

# **ROONEY RANCH WIND REPOWERING PROJECT FINAL HABITAT CONSERVATION PLAN**

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# Acronyms and Abbreviations

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AMM	avoidance and minimization measure
Applicant or Rooney	Rooney Ranch, LLC
APWRA	Altamont Pass Wind Resource Area
BMP	best management practice
BO	biological opinion
CDFW	California Department of Fish and Wildlife
CFR	Code of Federal Regulations
DPS	distinct population segment
EA	environmental assessment
EACCS	East Alameda County Conservation Strategy
EACCS PBO	East Alameda County Conservation Strategy programmatic biological opinion
EIS	environmental impact statement
ESA	Endangered Species Act
FR	Federal Register
HCP	habitat conservation plan
HCP Handbook	Habitat Conservation Planning and Incidental Take Permit Processing Handbook
I-	Interstate
kV	kilovolts
MW	megawatt
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOA	Notice of Availability
O&M	operation and maintenance
PCE	primary constituent element
PG&E	Pacific Gas and Electric Company
PEIR	Altamont Pass Wind Resource Area Repowering Program Environmental Impact Report
Permittee project	permit holder Rooney Ranch Wind Repowering Project
SWPPP	Storm Water Pollution Prevention Plan
USC	United States Code
USFWS	U.S. Fish and Wildlife Service

## 1.1 Overview of the Habitat Conservation Plan

The purpose of this habitat conservation plan (HCP) is to support an application by Rooney Ranch, LLC (applicant or Rooney), to the U.S. Fish and Wildlife Service (USFWS) for a 37-year incidental take permit (ITP) pursuant to Section 10 of the federal Endangered Species Act (ESA) (16 United States Code [USC] 1531 et seq.) for activities associated with the Rooney Ranch Wind Repowering Project (project) in the Altamont Pass Wind Resource Area (APWRA) in eastern Alameda County, California (Figure 1). The project is located within the range of three federally listed species that have the potential to be affected by proposed activities: California red-legged frog (*Rana draytonii*), California tiger salamander (*Ambystoma californiense*) (central California Distinct Population Segment [DPS]), and San Joaquin kit fox (*Vulpes macrotis mutica*). Rooney proposes to avoid, minimize, and mitigate potential impacts on these species through implementation of this HCP's conservation strategy. This strategy uses many of the recommendations outlined in the East Alameda County Conservation Strategy [EACCS] and associated programmatic biological opinion (EACCS PBO) (U.S. Fish and Wildlife Service 2012), modified as appropriate for the specific needs of this HCP. Overall, the project is expected to result in approximately 1.8 acres of permanent impacts and 45.9 acres of temporary impacts from construction and ongoing maintenance that together will be mitigated by providing 51.3 acres of conservation lands. This figure is based on a 3:1 mitigation ratio for permanent impacts and a 1:1 mitigation ratio for temporary impacts. Total final mitigation acreage may vary based on discussion with USFWS and the proposed location of the mitigation site.

Additionally, Rooney is subject to the local land use approval of the City of Santa Clara, which approved the project on June 25, 2019, as a tiered project under the *Altamont Pass Wind Resource Area Repowering Program Environmental Impact Report* (PEIR; Alameda County Community Development Agency 2014). Under the terms of this approval, Rooney is required to implement all mitigation measures in the PEIR, many of which address species covered in this HCP. Additionally, numerous other non-listed special-status species (e.g., burrowing owl [*Athene cunicularia*]) are addressed in the PEIR, and Rooney is required to implement all applicable measures for these species as well.

## 1.2 Project Overview

Rooney is planning to repower the project, consisting of two parcels of land owned by the City of Santa Clara (City) in the Alameda County (County) portion of the APWRA. The parcels are north of Interstate (I-) 580, with access from Altamont Pass Road. The project would consist of the installation of large-scale modern wind turbines with generating capacities between 2.3 and 4.0 megawatts (MW), all generally similar in size and appearance, to develop up to 25.1 MW. The proposed layout would include seven new-generation wind turbines (Figure 2). The final layout could vary slightly based on resource constraints. Generally, existing roads would be used where possible, with temporary widening of approximately 2.7 miles of roads and construction of approximately 0.3 mile of new roads. An existing onsite substation, consisting of an approximately

0.2-acre graveled footprint area, may be expanded by 0.1 acre to accommodate installation of new, upgraded equipment. Rooney's proposed project schedule is shown in Table 1. Covered activities are described in Chapter 2, *Proposed Covered Activities*.

**Table 1. Anticipated Project Schedule and Habitat Conservation Plan Duration**

Activity	Timeframe	Duration (years)
Obtain USFWS incidental take permit	October 2020 <sup>a</sup>	–
Construction	October 2020–December 2021 <sup>b</sup>	1
Project operation	December 2021–December 2056	35
HCP expiration	December 2056	–
	Total	36

<sup>a</sup> Expected permit issuance date. Actual permit issuance date may be different. The permit will dictate the exact permit term and ultimate expiration date.

<sup>b</sup> Ground-disturbing activities are anticipated to start in April 2021.

### 1.3 Plan Area/Permit Areas

The plan area is the geographic area where the incidental take authorization will apply, where all covered activities would take place, and where all existing project components (i.e., wind turbines, foundations, electrical facilities, roads, and other supporting infrastructure) are located. The plan area comprises two separate permit areas: the project permit area and the mitigation permit area. The project permit area encompasses approximately 580 acres within the APWRA in eastern Alameda County, California, consisting of two City-owned parcels between I-580 to the south and Altamont Pass Road to the north. The repowering project would be constructed entirely within the project permit area, which includes an entrance and access road crossing the Alameda County right-of-way and privately owned parcels between Altamont Pass Road and the properties. The mitigation permit area comprises potential mitigation lands, still to be identified, that Rooney, in coordination with USFWS, is evaluating in Alameda County.

### 1.4 Duration of Permits

The proposed duration of the HCP, encompassing construction, operation and maintenance, and compensatory mitigation activities, is 36 years (Table 1). In accordance with the guidance provided in the *Habitat Conservation Planning and Incidental Take Permit Processing Handbook* (HCP Handbook) (U.S. Fish and Wildlife Service and National Marine Fisheries Service 2016), Rooney has proposed this permit term in consideration of the following factors.

- The duration of the planned covered activities.
- Whether available information is sufficient to develop a conservation program and determine effects on covered species over the proposed permit duration.
- How much certainty there is that the conservation plan will offset impacts on covered species.
- How well the monitoring and adaptive management program addresses risk and uncertainty.
- Whether the funding strategy for the conservation program is sufficient for the proposed permit duration.

## 1.5 Permit Holder

Rooney would be the proposed permit holder (Permittee) under the HCP. ESA Section 10(a)(2)(A) requires that each applicant for an ITP submit a *conservation plan* that specifies, among other things, the impacts that are likely to result from the taking; the measures the permit applicant will undertake to minimize and mitigate impacts, including funding to implement these measures; and alternative actions considered and reasons why such alternatives were not selected. Rooney has prepared this HCP pursuant to the requirements of ESA Section 10(a)(1)(B) as well as the permit issuance criteria described in 50 Code of Federal Regulations (CFR) Sections 13.21, 17.22(b), and 17.32(b). The Permittee's future responsibilities and commitments as an ESA Section 10(a)(2)(B) ITP holder are discussed in Chapter 6, *Plan Implementation*, and Chapter 7, *Funding and Assurances*, of this HCP.

## 1.6 Covered Species

Rooney is requesting incidental take coverage for three federally listed species that have the potential to occur in the plan area: California tiger salamander, California red-legged frog, and San Joaquin kit fox. All other federally listed plant and wildlife species either do not have the potential to occur in the project permit area (e.g., giant garter snake) or are unlikely to be affected by covered activities because key habitat elements are not present or would be avoided (e.g., Alameda whipsnake, longhorn fairy shrimp). Table 2 summarizes federally listed species occurring or with potential to occur in the region surrounding the project and the rationale for coverage or exclusion from coverage under this HCP.

## 1.7 Regulatory Framework

USFWS's issuance of an ITP under the ESA is subject to all applicable federal regulatory requirements associated with any federal action.

### 1.7.1 Federal Endangered Species Act

The ESA provides for the conservation of listed endangered or threatened species or candidates for listing and the ecosystems on which they depend. USFWS has jurisdiction over federally listed plants, invertebrates, land mammals, birds, and resident fish, while National Marine Fisheries Service (NMFS) has jurisdiction over anadromous fish, marine fish, and marine mammals.

