

APPENDIX B – BIOLOGICAL RESOURCES



BERKELEY
 CARLSBAD
 FRESNO
 IRVINE
 LOS ANGELES
 PALM SPRINGS
 POINT RICHMOND
 RIVERSIDE
 ROSEVILLE
 SAN LUIS OBISPO

February 8, 2018

Ali Amidy
 Aliamidy@aol.com
 PO Box 880
 Los Gatos, CA 95031

Subject: Biological Resource Assessment Update
 I-580 and Greenville Road Property, City of Livermore, Alameda County

Dear Mr. Amidy:

This letter updates the information on biological resources presented in the Biological Resources Assessment report dated November 2, 2016 (attached) prepared by LSA Associates Inc. (LSA) on your I-580 and Greenville Road Property (Site) located in Livermore, Alameda County.

METHODS

Prior to revisiting the Site, we consulted the California Natural Diversity Data Base (CNDDDB) to determine if any new records of special status species had been reported from the Livermore area. We re-surveyed the Site on February 7, 2018 to determine if habitat conditions had changed. We walked the entire Site inspecting the landscape and habitat.

RESULTS

The results of the CNDDDB review found that records for one additional plant and two additional wildlife species from the regional vicinity had been added to the database; sticky sand-spurry (*Spergularia marcotheca* var. *longistyla*), California glossy snake (*Arizona elegans occidentalis*) and grasshopper sparrow (*Ammodramus savannarum*). In addition, the federal status of the Livermore tarplant (*Deinandra baccigalupii*) is now listed as State endangered.

The sand-spurry has a California rare plant rank of 1B and both wildlife species are California species of special concern. None of these three species would occur on the site due to the absence of suitable habitat or outside of the range. The species information is provided in the table below.

Table A: Updates to Special-Status Species Potentially Occurring on the Greenville/580 Property, Alameda County, California

Species	Status*	Habitat Requirements	Potential to Occur on Site
<i>Spergularia marcotheca</i> var. <i>longistyla</i> Sticky sand-spurry	-/-/1B	Alkaline meadows, marshes, and swamps. Blooms Mar- May	None. No suitable micro-habitat (alkaline soils) on site.

Species	Status*	Habitat Requirements	Potential to Occur on Site
<i>Arizona elegans occidentalis</i> California glossy snake	--/CSC	Open grasslands within the foothills and along valley edges.	No. Only known from the east side of Altamont Pass
<i>Ammodramus savannarum</i> Grasshopper sparrow	--/CSC	Open grasslands usually associated with shrubs, within the foothills and along valley edges. Prefers to nest in tall grass areas.	No, site is too small for suitable nesting habitat.

The site visit determined that habitat conditions were essentially the same as those observed in 2016. There have been no alterations of landform or vegetation communities.

The results and recommendations in the November 2016 Biological Resource Assessment remain valid.

Please feel free to contact me or Malcolm Sproul with any questions you may have about the contents of this letter.

Sincerely,

LSA Associates, Inc.

David Muth
Senior Herpetologist



November 2, 2016

Ali Amidy
Aliamidy@aol.com

Subject: Results of Biological Resources Assessment,
I-580 and Greenville Road Property, City of Livermore, Alameda County

Dear Ali:

This letter presents the results of a biological resources assessment of your property (Study Site) located west of the I-580 west-bound freeway entrance from Northfront Road in the City of Livermore (City), Alameda County. This assessment has been prepared to identify biological resources present on and in the vicinity of the property, the potential presence of special-status species and sensitive habitats on and in its immediate vicinity, and the potential biological impacts of site development.

This letter report includes: (1) a summary of relevant state and federal regulations that may apply to the project; (2) a description of the methods used to conduct the survey; (3) a description of existing conditions on the site; (4) an analysis of the potential presence of special-status plant and animal species and sensitive habitats; and (5) recommended mitigation measures that may be necessary to support project planning/permitting efforts.

SITE LOCATION

The approximately 2.5 acre tear drop shaped Study Site is located along the eastern periphery of the City of Livermore on the north side of Interstate 580 in eastern Alameda County. The site is bounded on the north by Northfront Road (formerly a portion of Altamont Pass Road), to the south by Interstate 580 and on the eastern edge by the west bound on-ramp to 580 from Northfront Road. The property is located within Section 36 of Township 2 South, Range 2 East on the 7.5-minute USGS Altamont, California quadrangle, roughly centered at UTM 4,175,230 Northing/614,045 Easting. Lands used for livestock grazing extend to the north and east of the site. Residential developments are located to the west/northwest.

