-Occurring Special Status Animals -- NewBridge Study Area

	Status*	Habitat	Probability on Project Site
Invertebrates			
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	Fed: FT State: - Other: -	Vernal pools and other temporary bodies of water in southern and Central Valley of California. Most common in smaller grass or mud bottomed swales or basalt flow depression pools in unplowed grasslands.	Likely. Suitable habitat present throughout site. Numerous documented occurrences in project region and near site. Western-most portion of site occurs within Critical Habitat for species.
Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	Fed: FE State: - Other: -	Found in vernal pools in the Central Valley of California and in the San Francisco Bay area. Inhabits vernal pools with clear to highly turbid water.	Occurs. Suitable habitat present throughout site. Numerous documented occurrences in project region and near site. Observed in larger vernal pool just east of Eagle's Nest Road. Western-most portion of site occurs in Critical Habitat for species.
Conservancy fairy shrimp <i>Brachinecta conservatio</i>	Fed: FE State: - Other: -	Endemic to the Central Valley and southern coastal regions of California. Prefers larger, turbid, cool-water vernal pools located in alluvial swales.	Unlikely. None of the eight known populations of the species occur within the project vicinity.
Insects			
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	Fed: FT State: - Other: *	Requires host plant, elderberry (<i>Sambucus</i> spp.) for most of its life cycle. Shrubs must have stem diameters at ground level of 1.0 inch or greater and shrubs must be found less than 3,000 feet in elevation. Typically riparian and upland associated.	Unlikely. Only one small individual elderberry shrub present on site near pond. Species not likely to occur in association with isolated, individual, newly sprouted shrubs. No occurrences in project vicinity.
Fish			
Central Valley steelhead <i>Oncorhynchus mykiss</i>	Fed: FT State: - Other: -	Found in the Sacramento and San Joaquin Rivers and their tributaries. Migrates through the estuary to spawning grounds. Eggs are laid in small and medium gravel and need a good water flow to survive.	None. Known only from below impassable barriers of the Sacramento and San Joaquin rivers and tributaries.
Winter-run Chinook salmon, Sacramento River <i>Oncorhynchus tshawytscha</i>	Fed: FE State: CSC Other: -	ESU covers winter-run salmon in Sacramento River and its tributaries in California, as well as two artificial propagation programs.	None. Known only from below impassable barriers of the Sacramento River, and tributaries.
Central Valley spring-run Chinook salmon <i>Oncorhynchus tshawytscha</i>	Fed: FT State: CT Other: -	ESU covers spring-run salmon in Sacramento River and primarily found in the following tributaries: Butte, Big Chico, Deer, and Mill creeks and the Feather River.	None. Known only from below impassable barriers of the Sacramento River, and tributaries.

Appendix D
Potentially-Occurring Special Status Animals -- NewBridge Study Area

	Status*	Habitat	Probability on Project Site
Delta smelt <i>Hypomesus transpacificus</i>	Fed: FT State: CT Other: -	Endemic to the Sacramento-San Joaquin Delta in coastal and brackish waters. Occurs seasonally in Suisun and San Pablo bays. Spawning usually occurs in dead-end sloughs and shallow channels.	None. Species known only from estuarine waters of the Sacramento-San Joaquin Delta.
Sacramento splittail <i>Pogonichthys macrolepidotus</i>	Fed: FT State: CSC Other:	Found in: (1) the Delta, (2) Suisun Bay, (3) Suisun Marsh, (4) Napa River, (5) Petaluma River, and (6) other parts of the Sacramento-San Joaquin Estuary. Requires flooded vegetation for spawning and rearing.	None. No suitable habitat present on site. Project site located outside of species' range. Known from Delta and associated marshes.
Amphibians			
California tiger salamander <i>Ambystoma californiense</i>	Fed: FT State: CT Other: -	Occurs in annual grassland habitat (<1500 feet) and occasionally in grassy understory of valley-foothill hardwood habitats where lowland aquatic sites are available for breeding. Breeds primarily in vernal pools.	Unlikely. Site is located outside of current range of species. Closest documented occurrences are from approximately 11 to 12 miles south and southeast of site.
Western spadefoot <i>Spea hammondi</i>	Fed: - State: CSC Other: -	Found primarily in grassland habitats, but may occur in valley and foothill woodlands. Requires vernal pools, seasonal wetlands, or stock ponds for breeding and egg laying. Prefers more turbid pools for predator avoidance.	Possible. Suitable breeding and upland habitat present throughout much of site. Several documented occurrences throughout region and near project site. Closest known occurrence is from just north of site and Keifer Blvd.
California red-legged frog <i>Rana draytonii</i>	Fed: FT State: CSC Other: -	Occurs in lowlands and foothills in deeper pools and slow-moving streams, usually with emergent wetland vegetation. Requires 11-20 weeks of permanent water for larval development.	None. No suitable aquatic habitat and no documented occurrences in project region. Not known to occur on valley floor. Closest record is from east side of Folsom Lake.
Reptiles			
Northwestern pond turtle <i>Actinemys marmorata marmorata</i>	Fed: - State: CSC Other: *	Inhabits ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Requires suitable basking sites and upland habitat for egg laying.	Occurs. Marginal-quality habitat occurs in association with industrial pond in eastern portion of site. At least two individuals observed in smaller pond located just south of rendering plant.
Giant garter snake <i>Thamnophis gigas</i>	Fed: FT State: CT Other: -	Primarily associated with marshes and sloughs, less with slow-moving creeks, and absent from larger rivers. Nocturnal retreats include mammal burrows and crevices. During the day, basks on emergent vegetation such as cattails and tules.	None. No suitable aquatic habitat for species present on site. Closest documented occurrence is from 8 to 9 miles southwest of site, in vicinity of Elk Grove.