*Endangered* species, subspecies, or DPSs are in danger of extinction through all or a significant portion of their range. *Threatened* species, subspecies, or DPSs are likely to become endangered in the near future. The ESA prohibits the take of endangered or threatened wildlife species, except under specifically permitted circumstances. *Take* is defined as harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct (16 USC 1532; 50 CFR 17.3). *Harm* includes significant habitat modification or degradation where it kills or injures wildlife by significantly impairing essential behavioral patterns (50 CFR 17.3). Actions that cause take can result in civil or criminal penalties.

**Table 2. Evaluation of Federally Listed Species in the Project Permit Area**

Species Name	Status <sup>a</sup>		Criteria <sup>b</sup>			Proposed for Coverage <sup>c</sup>	Notes
	State	Federal	Occur	Impact	Data		
<b>Invertebrates</b>							
Longhorn fairy shrimp <i>Branchinecta longiantenna</i>	-	E	M	N	Y	N	Numerous rock outcrops are present in the western portion of the project permit area; nine contain various-sized rock pools that provide habitat for longhorn fairy shrimp and vernal pool fairy shrimp. However, rock outcrops will be avoided because they are elevated above proposed road improvement and staging areas. Exclusion fencing will be placed between rock outcrops and staging areas to keep workers out of this habitat. Further, visual monitoring of airborne dust and additional watering on windy days to control dust will avoid direct and indirect impacts.
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	-	T	M	N	Y	N	Two small ephemeral ponds and one stock pond are located onsite. Work on an upslope access road will be approximately 240 feet from one ephemeral pond (P1). The pond hydrology (i.e., surface and subsurface flow) is unlikely to be affected because work will be conducted in the dry season, because of the distance from the work site to the pond, because of the presence of a non-project road between the work site and the pond, and because stormwater measures will be implemented to prevent erosion (Hydrologist Memo 2019). Work would be more than 250 feet from the other two ponds and would consequently not affect their hydrology.
Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	-	E	M	N	Y	N	See discussion for vernal pool fairy shrimp.
<b>Amphibians</b>							
California tiger salamander <i>Ambystoma californiense</i>	T	T	Y	Y	Y	Y	California tiger salamanders have not been documented in the project permit area but are known to occur immediately outside it (California Department of Fish and Wildlife 2017).

Species Name	Status <sup>a</sup>		Criteria <sup>b</sup>			Proposed for Coverage <sup>c</sup>	Notes
	State	Federal	Occur	Impact	Data		
California red-legged frog <i>Rana draytonii</i>	-	T	Y	Y	Y	Y	The project permit area is entirely within designated critical habitat for California red-legged frog (Unit ALA-2). California red-legged frogs have not been documented in the project permit area but are known to occur within dispersal distance of it (California Department of Fish and Wildlife 2017).
<b>Reptiles</b>							
Alameda whipsnake <i>Masticophis lateralis euryxanthus</i>	T	T	N	N	Y	N	Alameda whipsnake typically occurs in chaparral and scrub communities that provide a large prey base of lizards and adequate cover and foraging opportunities. The closest scrub habitats are approximately 2.5 miles northwest of the project permit area. Based on the lack of suitable habitat within the project permit area and the distance from suitable core habitat, Alameda whipsnake is not likely to be adversely affected by covered activities.
Giant garter snake <i>Thamnophis gigas</i>	T	T	N	N	Y	N	Suitable foraging and habitat is not present in the project permit area and there are no nearby records. Habitat for giant garter snake consists of perennial water and freshwater marsh habitat, neither of which are present in the project permit area.
<b>Birds</b>							
California condor <i>Gymnogyps californianus</i>	E	E	N	N	N	N	California condors are not currently known to occur in the project permit area. Recent GPS data from condors with GPS tags indicate that condors have flown within 8 miles of the project permit area. While the use of the project permit area by condors is possible in the future, current range and use of the area by condors does not indicate that take is reasonably certain to occur at this time, and the criteria used in this HCP for proposing species for coverage are not met.
<b>Mammals</b>							

Species Name	Status <sup>a</sup>		Criteria <sup>b</sup>			Proposed for Coverage <sup>c</sup>	Notes
	State	Federal	Occur	Impact	Data		
San Joaquin kit fox <i>Vulpes macrotis mutica</i>	T	E	Y	N	Y	Y	Suitable habitat is present throughout the project permit area. However, this area is considered a dispersal area with the potential for a satellite population from the main Central Valley populations; it is known to have low density of kit foxes. USFWS's most recent 5-year review indicated that San Joaquin kit fox populations in Alameda County have declined and no known breeding is occurring (U.S. Fish and Wildlife Service 2010). The high presence of coyotes, a predator of the kit fox, also decreases the likelihood of abundance.
<b>Plants</b>							
Large-flowered fiddleneck <i>Amsinckia grandiflora</i>	E	E	N	N	Y	N	This species is found in native perennial bunch grass communities, none of which were identified onsite during reconnaissance surveys and plant list development during the wetland delineation. The species is only known from three localities in California, though designated critical habitat for the species is approximately 2 miles southeast of the project permit area. Preconstruction surveys will verify that the bunchgrass community and this species is not present. If it is determined to be present, full avoidance of the population will occur.
Palmate-bracted bird's-beak <i>Chloropyron palmatus</i>	E	E	N	N	Y	N	There is no suitable alkali grassland habitat within the project permit area.
Contra Costa goldfields <i>Lasthenia conjugens</i>	-	E	N	N	Y	N	There are no suitable alkali soils and swales within the project permit area.
<sup>a</sup> <b>Status</b> E = Endangered; T = Threatened.							
<sup>b</sup> <b>Criteria</b> Occur: The species is known to occur or likely to occur based on the extent, quality, and distribution of suitable habitats in project vicinity. Y = Yes; N = No; M = Maybe. Impact: The species would or could be adversely affected by covered activities. Data: Sufficient data exist on the species' life history and habitat requirements to adequately evaluate impacts on the species and develop conservation measures to mitigate impacts.							
<sup>c</sup> <b>Proposed Coverage</b> Y = coverage recommended; N = no coverage recommended.							

### 1.7.1.1 ESA Section 10—Incidental Take Permit Regulations and Policies

Section 10(a) of the ESA establishes a process for permitting incidental take. Such a permit allows permittees to take federally listed wildlife or fish subject to certain conditions as defined in Section 10(a)(2)(B). Incidental take of a listed fish or wildlife species is defined as take incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Submission of a conservation plan, generally referred to as an HCP, is required for all Section 10 permit applications.

A permit applicant's process for obtaining an ITP often has three phases: (1) the HCP development phase, (2) the permit processing phase, and (3) the post-issuance/implementation phase. During the HCP development phase, the applicant prepares an HCP that describes minimization and mitigation of the adverse effects of the applicant's project activities on listed species. HCPs submitted in support of an ITP application must include the following information.

- Determination of the type and potential amount of covered species take, and specification of the impact likely to result from such taking.
- Steps and measures that the applicant will implement to avoid, minimize, and mitigate such impacts, to the maximum extent possible.
- Assurances that adequate funding will be made available to implement such avoidance, minimization, and mitigation measures.
- Procedures and funding to deal with changed circumstances.
- Alternative actions to such taking that were considered, and the reasons why such alternatives are not being utilized.
- Biological goals and objectives.
- A monitoring plan.
- An adaptive management plan (if applicable).
- An implementing agreement (if applicable).
- Additional measures USFWS may require as necessary or appropriate for purposes of the HCP.

An applicant's HCP development phase concludes and USFWS's permit processing phase begins when a complete application package is submitted by the applicant to the appropriate USFWS office. Adaptive management is discussed in this HCP, though most adaptive management related to species conservation will be completed at the mitigation site where Rooney would purchase compensatory mitigation. Implementing agreements are not required and are typically only used for complex or multi-party habitat conservation plans. Furthermore, because all the measures are provided in the conservation strategy of this HCP, an implementation agreement is not required.

A complete application package consists of (1) the draft HCP, (2) an ITP permit application form 3-200, and (3) a \$100 application fee from the applicant. A copy of the applicant's draft HCP will be an appendix attached to USFWS's draft National Environmental Policy Act (NEPA) document.

During the public review period for the NEPA document, USFWS will also begin to prepare an internal Section 7 biological opinion (BO) (see Section 1.7.1.2, *ESA Section 7 Consultation and Biological Opinion*). When the BO is completed, USFWS will prepare required ESA findings, which

will analyze and justify each component of the HCP relative to each covered species and each permit issuance criterion. The statutory and regulatory permit issuance criteria are listed below.