REGULATORY CONTEXT

The project site is within the general geographic range of several sensitive plant communities and special-status plant and wildlife species. Biological resources on the project site may fall under the jurisdictions and regulations of the agencies listed below and described in more detail in Attachment A:

- **U.S. Fish and Wildlife Service (USFWS).** Species listed under the federal Endangered Species Act.
- **California Department of Fish and Wildlife (CDFW).** Species listed under the State Endangered Species Act. Species of Special Concern, Streambed Alteration Agreements.



- **U.S. Army Corps of Engineers (Corps).** Fill of waters/wetlands subject to Section 404 of the Clean Water Act.
- **Regional Water Quality Control Board (RWQCB).** Water quality certification under Section 401 of the Clean Water Act, Porter-Cologne water quality standards.

East Alameda County Conservation Strategy (EACCS)

The EACCS provides a framework to protect, enhance and restore natural resources in eastern Alameda County, while improving and streamlining the environmental regulatory process for impacts resulting from infrastructure and development projects. Developed in consultation with the CDFW, USFWS and RWQCB, the EACCS enables projects to comply with state and federal regulatory requirements using consistent and standardized mitigation strategies. The EACCS provides standardized mitigation for habitats and listed species in eastern Alameda County. All signatories to the strategy, such as the City of Livermore, will require mitigation for impacts of a project as specified in the plan. The study site is located within Conservation Zone 4 of the EACCS plan area. It is not located in critical habitat for a listed species.

METHODS

Prior to conducting field work, LSA searched the California Department of Fish and Wildlife (CDFW) California Natural Diversity Data Base (CNDDDB) and the California Native Plant Society's (CNPS) On-line Inventory of Rare and Endangered Plants to obtain observation records for special status plants and animals within the Altamont, Byron Hot Springs, Livermore, Mendenhall Springs, Midway, and Tassajara 7.5 minute USGS quadrangles. Based on these searches, LSA compiled a list of special-status species and habitats known to occur in the vicinity of the Study Site. This list was used as a reference for field surveys.

For the purposes of this report, special-status species are defined as follows:

- Species that are listed, formally proposed, or designated as candidates for listing as threatened or endangered under the federal Endangered Species Act (ESA).
- Species that are listed, or designated as candidates for listing, as rare, threatened, or endangered under the California Endangered Species Act (CESA).
- Plant species on Lists 1B and 2 in the California Native Plant Society (CNPS) *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2009).
- Animal species designated as Species of Special Concern by CDFW.
- Species that meet the definition of rare, threatened, or endangered under Section 15380 of the California Environmental Quality Act guidelines.
- Species considered to be a taxon of special concern by local agencies.



A field survey of the Study Site was conducted by LSA staff biologist David Muth on September 14, 2016. During the visit, he assessed the current habitat conditions and evaluated the potential to support special-status plant and/or animal species, as well as sensitive habitats. Surveys focused on observations of plants and animals or evidence of their presence, as well as assessing the suitability of existing habitats for special-status species. All observations were recorded in field notes and on maps.

Nomenclature for vegetation and plant communities used in this report is based on multiple sources, primarily *A Manual of California Vegetation* (Sawyer and Keeler-Wolf, 1995). Plant taxonomy and nomenclature follows Baldwin et al (2012). Common and scientific names for animals are based on Crother (2008) for amphibians and reptiles, the American Ornithologists' Union (AOU) *Check-list of North American Birds* (AOU 1998) for birds, and Bradley et al. (2014) for mammals.

The USDA Web Soil Survey (<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>) was reviewed to determine soil types on the site and identify if any soil types (e.g., sandy, acidic, or highly alkaline soils; serpentinite, etc.) that may support special-status plants and/or sensitive communities, including wetlands, are present.

RESULTS

Existing Conditions

The property is relatively flat and surrounded on all sides by roads. Soils on the Study Site consist of the moderately to well drained San Ysidro loam. This soil is not considered alkaline or to include any extensive clay components.

Vegetation consists of a mix of non-native annual weeds and grasses best described as an annual grassland/ruderal community. The Study Site shows signs of occasional disturbance by disking and the soil surface near the center of the property was covered by a shallow layer of gravel. Two barren dirt pullout areas are located along Northfront Road. A chainlink fence separates the southern edge of the property from the adjacent freeway.