Appendix D
Potentially-Occurring Special Status Animals -- NewBridge Study Area

	Status*	Habitat	Probability on Project Site
Birds			
White-tailed kite <i>Elanus leucurus</i>	Fed: - State: CFP Other: *	Found in lower foothills and valley margins with scattered oaks and along river bottomlands or marshes adjacent to oak woodlands. Nests in trees with dense tops.	Occurs. Suitable foraging habitat present throughout site. Potential nesting habitat limited to few trees in northwestern portion of site. Observed foraging near Eagle's Nest Road.
Bald eagle <i>Haliaeetus leucocephalus</i>	Fed: - State: CE Other: CFP	Occurs along shorelines, lake margins, and rivers. Nests in large, old-growth or dominant trees with open branches.	None. No suitable nesting or foraging habitat present on site. May venture into site on occasion. Closest record is from Bass Lake, El Dorado County.
Swainson's hawk <i>Buteo swainsoni</i>	Fed: - State: CT Other: *	Breeds in open areas with scattered trees; prefers riparian and sparse oak woodland habitats. Requires nearby grasslands, grain fields, or alfalfa for foraging. Rare breeding species in Central Valley.	Occurs. Suitable foraging habitat present within and near site. Limited nesting habitat in few trees in northwestern portion of site. Closest documented nesting is from 3 to 4 miles east of site along Deer Creek and from north, just east of Sunrise Blvd. Two
Golden eagle <i>Aquila chrysaetos</i>	Fed: - State: CFP Other: WL	Found in rolling foothill grassland with scattered trees. Nests on cliffs and in large trees in open areas.	Unlikely. Suitable foraging habitat occurs in vicinity, but no suitable nesting present. May forage in project region during winter.
Burrowing owl <i>Athene cucularia</i>	Fed: - State: CSC Other: *	Found in annual and perennial grasslands. Nests in burrows dug by small mammals, primarily ground squirrels.	Occurs. Suitable burrowing habitat present throughout site. No evidence of occurrence but documented occurrences in project region.
Purple martin <i>Progne subis</i>	Fed: - State: CSC Other: *	Breeds in riparian woodland, oak woodland, open coniferous forests. Secondary cavity nester. Requires nest sites close to open foraging areas of water or land.	None. No suitable nesting habitat present on site. Prefers woodlands and coniferous forest habitats for nesting.
Bank swallow <i>Riparia riparia</i>	Fed: - State: CT Other: *	Colonial nester near riparian and other lowland habitats. Requires vertical banks or cliffs with fine-textured, sandy soils near streams, rivers, and lakes.	None. No suitable nesting habitat present on site. May venture into site on occasion.
Grasshopper sparrow <i>Ammodramus savannarum</i>	Fed: - State: CSC Other: -	Breeds in grasslands and savannahs in rolling hills and lower mountain hillsides up to 5000 feet elevation.	Possible. Marginal quality nesting habitat located throughout site. Known nesting occurrences in annual grassland in project region.

Appendix D

Potentially-Occurring Special Status Animals -- NewBridge Study Area

	Status*	Habitat	Probability on Project Site
Tricolored blackbird <i>Agelaius tricolor</i>	Fed: - State: CSC Other: *	Colonial nester in dense cattails, tules, brambles or other dense vegetation. Requires open water, dense vegetation, and open grassy areas for foraging.	Unlikely. No suitable nesting habitat, including blackberry thickets or tall, emergent freshwater marsh vegetation, present on site.
Yellow-headed blackbird <i>Xanthocephalus xanthocephalus</i>	Fed: - State: - Other: *	Typically found in fresh and saltwater marshland with emergent vegetation.	Unlikely. No suitable nesting habitat present on site. Prefers freshwater emergent wetland with dense vegetation for nesting.

Mammals

Pallid bat <i>Antrozous pallidus</i>	Fed: - State: CSC Other: *	Occurs in grasslands, woodlands, deserts & urban habitats; open habitat required for foraging. Common in dry habitats with rocky outcrops, cliffs, and crevices for roosting. Roosts include caves, mines, bridges & occasionally hollow trees, buildings.	Unlikely. Prefers to roost in rock outcrops, crevices, and cliffs located near foraging areas. Occasionally roosts in open buildings. No significant roosting expected to occur on site.
American badger <i>Taxidea taxus</i>	Fed: - State: CSC Other: -	Occurs in dry, open soils in herbaceous, shrub, and forest habitats. Needs friable, uncultivated soil. Preys on rodents.	Possible. Two documented occurrences in project vicinity, with one from just northeast of site, and one directly to west in areas of grazed grassland with vernal pools.

*Status	Federal:	State:	Other:
	FE - Federal Endangered FT - Federal Threatened FPE - Federal Proposed Endangered FPT - Federal Proposed Threatened FC - Federal Candidate FPD - Federal Proposed for Delisting	CE - California Endangered CT - California Threatened CR - California Rare CC - California Candidate CFP - California Fully Protected CSC - California Species of Special Concern	Some species have protection under the other designations, such as the California Department of Forestry Sensitive Species, Bureau of Land Management Sensitive Species, U.S.D.A. Forest Service Sensitive Species, and the Migratory Bird Treaty Act. Raptors and their nests are protected by provisions of the California Fish and Game Code. Certain areas, such as wintering areas of the monarch butterfly, may be protected by policies of the California Department of Fish and Game. WL - CDFG Watch List