- The taking will be incidental.
- The applicant has minimized and mitigated the impacts of such take to the maximum extent practicable.
- The economic analysis and other content of the HCP indicate that the applicant can ensure adequate funding for the HCP conservation strategy and has developed procedures and adequate funding to address any changed or unforeseen circumstances.
- The taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild.
- The applicant will provide additional measures that USFWS requires as being necessary or appropriate.
- USFWS has received assurances that the applicant will implement the HCP.

During the post-issuance phase, the applicant (now a permittee) will implement the HCP as described in the HCP and the permit. The applicant will prepare regular monitoring reports and will contact and meet with USFWS as specified in the HCP. USFWS will monitor and review the permittee's compliance with the HCP permit, including the progress and success of the HCP biological goals and objectives, over the entire permit term.

### **1.7.1.2 ESA Section 7 Consultation and Biological Opinion**

ESA Section 7 requires all federal agencies to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any species listed under ESA or to result in the destruction or adverse modification of its habitat. The issuance of an ITP is a federal agency discretionary decision, which triggers intra-Service consultation under ESA Section 7. Consequently, in conjunction with issuing a permit, USFWS must conduct an internal Section 7 consultation on the proposed HCP and prepare a BO as described above. The internal consultation results in a BO prepared by USFWS regarding whether implementation of the HCP and the effects of such taking would result in jeopardy to any listed species or would result in adverse modification of designated critical habitat.

## **1.7.2 National Environmental Policy Act**

NEPA requires that federal agencies analyze the environmental impacts of their discretionary decisions (in this instance, USFWS issuance of an ITP) and ensure that environmental information is available to agency officials before decisions are made and before actions are taken. NEPA also ensures public scrutiny during project planning and decisionmaking. The NEPA process usually requires the federal agency to prepare one of three environmental documents: (1) a categorical exclusion, (2) an environmental assessment (EA), or (3) an environmental impact statement (EIS) (see HCP Handbook). The NEPA process helps federal agencies make informed decisions with respect to the environmental consequences of their actions and ensures that measures to protect, restore, and enhance the environment are included, as necessary, as a component of their actions. An EA is most likely appropriate for this project and its covered activities because effects are expected to be mitigated consistent with other repowering projects in the region.

USFWS published a Notice of Availability (NOA) in the Federal Register on May 28, 2020, for the draft NEPA document, initiating the required public comment period. The public comment period on the EA was 30 days, ending on June 29, 2020. USFWS will consider all comments and suggestions received and prepare a final NEPA document. USFWS will publish an NOA for the final NEPA document in the Federal Register, if necessary.

## 2.1 Overview

Covered activities are divided into three categories: construction activities, operations and maintenance (O&M) activities, and conservation actions (including restoration activities).

## 2.2 Construction Activities

The actual layout may differ from the proposed layout illustrated in Figure 2 because the exact turbine locations are subject to micrositing (i.e., small moves to accommodate setback constraints, avian siting requirements, and other local considerations), but differences would be very minor. The final layout is expected to have the same or smaller acreage of impact as that presented in this document. Temporarily disturbed areas would be restored within 1 year. The repowering project would entail the construction activities listed below by disturbance category (overlapping impacts have been factored into acreage calculations).

Features with permanent impacts are listed below.

- Access roads (1 acre)
- Turbine foundations (0.5 acre)
- Meteorological tower (0.1 acre)
- Substation expansion (0.1 acre)
- Power poles (0.06 acre)

Features with temporary impacts are listed below.

- Access roads (2.7 miles) (7.0 acres total).
- Staging area (six staging areas; 15.0 acres total).
- Turbine foundation installation (seven sites—approximately 2.9 acres each; 17.6 acres total because of overlap with staging areas and roads).
- Power collection system (3.0 acres)
- Meteorological tower installation (1 tower—0.2 acre).
- Substation expansion (0.1 acre)
- O&M (0.5 acre every 5 years; total 3.0 acres)

Construction activities are expected to take approximately 6 months, including restoration after construction.

## 2.2.1 Site Preparation and Access Roads

Fourth-generation turbine towers and blades are significantly longer than older turbine components and require larger and longer trucks and cranes for transport and installation. These vehicles require wider roads with shallower turns and gradients than are currently present in the project area. Consequently, the existing road infrastructure must be upgraded to accommodate construction of the turbines. Road infrastructure upgrades would include grading, widening, and re-graveling of approximately 2.7 miles of existing roads. Existing road widths vary from 8 to 20 feet; future roads are expected to be approximately 20 feet wide. New roads totaling approximately 0.3 mile may be needed in areas where existing roads do not provide access to proposed turbine locations.

Most roads in the portion of the project permit area where new turbines would be installed would be temporarily widened to approximately 40 feet to accommodate larger towers as well as the larger equipment necessary to install them. It is likely that the locations where roads curve as they climb hills to the ridgetops would require more roadwork and would be widened to more than 40 feet in some spots to safely accommodate larger equipment. In addition, the access road entrance would need to be widened to provide sufficient space for the minimum turning radius of construction cranes and other flatbed delivery trucks. Lands subject to temporary road widening beyond a 20-foot permanent width would be reclaimed after construction.

## 2.2.2 Staging Areas

Six staging areas of various sizes, totaling up to 15 acres in total, would be established in the project permit area. These areas would be used for the storage of turbine components, construction equipment, water tanks, office trailers, and other supplies needed for project construction. The trailers would be used to support workforce needs and site security and would also house a first aid station, emergency shelter, and hand tool storage area. Parking areas would be located near the trailers. Vegetation would be cleared and the staging areas would be graded level. These areas would use native material, supplemented with gravel, if needed, and appropriate erosion control devices (e.g., earth berm, silt fences, straw bales) would be installed to manage water runoff. Diversion ditches would be installed, as necessary, to prevent stormwater from running onto the staging areas from surrounding areas. Following completion of construction activities, the contractor would restore the temporary staging areas. The gravel surface would be removed, and the areas would be contour graded (if necessary and if environmentally beneficial) to conform with the natural topography. Stockpiled topsoil would be replaced, and the area would be stabilized and reseeded with an appropriate seed mixture.

## 2.2.3 Construction and Installation of Turbines

### 2.2.3.1 Grading for Tower Foundations

At each turbine site, a level turbine work area would be graded to support the construction of tower foundations (discussed below) and to support the use of large cranes to lift the turbine components into place. The extent and shape of grading at each turbine site would depend on local topography; however, each site would require approximately 2.9 acres of graded area to support the construction of foundations and installation of turbines. A crane pad would be leveled and graded within the turbine work area at each turbine site. The crane pad—a flat, level, and compacted area—would provide the base from which the crane would work to place the turbine. Most wind turbine

construction activities would occur within the turbine work area. Following construction, the turbine work area would be reclaimed.

### **2.2.3.2 Construction of Tower Foundations**

The type of turbine foundation used depends on terrain, wind speeds, and wind turbine type, as well as other site-specific engineering considerations. Two foundation types may be used in repowering APWRA wind projects: an inverted “T” slab foundation or a concrete cylinder foundation. The two foundations types entail the same amount of temporary disturbance to construct as well as the same amount of permanent disturbance. Seven tower foundations would be constructed.

An inverted T slab foundation is a type of spread footing foundation. A single concrete pad is placed at ground level, although part of the pad may be placed below ground level depending on the slope. At the center of the pad is a cylindrical concrete pedestal to which the wind turbine tower is bolted—hence the name, inverted T.

A concrete cylinder foundation is a large concrete cylinder with a concrete pedestal that is slightly larger than the tower base diameter. The size of the concrete cylinder and pad is determined by wind turbine size and site-specific conditions (e.g., expected maximum wind speeds, soil characteristics). Its weight must be sufficient to hold the wind turbine in place.

The foundation would be installed immediately within the turbine work area adjacent to the crane pad. While the foundation type is determined by terrain, wind speeds, and turbine type, in general, the foundation is formed by placing concrete in an excavated footing with reinforced steel. A small graveled area would encircle each foundation to facilitate maintenance access. The total diameter of the final footprint for each turbine, including the graveled area, would be approximately 60 feet (0.065 acre).

### **2.2.3.3 Installation of Turbines**

Turbine construction entails placement of a new tower, rotor, nacelle, and transformer on the foundation. Construction and installation of turbines in this area is regulated by the City’s conditions of approval, building permit requirements, and grading permit requirements. The turbine towers, nacelles, and blades are delivered to each turbine location in the order of assembly, once the concrete of the foundation has been poured and has cured sufficiently. Large cranes are brought to each site to lift and assemble the turbine components. First, the base section of the tower is secured to the foundation using large bolts. The remaining tower sections are then lifted with the crane and connected to the base section. After the nacelle and rotor are delivered to the turbine site, the turbine blades are bolted to the rotor hub, and the nacelle and rotor are lifted by a crane and connected to the main shaft.