The annual grassland/ruderal community on the Study Site is dominated by non-native annual species such as oats (*Avena* sp.), brome grasses (*Bromus hordaceus* and *B. diandrus*), and weeds including mustards (*Brassica nigra*, *B. rapa* and *Herschfeldia incana*), prickly lettuce (*Lactuca serriola*), and Italian thistle (*Carduus pycnocephalus*). The majority of the annual vegetation had died for the year. A few late blooming species, stinkweed (*Dittrichia graveolens*), gum plant (*Grindelia* sp.), and three-rayed tarplant (*Deinandra lobbiai*), were also observed.

No drainages are located on the property and water appears to sheet flow over the Study Site. A small (approximately 10' by 10'), topographic low was located near the center of the site. This feature could pool shallow amounts of water (1-2 inches) during and immediately after a heavy rainfall, but appears unlikely to remain more than 24 hours. No plant species indicative of hydric conditions were observed.



The roadways surrounding the Study Site, the volume of existing traffic and lack of cover likely eliminate use of the site by larger wildlife species. Birds such as killdeer, European Starling, Brewer's blackbird and house finch would be expected to forage on the property. Smaller fossorial species, such as pocket gopher, and western fence lizards reside here. Numerous gopher and mouse burrows were observed during the site visit.

Regulated Waters and Wetlands

No features subject to the jurisdiction of the ACOE or RWQCB were observed on the Study Site. The topographic low area observed near the center of the property does not support conditions meeting the definition of a wetland.

Other Sensitive Habitats

CDFW monitors the status of uncommon and declining plant communities/sensitive habitats in California. No declining communities/sensitive habitats were observed on the Study Site during our visit.

Special-Status Plant Species

The CNDDDB and CNPS report 19 special-status plant species occurring within grassland type communities in the vicinity of the property (Table A). All of these species require specific micro-habitat components not present within or adjacent to the Study Site (i.e., alkaline or clay soils, vernal pools, etc.). Historical land disturbance (grazing, freeway construction) and alterations of the site further reduce suitability for these species that have restricted tolerances. No special status plants were observed during the site visit. Three-rayed tarplant, a common relative of Livermore tarplant, was present.

Special-Status Animal Species

Based on CNDDDB records and LSA's knowledge of wildlife in the Livermore and Altamont area, there are 11 special-status wildlife species (Table B) expected to occur in the vicinity of the Study Site. Conditions on the property are marginally suitable for two of these species, California tiger salamander, and western burrowing owl.

Western burrowing owls live in underground burrows within grassland habitats and are tolerant of human activity. No burrows suitable for use by burrowing owl were observed on the property during the site visit and no evidence of burrowing owl use (pellets, feathers) was detected. Burrowing owls are present in the Livermore Valley and they could forage on the site.

California tiger salamanders (CTS) also live in rodent burrows within grassland habitats, breeding in nearby seasonal pools/ponds. Adult CTS have been documented to occur within 1.3 miles of breeding habitat. The closest to the project site the species has been documented breeding is in Frick Lake and a seasonal pond, both located approximately $\frac{3}{4}$ mile from the site. Adults have been observed in upland habitat in the site vicinity. The closest documented location was approximately 0.40 mile to the north. The small size and fossorial behavior of this species would allow it to reside



on the project site during the non-breeding season. Although the study site is surrounded by roads making access difficult, if an adult salamander was able to reach it, the salamander could inhabit the site.

POTENTIAL IMPACTS

The proposed project will remove 2.5 acres of non-native/ruderal grasslands suitable as marginal California tiger salamander upland habitat. The grasslands also provide marginal habitat for western burrowing owl. The alteration of the habitat for the project could kill or harm either of these species occurring on or passing through the Study Site.

Project construction could potentially disrupt active bird nests on or adjacent to the Study Site if any were present during construction activities. Nests could be destroyed or abandoned.

RECOMMENDATIONS

In order to conform with the mitigation and compensation requirements of EACCS the following would need to be implemented:

Habitat Compensation. Provide compensation for the loss of California tiger salamander habitat. The ratio, depending on the location of the mitigation site and the quality of habitat at both the impact and mitigation site would be from 2.5 to 4:1 (acres protected:acres lost).

Mitigation Measures

The following species specific mitigation measures from Table 3.3 in the EACCS plan would be project conditions of approval:

AMPH-2:

- A qualified Biologist approved by the USFWS and the CDFW will conduct a preconstruction survey for special-status species within 48 hours of the initiation of any construction activities (i.e., staging, clearing, grading, tree trimming or removal). If a listed species is detected, halt all work until the animal has left the work area. If an unlisted species is detected it may be moved to a safe location.
- A service-approved biologist will be present for all initial ground disturbing activities.
- No monofilament plastic will be used for erosion control.
- Construction personnel will inspect open trenches in the morning and evening for trapped amphibians.
- If necessary, a qualified biologist possessing a valid ESA Section 10(a)(1)(A) permit or Service approved under an active Biological Opinion, will be contracted to trap and to move amphibians to nearby suitable habitat if amphibians are found inside the fenced area.



- Project construction should schedule work activities for the dry season when potential impacts to California tiger salamander would be minimal (May 1-October 15).

BIRD-2:

- Conduct a preconstruction survey for nesting birds by a qualified biologist no more than 14 days prior to the initiation of construction related activity (i.e., staging, clearing, grading, tree trimming or removal) if this activity occurs between February 1 thru July 31.
- If active bird nests are found on or adjacent to the site, an exclusion zone should be established around the nest as specified by the qualified biologist. The exclusion zone should be centered on the nest and have a radius of 50 feet for passerines and other non-raptors, 200 feet for raptors and 250 feet for burrowing owls. Active nests should be monitored weekly to ensure that the exclusion zones are intact and that the young are developing. The exclusion zones should remain in place until the young have fledged and are foraging independently as determined by a qualified biologist.
- If burrowing owls are present at the site during the non-breeding season, a qualified biologist will establish an exclusion zone of at least 150 feet.
- If an effective exclusion area for burrowing owls cannot be established, an experienced burrowing owl biologist will develop a site specific plan to minimize the potential to affect the reproductive success of the owls.

The project will also need to incorporate the measures specified in Table 3-2 *General Avoidance and Mitigation Measures to Reduce Effects on Focal Species* of the EACCS Plan (attached).

Please contact me if you have any questions or require additional information.

Sincerely,

LSA Associates, Inc.

Malcolm J. Sproul
Principal

Enclosures: Attachment A – Regulatory Context
Table A: Special-Status Plant Species Potentially Occurring on the Greenville/580 Property, Alameda County, CA
Table B: Special-Status Wildlife Species Potentially Occurring on the Greenville/580 Property, Alameda County, CA
Table 3-2: General Avoidance and Minimization Measures to Reduce Effects on Focal Species



REFERENCES

- American Ornithologists' Union. 1998. *Check-list of North American Birds*, seventh edition. Washington, D.C. American Ornithologists' Union.
- Bradley, R.D. et. al. 2014. Revised checklist of North American Mammals North of Mexico. Occasional Papers, Museum of the Texas Tech University. No. 327. 2 October 2014.
- 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, CA. 1568 pp.
- ICP International. 2010. *East Alameda County Conservation Strategy*. Final Draft. Prepared for East Alameda County Conservation Strategy Steering Committee, Livermore, CA.
- California Native Plant Society (CNPS). 2016. Inventory of Rare and Endangered Plants (online edition, v7-10c). California Native Plant Society. Sacramento, CA.
- Crother, B.I., editor. 2008. Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, pp. 1-84. SSAR Herpetological Circular 37.
- Sawyer, J.O., and T. Keeler-Wolf. 1995. *A Manual of California Vegetation*. California Native Plant Society Press, Sacramento, CA.
- Web Soil Survey. 2015. <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>, accessed on 4 February 2015.

ATTACHMENT A: REGULATORY CONTEXT

The project site is within the general geographical range of several sensitive plant communities and special-status plant and wildlife species. Biological resources on the project site may fall under the jurisdictions and regulations of the agencies listed below:

U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service (USFWS) has jurisdiction over federally-listed threatened and endangered species under the federal Endangered Species Act. The Endangered Species Act protects listed species from harm or “take” which is broadly defined as to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.” An activity can be defined as a “take” even if it is unintentional or accidental.

An endangered species is one which is in danger of becoming extinct throughout all or a significant portion of its range. A threatened species is one that is likely to become endangered within the foreseeable future. In addition to endangered and threatened species, which are legally-protected under the federal Endangered Species Act, the USFWS maintains a list of candidate species. Candidate species are specifically included on a list published in the federal register. Federal candidate species are not afforded legal protection under the federal Endangered Species Act.