Excess rock generated by foundation construction would be spread on existing roads and maintenance areas surrounding the turbines. Old foundations from the decommissioned wind turbines may be removed if they are within proposed construction areas; doing so would involve workers demolishing the foundations using jackhammers or similar tools. The material from old turbine foundations may be reused for road base or hauled offsite to the Altamont Landfill.

## 2.2.4 Meteorological Tower

A permanent meteorological tower would be installed in a strategic location onsite to monitor wind speeds and to calibrate turbines. The permanent meteorological tower would be a freestanding tower without guy wires, approximately 80 meters tall. The permanent meteorological tower would require a small concrete foundation and graveled area around the tower, as well as an access road to facilitate maintenance activities. The small foundation and graveled area would be approximately 30 feet in diameter (0.016 acre).

## 2.2.5 Power Collection System

Each new wind turbine must be connected to the medium-voltage electrical collection system via a pad-mounted transformer. The collection system carries electricity generated by the turbines to a substation, where the voltage level of the collection system is stepped up to that of the power grid. From the substation, electricity is carried through an interconnection point to the transmission lines that distribute electricity to the power grid. Transmission lines in the project vicinity are maintained by the Pacific Gas and Electric Company (PG&E). Each of the collection system components is discussed below.

### 2.2.5.1 Collection Lines

Medium-voltage collection lines would collect power from each turbine for conveyance to the substation. Medium-voltage lines are normally up to 35 kilovolts (kV). The new medium-voltage collection lines would be installed underground as close to project roads as possible to minimize ground disturbance as well as to facilitate access for any necessary O&M activities on the lines.

Installation of underground medium-voltage lines is accomplished using a cut-and-cover construction method. A disturbance width of 20 feet is generally standard to allow for the trench excavation and equipment, but this width may vary depending on the topography and soil type. Typically, the topsoil is separated from the subsurface soil for later replacement. A 3-foot-wide trench is then plowed using a special bulldozer attachment that buries the line in the same pass in which it digs the trench. Once the collection lines are in place, the trench is partially backfilled with subsurface soil. Typically, communication lines are then placed in the trench, following which the trench is backfilled with the remaining subsurface soil, compacted, and covered with the reserved topsoil. Installation of collection lines is expected to result in approximately 3 acres of disturbance during construction.

### 2.2.5.2 Transformers and Power Poles

Transformers boost the voltage of the electricity produced by the turbines to the voltage of the collection system. Each turbine would have its own transformer adjacent to or within the turbine, either mounted on a small pad adjacent to the turbine or within the tower. Ground disturbance from transformer construction is included in the existing disturbance estimates associated with turbine pads.

The installation of overhead power lines and poles would be limited to locations where underground lines are infeasible and locations immediately outside the substation where underground medium-voltage lines come aboveground to connect to the substation.

To install power poles, a staging area is required. To mount the medium-voltage lines on a power pole, a pull site and a tension site are required. Pole sites, pull sites, tension sites, access roads, and staging areas are cleared (i.e., mowed) if necessary. Pole holes and any necessary anchor holes are excavated. Where possible, a machine auger is used to install poles. The width and depth of the setting hole depends on the size of the pole, soil type, span, and wind loading.

Power poles are framed, devices installed, and any anchors and guy wires installed before the pole is set. Anchors and guy wires installed during construction are left in place. After setting the pole, conductors are strung. The installed pole number is unknown at this time but will likely be fewer than 50, each with a 60-square-foot disturbance area. This work would result in a maximum of approximately 0.06 acre of ground disturbance.

## 2.2.6 Substation

The main functions of a collector substation are to step up the voltage from the turbine collection lines to the transmission level and to provide fault protection. The basic elements of the substation facilities are a control house, a bank of one or two main transformers, outdoor breakers, capacitor banks, relaying equipment, high-voltage bus work, steel support structures, an underground grounding grid, and overhead lightning-suppression conductors. The main outdoor electrical equipment and control house are installed on a concrete foundation.

The existing onsite substation served as the collector substation for the previous wind project. The substation consists of a graveled footprint area of approximately 0.2 acre, a 12-foot chain-link perimeter fence, and an outdoor lighting system. This substation may be expanded to a 0.3-acre footprint to accommodate the installation of new, upgraded equipment. Any new lights would be directed downward to reduce glare and a motion sensor installed to minimize lighting when not needed, consistent with applicable electrical infrastructure regulations. The upgraded substation would be fenced in keeping with the fencing around the existing substation (i.e., 12-foot chain link perimeter fencing).

## 2.3 Restoration Activities

Prior to construction, topsoil would be removed and stockpiled for later use. Following construction activities, areas temporarily disturbed would be restored to preconstruction conditions through implementation of a grassland restoration plan (Appendix A). This work would consist of contouring disturbed areas, spreading topsoil, and hydroseeding the area to promote restoration of the site. Monitoring of restored areas and remedial actions consisting of supplemental seeding, invasive species control, and erosion repair, if necessary, would be completed over a 3-year period following construction. The restoration plan in Appendix A outlines the performance criteria and monitoring requirements to ensure the site is restored.

## 2.4 Operations and Maintenance Activities

O&M activities would consist of equipment replacement, collection system repair, and gravel application and repair to access roads as necessary. Maintenance-related ground disturbance would take place within the footprint of the initial construction-related disturbance areas. Road gravelling

and road repair activities would occur within the footprint of the 20-foot-wide corridor of existing and new roads. Turbines may need to be repaired or replaced. No new permanent effects are anticipated during maintenance activities, but 0.5 acre of temporary impact is assumed every 5 years (the estimated area needed to repair turbines based on expected maintenance and longevity schedules), and temporarily affected areas would be restored within 1 year of disturbance. These estimates are based on annual disturbance of approximately 4,500 square feet (i.e., approximately a 50- by 90-foot area); actual disturbances could be larger or smaller depending on the maintenance work needed.

## 2.5 Conservation Actions

The applicant will implement the Conservation Strategy as outlined in Chapter 5, which includes avoidance and minimization measures and compensatory mitigation. To meet the compensatory mitigation, the applicant will either purchase mitigation credits from a conservation bank or will develop its own mitigation by protecting and managing conservation lands in perpetuity for the covered species. If a bank or banker is used, the conservation actions may not need to be covered under this HCP as the bank or banker will likely have take authorization for their actions. If the applicant develops its own mitigation, management actions in the mitigation permit area would be covered. These management actions are detailed in the long-term management plan and could include fencing, stock pond repair, clean-out and enhancement of ponds, mowing, cattle management, erosion repair, species monitoring, invasive species management and control, and other actions approved in the final long-term management plan.

## **3.1 Physical Setting**

The project permit area is within the APWRA, an approximately 50,000-acre area that extends across the northeastern hills of Alameda County and a smaller portion of Contra Costa County to the north. The region is generally characterized by mostly treeless rolling foothills of annual grassland (Figure 3). The dominant land uses in and surrounding the project permit area are wind energy generation (Golden Hills Wind Project and Golden Hills North Wind Project) and agriculture (cattle grazing). Major anthropogenic features of the region are the wind turbines and ancillary facilities, an extensive grid of high-voltage power transmission lines, substations, microwave towers, a landfill site, I-580, railroad lines, ranch houses, clusters of rural residential homes on Dyer and Midway roads, Bethany Reservoir, and the South Bay Pumping Plant.

In 2017–2018, Rooney previously decommissioned and removed 199 Vestas 95 kW wind turbines that occupied the project permit area. The turbine foundations remain in the project permit area. The old turbines were removed because they had reached the end of their serviceable life and were no longer economical to operate and maintain. Old turbine foundations that are co-located with the repowering project components would be removed, but all other foundations would be left in place permanently to minimize additional disturbance. In addition, the project permit area contains two meteorological towers and several abandoned buildings associated with previous cattle ranching practices on the site.

Ongoing farming practices or other uses carried out by the underlying landowners or other lessees in the project permit area (e.g., rural residential uses) are not under the applicant’s control.

### **3.1.1 Surrounding Land Use**

The land surrounding the boundaries of the project permit area consists primarily of agricultural (cattle grazing) lands. Lands east of the project permit area are also agricultural. Lands south and east of the project permit area contain the Golden Hills Phase 1 and Phase 2 wind energy projects.