California Department of Fish and Wildlife

The CDFW has jurisdiction over state-listed threatened, endangered, and rare (plant) species under the state Endangered Species Act. In addition, species proposed for listing under the State act are also protected until a determination is made on the listing proposal. The State and federal lists are generally similar, although a few species present on one list may be absent from the other list. The State also maintains lists of special-status wildlife species identified as Species of Special Concern. These are species whose status is being monitored due to one or more threats. Species on these lists are not afforded legal protection.

The CDFW also exerts jurisdiction over the bed and bank of watercourses according to the provisions of Section 1601 to 1603 of the Fish and Game Code. The CDFW typically requires a Streambed Alteration Agreement for the fill or removal of material from any natural drainage. The jurisdiction of the CDFW under Section 1600 of the Fish and Game Code extends to the top of bank of a stream.

U.S. Army Corps of Engineers

Under Section 404 of the Clean Water Act, the Corps is responsible for regulating the discharge of fill material into waters of the United States. Waters of the U.S. and their lateral limits are defined in 33 Code of Federal Regulations (CFR) Part 328.3 (a) and include streams that are tributary to navigable waters and their adjacent wetlands. Wetlands that are not adjacent to waters of the U.S. are termed “isolated wetlands” and may be subject to Corps jurisdiction.

In general, a Corps permit must be obtained before placing fill in wetlands or other waters of the U.S. The type of permit depends on the acreage involved and the purpose of the proposed fill. Nationwide Permits are available for projects that are anticipated to have minimal impacts on waters of the U.S. and wetlands and meet the general terms of the specific Nationwide Permit and the standard conditions for all Nationwide Permits. An Individual Permit is required for projects that result in more than a “minimal” impact on wetlands. The Corps will be required to consult with the USFW under Section 7 of the ESA if a project subject to Clean Water Act permitting will result in take of a federally listed species.

Regional Water Quality Control Board

Pursuant to Section 401 of the Clean Water Act, projects that require a permit from the Corps under Section 404 must also obtain water quality certification from the Regional Water Quality Control Board (RWQCB). This certification ensures that the project will uphold state water quality standards. The RWQCB requires mitigation for any loss of jurisdictional area.

National Oceanic and Atmospheric Administration: Fisheries

Like the U.S. Fish and Wildlife Service (USFWS), the National Oceanic and Atmospheric Administration: Fisheries (NOAA) has jurisdiction over federally listed threatened and endangered species under the federal Endangered Species Act. The NOAA jurisdiction is restricted to marine and anadromous wildlife species such as salmon and steelhead.

Table A: Special-Status Plant Species Potentially Occurring on the Greenville/580 Property, Alameda County, California

Species	Status*	Habitat Requirements	Potential to Occur on Site
<i>Astragalus tener</i> var. <i>tener</i> Alkali milk-vetch	-/-/1B	Playas, grasslands, vernal pools. Especially in adobe and alkaline soils. Blooms Mar - Jun	None. No suitable micro-habitat (alkaline soils) on site.
<i>Atriplex cordulata</i> var. <i>cordulata</i> Heartscale	-/-/1B	Alkaline flats and scalds, grasslands, and chenopod scrub. Blooms May - Oct	None. No suitable micro-habitat (alkaline soils) on site.
<i>Atriplex depressa</i> Brittlescale	-/-/1B	Alkaline grasslands, chenopod scrub, and playas. Blooms May - Oct	None. No suitable micro-habitat (alkaline soils) on site.
<i>Atriplex minuscula</i> Lesser saltscale	-/-/1B	Alkaline grasslands, chenopod scrub, and playas. Prefers sandy soils. Blooms May - Oct	None. No suitable micro-habitat (alkaline soils) on site.
<i>Blepharizonia plumosa</i> Big tarplant	-/-/1B	Dry annual grasslands with clay or clay-loam soils. Often on slopes. Blooms Jul - Oct	None. No suitable micro-habitat (clay soils) on site.
<i>California macrophylla</i> Large-leaf filaree	-/-/1B	Shallow clay soils in grasslands and cismontane woodlands. Blooms Mar - Jul	None. No suitable micro-habitat (clay soils) on site.
<i>Centromadia parryi</i> ssp. <i>congdonii</i> Congdon's tarplant	-/-/1B	Grasslands, occasionally on alkaline soils. Blooms Jun - Nov	None. No suitable micro-habitat (alkaline soils) on site.
<i>Cloropyron molle</i> ssp. <i>hispidum</i> Hispid bird's-beak	-/-/1B	Alkaline grasslands, meadows, and playas. Blooms Jun - Sept	None. No suitable micro-habitat (alkaline soils) on site.
<i>Cloropyron palmatum</i> Palmate-bracted bird's-beak	FE/CE/1B	Alkaline grasslands and chenopod scrub. Blooms Jul - Sept	None. No suitable micro-habitat (alkaline soils) on site.
<i>Deinandra bacigalupii</i> Livermore tarplant	-/CE/1B	Alkaline meadows. Blooms Jun - Oct	None. No suitable micro-habitat (alkaline soils) on site.
<i>Eryngium spinosepalum</i> Spiny-sepaed button-celery	-/-/1B	Playas, grasslands, vernal pools. Especially in adobe and alkaline soils. Blooms April-June	None. No suitable micro-habitat (vernal pools, alkaline soils) on site.
<i>Eschscholzia rhombipetala</i> Diamond-petaled poppy	-/-/1B	Grasslands, especially on alkaline or clay soils. Blooms March-April	None. No suitable micro-habitat (clay or alkaline soils) on site.
<i>Extriplex joaquiniana</i> San Joaquin saltbush	-/-/1B	Alkaline grasslands, meadows, and chenopod scrub. Blooms Apr - Sept	None. No suitable micro-habitat (alkaline soils) on site.