### **3.1.2 County Zoning**

Land in and around the project permit area is designated as Large Parcel Agriculture (LPA) according to the East County Area Plan (Alameda County Community Development Agency 1994), adopted in 1994 and amended in 1996, 1998, 2000, and 2002. Wind farms are allowed as conditional uses within this designation. The project permit area is also within Alameda County’s designated Wind Resource Area identified in the East County Area Plan. The property is owned by the City of Santa Clara and though the City is not subject to the zoning of the County, it would similarly only allow a compatible use. Rooney Ranch, LLC is a privately owned company created by sPower for this project and has a lease with the City of Santa Clara to develop, construct, and operate the Rooney Ranch Wind Repowering Project. Rooney’s lease specifies that the City reserves the right to use or lease the land for farmland grazing, provided that it won’t interfere with the wind facility. As such, there is currently a grazing lease on the land and it is expected to continue on the land.

### 3.1.2.1 Topography

The project permit area is characterized by steep to rolling hills with elevations between 750 and 1,150 feet above mean sea level. The project permit area is on the eastern slopes of the Altamont Pass area, in the transition to the flat San Joaquin Valley. The topographic and meteorological conditions within the region produce strong, steady winds.

### 3.1.2.2 Soil Conditions

The project permit area is underlain primarily by Altamont series soils with the Altamont Rocky Clay unit as the majority of the soils. Linne clay, Pescadero loam, Rincon clay, and San Ysidro loam, are the remaining soil types. In general, most soil units have a heavy proportion of clay with a high shrink-swell rate, resulting in cracks on the surface that extend into the substratum. Depth to weathered bedrock is generally 2–4 feet.

### 3.1.2.3 Hydrology

The project permit area is located in the San Joaquin Delta Watershed hydrologic unit (hydrologic unit code 1804003). The primary streams in the area are Mountain House Creek, Patterson Run, and several unnamed tributaries. Mountain House Creek flows to Old River in the Sacramento–San Joaquin Delta. The primary sources of hydrology in the project permit area are precipitation and surface runoff. One impoundment (i.e., stock pond) in the project permit area has been constructed to provide water for grazing livestock.

## 3.2 Biological Resources

This section presents an overview of the biological setting of the project permit area. It describes the baseline biological conditions upon which the effects analysis (Chapter 4, *Impact Assessment*) and conservation strategy (Chapter 5, *Conservation Strategy*) are based.

### 3.2.1 Land Cover Types

A *land cover type* is defined as the dominant character of the land surface discernible from aerial photographs as determined by vegetation, water, or human uses. Land cover types are the most widely used units in analyzing ecosystem function, habitat diversity, natural communities, wetlands and streams, and covered species habitat.

Land cover types in the project permit area are summarized in Table 3 and shown in Figure 3. ICF biologists collected and mapped geospatial land cover data during preparation of the EACCS (ICF International 2010) and used those data in the PEIR (Alameda County Community Development Agency 2014). Additional site-specific surveys were conducted to confirm the locations of wetlands in the project permit area. Each land cover type is described below.

**Table 3. Approximate Acreage of Land Cover Types in the Project permit area**

Land Cover Type	Acres
Annual grassland	575.3
Developed/roads/other infrastructure	3.3
Ephemeral drainage	0.2
Rock outcrops	2.3
Pond	0.6
Total	581.7

### 3.2.1.1 Nonnative Annual Grassland

Annual grassland, the most common land cover type in the project permit area, corresponds to the California annual grassland land cover type identified in the EACCS. It is an herbaceous community dominated by naturalized annual grasses with intermixed perennial and annual forbs. Dominant species observed include soft chess brome (*Bromus hordeaceus*), big heronbill (*Erodium botrys*), redstem filaree (*E. cicutarium*), Italian ryegrass (*Festuca perennis* [*Lolium multiflorum*]), and Mediterranean barley (*Hordeum marinum* var. *gussoneanum*). The annual grasslands were grazed to a relatively short height in most areas, and ground squirrel and gopher burrows were observed throughout the nonnative annual grasslands in the project permit area. Burrows are abundant and density is fairly uniform throughout the site.

Invasive species are generally present in the project area, but they do not form dense stands with high cover. A complete inventory has not been completed, but species known to occur include Italian thistle (*Carduus pycnocephalus*), mustard (*Hirschfeldia incana*), black mustard (*Brassica nigra*), yellow star-thistle (*Centaurea solstitialis*), and various nonnative grasses.

### 3.2.1.2 Ephemeral Drainage

Ephemeral drainages are seasonally wet features. Three ephemeral drainages are present in the project permit area (Table 4). This community occupies approximately 0.2 acre in the southwestern and southeastern portions of the project permit area (Figure 3). The drainages are located in low-lying areas, draining water from surrounding hillsides and likely conveying water only following storm events. Two of the drainages (ED-2 and ED-3) are more than 250 feet from any project activities. One ephemeral drainage (ED-1) is approximately 240 feet from project activities. Vegetation consists of hydrophytic plant species adapted to wetland conditions. Vegetation typically associated with this feature includes generalists such as hyssop loosestrife (*Lithium hyssopifolia*), cocklebur (*Xanthium strumarium*), Mediterranean barley, and Italian ryegrass. Upland species such as black mustard, redstem filaree, common tarweed (*Holocarpha virgata*), and soft chess brome can also occur.

**Table 4. Aquatic Resources in the Project Permit Area**

Feature Type	Feature ID	Drainage Average Width (feet)	Acreage
Pond (ephemeral)	P-1	–	0.01
Pond (permanent)	P-2	–	0.58
Pond (ephemeral)	P-3	–	0.03
Ephemeral drainage	ED-1	3	0.02
Ephemeral drainage	ED-2	1	0.06
Ephemeral drainage	ED-3	2	0.09
Total			0.80

### 3.2.1.3 Rock Outcrops

Numerous rock outcrops are present in the western portion of the project permit area, nine of which contain variously sized rock pools. These areas are surrounded by annual grassland.

### 3.2.1.4 Pond

One stock pond (P-2) in the southeastern portion of the project permit area (Figure 3) appears to be a small permanent feature constructed to retain runoff water for livestock use (Table 4). There are two, small ephemeral ponds (P-1 and P-3) in the south and southwest portions of the project permit area. The surface area of the ponds varies with the time of year. Because of the ponds' shallow profile and the characteristically hot, dry summers and well-draining soil, the ponds only hold water for a short portion of the year, estimated to be up to 1 month after larger rain events. The ponds are unvegetated but may sometimes support a narrow fringe of cattail or scattered cattail plants (*Typha* spp.).

### 3.2.1.5 Developed/Roads/Infrastructure

Areas in the project permit area were previously used in ranching operations (e.g., corrals), wind project operation (e.g., relic turbine pads), and site access (i.e., roads). A small 0.2-acre substation and a 0.2-acre ranching facility are in these areas. Roads and other infrastructure occupy approximately 2.9 acres of the site.

## 3.2.2 Covered Species

### 3.2.2.1 California Red-Legged Frog

USFWS designated California red-legged frog (*Rana aurora draytonii*) as a threatened subspecies on June 24, 1996 (61 FR 25813). Following genetic research published in 2004, California red-legged frog was assigned specific status (CaliforniaHerps 2018).

#### Geographic Distribution

California red-legged frog (*Rana draytonii*) is endemic to California. Its current range comprises the San Francisco Bay Area and along the central coast, where it is relatively common, as well as isolated locations in the Sierra Nevada, on the north coast, and in the northern Transverse Ranges. California

red-legged frog is believed to be extirpated from the floor of the Central Valley (U.S. Fish and Wildlife Service 2002).

### **Life History and Habitat Requirements**

California red-legged frogs use aquatic habitat (ponds or drainages) in grassland and woodland habitats year-round, though they can persist for short periods out of water. If water is present they prefer to be in or adjacent to it, rather than moving into the uplands. They typically breed from November through April, using still or slow-moving aquatic habitats generally at least 3 feet deep, with vegetation consisting of willows, tules, or cattails. Juvenile frogs seem to favor open, shallow aquatic habitats with dense submergent vegetation. Although California red-legged frogs can inhabit both ephemeral and permanent streams and ponds, populations probably cannot persist in ephemeral streams in which all surface water disappears (Jennings and Hayes 1994). As ephemeral streams and ponds dry up in the late summer and fall, California red-legged frogs move to other nearby water sources or temporarily into the uplands.

Adults may take refuge during dry periods in rodent holes or leaf litter in annual grassland, oak woodland, chaparral, and riparian habitats and may move through these habitats during overland migration to and from aquatic habitat. Although California red-legged frogs typically remain near streams or ponds, marked and radio-tagged frogs have moved up to 1.7 miles through upland habitat (Bulger et al. 2003). These movements typically occur during wet weather and at night (U.S. Fish and Wildlife Service 2002). California red-legged frogs use long-distance movements to travel between ephemeral breeding pools and permanent water sources where they remain following the breeding period and during the driest months (August through October).