Species	Status*	Habitat Requirements	Potential to Occur on Site
<i>Navarretia prostrata</i> Prostrate vernal pool navarretia	-/-/1B	Playas, grasslands, vernal pools. Especially in vernal pools and alkaline soils. Blooms April-July	None. No suitable micro-habitat (vernal pools, alkaline soils) on site.
<i>Plagiobothrys glaber</i> Hairless popcorn-flower	-/-/1A	Alkaline meadows, marshes, and swamps. Blooms Mar- May	None. No suitable micro-habitat (alkaline soils) on site. Considered extinct.
<i>Puccinellia simplex</i> California alkali grass	-/-/1B	Alkaline meadows, marshes, and lake edges. Blooms Mar- May	None. No suitable micro-habitat (alkaline soils) on site.
<i>Trifolium depauperatum</i> var. <i>hydrophilum</i> Saline clover	-/-/1B	Wet, alkaline grasslands, marshes, and swamps. Blooms Apr - Jun	None. No suitable micro-habitat (alkaline soils) on site.
<i>Tropidocarpum capparideum</i> Caper-fruited trepidocarpum	-/-/1B	Grasslands, especially on alkaline hills. Blooms Mar - Apr	None. No suitable micro-habitat (alkaline soils) on site.

* Status:

FE - Federally-listed as endangered

CE - California state-listed as endangered

1A - California Native Plant Society; plants presumed extinct in California

1B - California Native Plant Society; plants rare, threatened, or endangered in California and elsewhere

Table B: Special-Status Wildlife Species Potentially Occurring on the Greenville/580 Property, Alameda County, California

Species	Status*	Habitat Requirements	Suitable Habitat Present on Site
Invertebrates			
<i>Branchinecta lynchi</i> Vernal pool fairy shrimp	FT/--	Grassy or mud-bottomed swales filled with rainwater in unplowed grasslands. Occasionally found in sandstone depressions as well.	No.
Amphibians			
<i>Ambystoma californiense</i> California tiger salamander	FT/CT	Quiet water of ponds, reservoirs, lakes, temporary rain pools, and streams for breeding. Open woodland and grassland with available refuges such as burrows used as upland habitat.	Marginal. Isolated by roads.
<i>Rana draytonii</i> California red-legged frog	FT/CSC	Inhabits marshes, slow parts of streams, lakes, reservoirs, ponds, and other permanent water with emergent vegetation. When not breeding may be found in damp woods and uplands.	No.
Reptiles			
<i>Actinemys (=Emys) marmorata</i> Western pond turtle	--/CSC	Permanent or nearly permanent water (fresh to brackish) in a wide variety of habitat types. Requires basking sites and upland areas for egg laying.	No.
Birds			
<i>Circus cyaneus</i> Northern harrier	--/CSC	Marshlands, grasslands, meadows, and desert sinks. Mostly found in flat, or hummocky open areas. Nests on ground.	No, grasslands too short for nesting.
<i>Athene cunicularia</i> Burrowing owl	--/CSC	Open, dry, nearly or quite level grassland, prairie, and desert floor. Subterranean nester that generally uses existing mammal burrows (especially of ground squirrels), but will also excavate its own burrows.	Yes for foraging, no suitable burrows observed on site.
<i>Lanius ludovicianus</i> Loggerhead Shrike	--/CSC	Open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low or sparse herbaceous cover.	No, no suitable nesting sites.
<i>Agelaius tricolor</i> Tricolored blackbird	--/CC	Breeds near fresh water, preferably emergent wetland but also in thickets of willow and other shrubs.	No, no suitable marsh or scrub.
Mammals			
<i>Vulpes macrotis mutica</i> San Joaquin kit fox	FE/CT	Grasslands with available den sites and small mammal prey.	No. No suitable burrows observed on site.
<i>Taxidea taxus</i> American Badger	--/CSC	Grasslands and small mammal prey.	No. No suitable burrows observed on site.
<i>Neotoma fuscipes annectens</i> San Francisco dusky-footed woodrat	--/CSC	Woodland and riparian habitats.	No, no suitable woody vegetation