### **Threats**

The species' decline is attributable to a variety of factors. Large-scale commercial harvesting of red-legged frogs led to severe depletions of populations at the turn of the century (Jennings and Hayes 1985). Subsequently, exotic aquatic predators such as bullfrogs, crayfish, and various species of predatory fish became established and contributed to the continued decline of the species (Hayes and Jennings 1986). Habitat alterations such as conversion of land to agricultural and commercial uses, reservoir construction that affects downstream riparian environments, and in some places unauthorized off-highway vehicle use threaten remaining populations (Zeiner et al. 1990; Jennings and Hayes 1994).

Under the 2012 EACCS Programmatic Biological Opinion, 16 projects have resulted in the cumulative disturbance of approximately 681 acres of California red-legged frog habitat: 173 acres of permanent disturbance and 508 acres of temporary disturbance. These acreages include the Golden Hills and Golden Hills North wind facility projects. As of December 2018, one individual has been relocated unharmed and one has been found dead from project activities covered in East Alameda County.

Information regarding exotic aquatic predators in the project permit area is not known. Habitat alterations from previous wind energy projects may have occurred; however, the extent of changes is unknown. Invasive plant species are generally present, but they are not known to occur in dense patches or with high cover that would preclude or hinder the movement of individuals during dispersal. Information on contaminants, livestock grazing practices, ranch maintenance, and other potential threats is not known for the project permit area.

## Status in Project Permit Area

California red-legged frog habitat in the project permit area includes the stock pond (P-2) and nearby ephemeral drainages (ED-2 and ED-3) (Figure 3), plus two other small ephemeral ponds (P-1 and P-3). Pond P-2 could support breeding, and suitable upland dispersal habitat for this species is present throughout the project permit area. The ephemeral drainages (ED-2 and ED-3) and the two ephemeral ponds (P-1 and P-3) would support nonbreeding aquatic habitat, but they would not support breeding because they only contain water for a short time (generally estimated at 1 month or less, primarily following larger rain events).

Species-specific surveys have not been conducted in the project permit area, but there are many known occurrences of the species within 2 miles of the project permit area (the species' known dispersal distance) (Figure 4).

## Critical Habitat

USFWS promulgated the final revised ruling designating critical habitat for California red-legged frog on March 17, 2010 (75 FR 12816–12959). The entire project permit area is within critical habitat unit ALA-2 (75 FR 12816, 12907). Primary constituent elements (PCEs)<sup>1</sup> of designated critical habitat for this species include (1) aquatic breeding habitat (ponds, streams, wetlands); (2) aquatic nonbreeding (e.g., freshwater features not suitable for breeding) and riparian habitat; (3) upland habitats associated with riparian and aquatic habitat that provide food and shelter; and (4) dispersal habitat (i.e., accessible upland or riparian habitat within and between occupied or previously occupied sites within 1 mile of each other and that do not contain barriers—e.g., heavily traveled roads without bridges or culverts—to dispersal). All four PCEs are present in the project permit area, though aquatic breeding (pond) and aquatic nonbreeding habitat (ephemeral drainage) are limited; upland and dispersal habitats are more abundant. Within the project permit area there is approximately 0.62 acre of PCE-1, approximately 0.16 acre of PCE-2, approximately 32 acres of PCE-3, and approximately 539 acres of PCE-4.

Critical habitat unit ALA-2 encompasses 153,624 acres. The unit contains aquatic habitat for breeding and nonbreeding activities and upland habitat for foraging and dispersal activities, and was known to be occupied at the time of the critical habitat listing.

## Consistency with Recovery Plan

USFWS published the *Recovery Plan for the California Red-Legged Frog* in 2002 (USFWS 2002). The project permit area is located within the South and East San Francisco Bay recovery unit and within the East San Francisco Bay core area. The core areas were selected on the basis of several criteria. The East San Francisco Bay core area was selected because it is currently occupied, provides a source population, and has connectivity between known populations. The HCP would not appreciably change the land use or disturbance within the project permit area from existing conditions. Furthermore, the HCP would conserve California red-legged habitat in perpetuity either

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<sup>1</sup> On February 11, 2016, the USFWS and the NFMS deleted the term primary constituent elements (PCEs) and replaced it with the term physical and biological features (PBFs)(81 Fed. Reg. 7413). All critical habitat publications referenced in this document occurred prior to February 5, 2016, and therefore use the term primary constituent element (PCE), consistent with the critical habitat designations as they were published.

inside or outside the project permit area and within the recovery unit or core area. The HCP may contribute to meeting the goals of the recovery plan and would not preclude meeting any of the goals in the recovery plan.

### **3.2.2.2 California Tiger Salamander**

The Central California DPS of California tiger salamander is federally listed as threatened (69 FR 47212; August 4, 2004). The Sonoma and Santa Barbara County DPSs were listed separately as endangered (65 FR 57242; 68 FR 13498).

#### **Geographic Distribution**

California tiger salamander is endemic to the San Joaquin–Sacramento River valleys, bordering foothills, and coastal valleys of central California (Barry and Shaffer 1994). Based on genetic analysis, there are six populations of California tiger salamanders, distributed as follows: (1) Santa Rosa area of Sonoma County; (2) Bay Area (central and southern Alameda, Santa Clara, western Stanislaus, western Merced, and most of San Benito Counties); (3) Central Valley (Yolo, Sacramento, Solano, eastern Contra Costa, northeast Alameda, San Joaquin, Stanislaus, Merced, and northwestern Madera Counties); (4) southern San Joaquin Valley (portions of Madera, central Fresno, and northern Tulare and Kings Counties); (5) Central Coast range (southern Santa Cruz, Monterey, northern San Luis Obispo, and portions of western San Benito, Fresno, and Kern Counties); and (6) Santa Barbara County (Shaffer and Trenham 2005). The species' range along the coast includes the Santa Rosa area of Sonoma County, from southern San Mateo County south to San Luis Obispo County, and the vicinity of northwestern Santa Barbara County. In the Central Valley and adjacent Sierra Nevada foothills and Coast Ranges, the species occurs from the vicinity of Dunnigan in Yolo County south to northwestern Kern County and northern Tulare and Kings Counties. California tiger salamanders occur at elevations from sea level to approximately 3,900 feet in the Coast Ranges and to approximately 1,600 feet in the Sierra Nevada foothills (69 FR 47212).

#### **Life History and Habitat Requirements**

California tiger salamander requires freshwater habitat during the most critical stage of its life cycle—the breeding season—which is dependent on the wet season but typically lasts from November through April. Tiger salamanders congregate in aquatic breeding habitat (primarily vernal pools and stock ponds) prior to breeding and laying eggs. Following breeding, they disperse from the breeding habitat into nearby upland habitat for foraging and aestivation. In upland habitat, California tiger salamanders use burrows created by small mammals such as ground squirrels and pocket gophers for shelter and aestivation. California tiger salamanders remain in the upland habitat until emerging the following year to return to the breeding habitat, typically at night and during rain events. Research on the species indicates that the majority of individuals of a population do not disperse far from the breeding habitat. According to Trenham and Shaffer (2005), 90% of individuals of a population did not disperse more than 1,607 feet from the breeding habitat, and only 5% of individuals dispersed beyond 2,067 feet. In addition, research conducted by Searcy and Shaffer (2008) indicates that the density of adult and juvenile California tiger salamanders decreases exponentially as a function of distance from the breeding site. Although Orloff (2007) found that the majority of California tiger salamanders dispersed within 2,600 feet of a breeding pond, some dispersed as far as 1.37 miles from the pond.

## Threats

California tiger salamander populations have declined as a result of two primary factors: widespread habitat loss and habitat fragmentation. Residential development and land use changes in the species' range have removed or fragmented vernal pool complexes, eliminated refuge sites adjacent to breeding areas, and reduced habitat suitability for the species over much of the Central Valley (Barry and Shaffer 1994; Jennings and Hayes 1994). Grading activities have probably also eliminated large numbers of salamanders directly (Barry and Shaffer 1994). Nonnative species (bullfrogs, Louisiana red swamp crayfish, and nonnative fishes like mosquitofish, bass, and sunfish) prey on tiger salamander larvae and may eliminate larval populations from breeding sites (Jennings and Hayes 1994; U.S. Fish and Wildlife Service 2000). Rodent control through destruction of burrows and release of toxic chemicals into burrows can cause direct mortality of individual salamanders and may result in a decrease of available habitat (U.S. Fish and Wildlife Service 2000). Rodent control is not part of project-related O&M activities, but ongoing farming practices or other uses carried out by the underlying landowners or other lessees are not under the applicant's control. It is unknown if rodent control has occurred onsite, but no bait stations were observed during site reconnaissance surveys. Vehicular mortality is an important threat to California tiger salamander populations (Barry and Shaffer 1994; Jennings and Hayes 1994). California tiger salamanders readily attempt to cross roads during migration, and roads that sustain heavy vehicle traffic or barriers that impede seasonal migrations may have affected tiger salamander populations in some areas (Shaffer and Fisher 1991; Shaffer and Stanley 1992; Barry and Shaffer 1994). Hybridization between California tiger salamander and an introduced congener, *A. tigrinum*, has been documented and may be extensive (Riley et al. 2003).

As described above for California red-legged frogs, threats to Central California tiger salamanders in the project permit area include habitat modification, degradation, and fragmentation from development, roads, and agriculture; competition and predation by introduced species and feral animals; and mortality due to vehicle strikes. A nearby project, the Golden Hills Wind Energy Facility Repowering Project, removed 775 existing turbines and replaced them with 48 new, larger turbines. As a part of this project, silt fencing was installed around Central California tiger salamander breeding ponds to prevent salamanders from crossing the construction roads on the site. During construction of this project, more than 60 Central California tiger salamanders that were migrating out of a nearby breeding pond were found desiccated along the drift fence. In addition, more than 1,000 salamanders were found along the fence area and were successfully moved out of harm's way. Additional fencing and pit traps resulted in a much-reduced number of salamander mortalities. For the proposed project, the applicant will implement several conservation measures to reduce these types of potential effects including PBO General Protection Measure 2, which requires biological monitoring during construction activities, AMPH-1, which requires the establishment of exclusion zones and exclusionary fencing at a minimum of 500 feet from an aquatic feature wet or dry, and AMPH-2, which requires fencing to exclude salamanders from entering the work area. Lastly, PBO California tiger salamander Measure 1 requires surveys for salamanders prior to construction and moving California tiger salamanders, if appropriate, and through coordination with the USFWS. Minimizing exclusionary fencing throughout the project by placing exclusionary fencing only near aquatic features should prevent desiccation of animals by limited barriers to movement and allowing biologist to target those areas where relocation of animals will be most likely.

In summer of 2017, the Golden Hills North Energy Facility Repowering Project entailed removing existing turbines and replacing them with 26 new, larger turbines. Salamanders on this project were also captured and relocated. As part of this project, many Central California tiger salamanders were

captured and relocated outside the construction zone. In total, 48 individuals were relocated unharmed and three individuals were found dead at the project (two crushed along roads and one found desiccated). Under the 2012 EACCS Programmatic Biological Opinion, 16 projects up to December 2018 have resulted in the cumulative disturbance of approximately 722 acres of California tiger salamander habitat: 172 acres of permanent disturbance and 550 acres of temporary disturbance. In total, about 63 individuals have been found dead as a result of recent project fencing in the Altamont Hills and more than 1,000 have been relocated as of December 2018.

Information regarding exotic aquatic predators in the project permit area is not known. Habitat alterations from previous wind energy projects may have occurred; however, the extent of changes is unknown. Invasive plant species are generally present, but they are not known to occur in dense patches or with high cover that would preclude or hinder the movement of individuals during dispersal. Information on contaminants, livestock grazing practices, ranch maintenance, and other potential threats is not known for the project permit area.

### **Status in Project Permit Area**

Potential California tiger salamander aquatic breeding habitat in the plan area includes the stock pond (P-2), which is not near any project work areas (Figure 3). The ephemeral ponds are not considered potential breeding habitat because they only contain water for a short time (generally estimated at 1 month or less, primarily following larger rain events).

Suitable upland habitat for the species is present in the adjacent annual grasslands and within the species' dispersal range. The project permit area is known to support a robust population of ground squirrels, which produce extensive burrow systems. Many areas in the Altamont region have stock ponds and other suitable habitat for the species, and a known breeding site is located within 1.24 miles of the project permit area. In addition, numerous occurrences have been documented immediately outside the project permit area (Figure 4).

### **Critical Habitat**

USFWS designated critical habitat for the Central California DPS of California tiger salamander on August 23, 2005 (70 FR 49379). The project permit area is not within designated critical habitat for California tiger salamander.

### **3.2.2.3 San Joaquin Kit Fox**

USFWS designated San Joaquin kit fox as an endangered species on March 11, 1967 (32 FR 4001).

#### **Geographic Distribution**

San Joaquin kit foxes occur in some areas of suitable habitat on the floor of the San Joaquin Valley and in the surrounding foothills of the Coast Ranges, Sierra Nevada, and Tehachapi Mountains from Kern County north to Contra Costa, Alameda, and San Joaquin Counties (U.S. Fish and Wildlife Service 1998). Since 1998, the population structure has become more fragmented, with some resident satellite populations having been locally extirpated; these areas are visited by dispersing kit foxes rather than occupied by resident animals (U.S. Fish and Wildlife Service 2010:15). The largest extant populations are in Kern County (Elk Hills and Buena Vista Valley) and San Luis Obispo County in the Carrizo Plain Natural Area (U.S. Fish and Wildlife Service 1998).

## Life History and Habitat Requirements

The breeding season begins during September and October when adult females begin to clean and enlarge natal or pupping dens. Mating and conception occur between late December and March, and litters of two to six pups are born between late February and late March (U.S. Fish and Wildlife Service 1998:126). San Joaquin kit foxes may range up to 20 miles at night during the breeding season and somewhat less (6 miles) during the pup-rearing season (Girard 2001). Kit foxes can readily navigate a matrix of land use types. Home ranges vary from less than 1 square mile up to approximately 12 square miles (White and Ralls 1993). The home ranges of pairs or family groups of kit foxes generally do not overlap (White and Ralls 1993). San Joaquin kit foxes prey upon a variety of small mammals, ground-nesting birds, and insects. They are in turn subject to predation by such species as coyote, nonnative red foxes, domestic dog, eagles, and large hawks (U.S. Fish and Wildlife Service 1998).

San Joaquin kit foxes occur in a variety of habitats, including grasslands, scrublands, vernal pool areas, alkali meadows and playas, and an agricultural matrix of row crops, irrigated pastures, orchards, vineyards, and grazed annual grasslands (U.S. Fish and Wildlife Service 1998). They prefer habitats with loose-textured soils that are suitable for digging, but they occur on virtually every soil type. Dens are generally located in open areas with grass or grass and scattered brush, seldom occurring in areas with thick brush. Preferred sites are relatively flat, well-drained terrain (U.S. Fish and Wildlife Service 1998). They are seldom found in areas with shallow soils because of high water tables or impenetrable bedrock or hardpan layers (U.S. Fish and Wildlife Service 1998). However, kit foxes may occupy soils with a high clay content where they can modify burrows dug by other animals, such as California ground squirrels (Orloff et al. 1986). Structures such as culverts, abandoned pipelines, and well casings may also be used as den sites (U.S. Fish and Wildlife Service 1998:127).

In the northern part of the species' range (including Alameda County) where most habitat on the valley floor has been eliminated, kit foxes occur primarily in foothill grasslands and valley oak savanna. Retaining a linkage between San Joaquin kit fox populations in western Merced County north into Alameda and Contra Costa Counties is an important recovery goal for this species (U.S. Fish and Wildlife Service 1998).

## Threats

Continued fragmentation of habitat is a serious threat to this species. Increasing isolation of populations through habitat degradation and barriers to movement, such as aqueducts and busy highways, can limit dispersal to and occupancy of currently and previously occupied lands. The threat of being struck by vehicles is high, particularly for dispersing individuals crossing roadways with median barriers. Livestock grazing is not thought to be necessarily detrimental to the kit fox (Morrell 1975; Orloff et al. 1986), but it may affect the number of prey species available, depending on the intensity of grazing (U.S. Fish and Wildlife Service 1998). Moderate grazing is thought to benefit the species because it can potentially enhance the prey base and reduce vegetation to allow kit foxes to more easily detect and avoid predators. The use of pesticides to control rodents and other pests threatens kit foxes in some areas, either directly through poisoning or indirectly through reduction of prey abundance.