*Status:

FT = Federally listed as threatened; FE = Federally listed as endangered;

CT = California State listed as threatened; CC = California Listing Candidate; CSC = California species of special concern

Table 3-2. General Avoidance and Minimization Measures to Reduce Effects on Focal Species

AMM Code	Avoidance and Minimization Measure
GEN-01	Employees and contractors performing construction activities will receive environmental sensitivity training. Training will include review of environmental laws and Avoidance and Minimization Measures (AMMs) that must be followed by all personnel to reduce or avoid effects on covered species during construction activities.
GEN-02	Environmental tailboard trainings will take place on an as-needed basis in the field. The environmental tailboard trainings will include a brief review of the biology of the covered species and guidelines that must be followed by all personnel to reduce or avoid negative effects to these species during construction activities. Directors, Managers, Superintendents, and the crew foremen and forewomen will be responsible for ensuring that crewmembers comply with the guidelines.
GEN-03	Contracts with contractors, construction management firms, and subcontractors will obligate all contractors to comply with these requirements, AMMs.
GEN-04	The following will not be allowed at or near work sites for covered activities: trash dumping, firearms, open fires (such as barbecues) not required by the activity, hunting, and pets (except for safety in remote locations).
GEN-05	Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed areas to the extent practicable.
GEN-06	Off-road vehicle travel will be minimized.
GEN-07	Vehicles will not exceed a speed limit of 15 mph on unpaved roads within natural land-cover types, or during off-road travel.
GEN-08	Vehicles or equipment will not be refueled within 100 feet of a wetland, stream, or other waterway unless a bermed and lined refueling area is constructed.
GEN-09	Vehicles shall be washed only at approved areas. No washing of vehicles shall occur at job sites.
GEN-10	To discourage the introduction and establishment of invasive plant species, seed mixtures/straw used within natural vegetation will be either rice straw or weed-free straw.
GEN-11	Pipes, culverts and similar materials greater than four inches in diameter, will be stored so as to prevent covered wildlife species from using these as temporary refuges, and these materials will be inspected each morning for the presence of animals prior to being moved.
GEN-12	Erosion control measures will be implemented to reduce sedimentation in wetland habitat occupied by covered animal and plant species when activities are the source of potential erosion problems. Plastic mono-filament netting (erosion control matting) or similar material containing netting shall not be used at the project. Acceptable substitutes include coconut coir matting or tackified hydroseeding compounds.
GEN-13	Stockpiling of material will occur such that direct effects to covered species are avoided. Stockpiling of material in riparian areas will occur outside of the top of bank, and preferably outside of the outer riparian dripline and will not exceed 30 days.
GEN-14	Grading will be restricted to the minimum area necessary.
GEN-15	Prior to ground disturbing activities in sensitive habitats, project construction boundaries and access areas will be flagged and temporarily fenced during construction to reduce the potential for vehicles and equipment to stray into adjacent habitats.
GEN-16	Significant earth moving-activities will not be conducted in riparian areas within 24 hours of predicted storms or after major storms (defined as 1-inch of rain or more).
GEN-17	Trenches will be backfilled as soon as possible. Open trenches will be searched each day prior to construction to ensure no covered species are trapped. Earthen escape ramps will be installed at intervals prescribed by a qualified biologist.