## Status in Project Permit Area

Numerous historic California Natural Diversity Database records for San Joaquin kit fox have been recorded within 2 miles of the project permit area (California Department of Fish and Wildlife 2017) (Figure 4). These observations date from between 1972 and 1998. As noted above, while the range remains the same, the population structure of San Joaquin kit fox since 1998 has become more fragmented; the project permit area is considered part of a satellite population and is likely occupied mainly by dispersers rather than residents or breeders (U.S. Fish and Wildlife Service 2010:15,16).

Suitable habitat for San Joaquin kit fox is present in annual grassland in the project permit area. Several large coyote-sized dens (more than 8 inches in diameter) were observed in the western half of the project permit area during the April 4, 2017, field survey, and abundant coyote scat was present throughout the rock outcrops. Coyotes prey on and compete with kit foxes, and often kit foxes do not occur in areas with dense coyote populations. Although suitable habitat is present in the project permit area, there have been very few recent sightings of kit foxes in the region, and the high coyote presence in the project permit area reduces the likelihood that San Joaquin kit foxes would be present.

Under the 2012 EACCS Programmatic Biological Opinion, 16 projects have resulted in the cumulative disturbance of approximately 663 acres of San Joaquin kit fox habitat: 147 acres of permanent disturbance and 516 acres of temporary disturbance. No injury or mortality of individuals has been reported from projects covered by the EACCS Programmatic Biological Opinion.

## Critical Habitat

No critical habitat has been designated for San Joaquin kit fox.

## Consistency with Recovery Plan

USFWS published the *Recovery Plan for Upland Species of the San Joaquin Valley, California* in 1998 (U.S. Fish and Wildlife Service 1998). In general, the recovery plan for San Joaquin kit fox focuses on the establishment of a viable complex of kit fox populations throughout its geographic range. In general, the recovery plan focuses on the protection of three core populations in San Luis Obispo County, Kern County, and western Fresno and San Benito Counties (i.e., the three core populations), and connecting larger blocks of isolated natural land to core and other populations. The project permit area is outside the three core areas, but would be considered a larger block of kit fox habitat on the edges of the species' range. The HCP would not appreciably change the land use or disturbance within the project permit area from existing conditions and would not preclude meeting any goals of the recovery plan.

## 4.1 Overview

Covered activities have the potential to affect California red-legged frogs and their designated critical habitat, California tiger salamanders, and San Joaquin kit foxes. Potential direct effects include temporary habitat loss, habitat degradation, and fragmentation of upland habitat; and direct mortality, injury, or displacement of individuals. Take of San Joaquin kit fox is not expected since this species is not expected to occur regularly in the area, but the project may still result in minor habitat effects or displacement. Potential effects on all three covered species and on critical habitat for California red-legged frog are described in this chapter. Overall, a small portion of the project permit area—approximately 7% of the total area—would experience ground disturbance during project construction. Less than 1% of the total area would be disturbed permanently, or temporarily during O&M activities over the term of the HCP. Permanent and temporary impacts would affect annual grassland. Impacts are not anticipated on other land cover types: ephemeral drainage, rock outcrops, and ponds. Construction activities would primarily take place during the dry season, but could extend into the wet season (i.e., November and December) if not completed earlier. However, the project area would be stabilized by mid-October, before the wet season, and remaining work would use light-duty trucks.

## 4.2 Impact Methodology

Overall permanent and temporary ground disturbance was calculated with geographic information system software using the assumptions listed below. Figures depicting the disturbance areas in relation to aquatic features are also provided in Appendix B.

### 4.2.1 Permanent Construction Disturbance

- **Access Roads.** Existing roads vary from 10 to 12 feet wide and would be widened to 20 feet. New access roads would be 20 feet wide.
- **Wind turbine foundations.** A 60-foot-diameter permanent impact area would result from the concrete foundation and additional graveled area surrounding each turbine.
- **Meteorological tower.** A 30-foot-diameter (0.1 acre) permanent impact area would result from the concrete foundation and additional graveled surrounding the meteorological tower.
- **Substation.** The existing substation would be used with minor expansion (i.e., the existing substation footprint is approximately 0.1 acre and it would be expanded another 0.1 acre so that the final size is 0.2 acre) of the existing graveled and fenced footprint. Work would involve replacing and installing new components within the substation area.

## 4.2.2 Temporary Construction Disturbance

- **Access Roads.** Roads would be temporarily widened (10 feet on each side of existing roads and 10 feet on each side of permanent new roads) and would be restored back to a permanent 20-foot width.
- **Staging areas.** Temporary disturbance of up to 15 acres would result from six designated areas used for storage of supplies and other activities needed for project construction.
- **Wind turbine sites.** Temporary disturbance to a distance of 175 feet beyond the permanent impact area would result from turbine installation.
- **Collection lines.** Installation of collection lines would result in a temporary disturbance corridor 20 feet wide for up to two collection lines, up to 30 feet wide for up to three collection lines, up to 40 feet wide for up to four collection lines, and up to 50 feet wide for up to five collection lines. HDD may be used to install some collection lines, if feasible, but direct trenching and burial was assumed for impact calculations.
- **Meteorological tower.** Temporary disturbance to a distance of 120 feet beyond the permanent impact area would result from meteorological tower installation.
- **Substation.** Temporary disturbance beyond the final substation footprint totaling 0.1 acre would be required to expand the substation.

## 4.2.3 No Construction Disturbance

The following covered activities were not considered to disturb habitat for covered species.

- **Existing roads.** The areas covered by existing roads were assumed to entail no disturbance of habitat for covered species.
- **O&M facility.** Work within the existing O&M facility fenced area was assumed to entail no disturbance of habitat for covered species.

## 4.2.4 Operations and Maintenance Disturbance

Additional temporary impacts would result from wind turbine repair or replacement, electrical line repair or maintenance, and road maintenance. Such activities would be undertaken only on an as-needed basis. Disturbance estimates are based on annual disturbance of approximately 4,500 square feet (i.e., approximately a 50- by 90-foot area); actual disturbances could be larger or smaller in any particular year depending on the maintenance work needed but would not exceed 3.0 acres over the permit term.

## 4.2.5 Mitigation Area Disturbance

If the applicant develops its own mitigation, management actions on the conservation lands, also known as the mitigation permit area, would be covered. These management actions will be detailed in the long-term management plan and could include fencing, stock pond repair, clean-out and enhancement of ponds, mowing, cattle management, erosion repair, species monitoring, invasive species management and control, and other actions approved in the final long-term management plan. Such actions are intended to maintain and improve habitat for covered species, though resultant incidental take of covered species would be covered under this HCP.

## 4.3 Impact Summary

As shown in Table 5, repowering would remove 1.8 acres of nonnative annual grassland, considered a permanent impact. Repowering and project maintenance would temporarily cause ground disturbance to 45.9 acres of nonnative annual grassland.

**Table 5. Upland Habitat Impact Summary for Construction and Maintenance (acres)**

Activity	Permanent Ground Disturbance	Temporary Ground Disturbance
<b>Construction</b>		
Access road expansion <sup>1</sup>	1.0	7.0
Staging area installation	0.0	15.0
Turbine foundation installation	0.5	17.6
Power collection system installation	0.0	3.0
Meteorological tower installation	0.1	0.2
Substation expansion	0.1	0.1
Power poles	0.1	0.0
Subtotal	1.8	42.9
<b>Maintenance</b>		
O&M work (0.5 acre every 5 years for 30 years) <sup>2</sup>	0.0	3.0
Subtotal	0.0	3.0
Total	1.8	45.9

Note: Upland habitat consists of nonnative annual grassland.

<sup>1</sup> Existing access roads would be reused to the extent possible; however, some small sections of new access road would be required.

<sup>2</sup> Although the operational period of the project is expected to be up to 35 years, ground-disturbing O&M activities would only occur in operational years 5–35 (30 years).

## 4.4 California Red-Legged Frog

Based on the presence of suitable habitat for California red-legged frog within the project permit area and known populations adjacent to the project permit area, there is a potential for California red-legged frogs to be affected by covered activities: construction and maintenance activities.

### 4.4.1 Project-Specific Impacts

#### 4.4.1.1 Habitat Loss

No seasonal wetlands or ponds suitable for California red-legged frog breeding would be directly affected by covered activities because ground disturbance would not occur within or near any breeding aquatic habitats. All ground disturbance effects would be limited to upland habitat (grassland) used by California red-legged frogs. Project impacts are summarized in Table 5.

Construction activities are not expected to indirectly affect a pond (P-1) and ephemeral drainage (ED-1) that are 240 feet from a temporarily widened existing road (Appendix B). ICF hydrologist Brendan Belby made this conclusion based on multiple variables: the distance from disturbance, the temporary road widening and restoration activities being conducted during the dry season, implementation of SWPPP measures, the absence of new impermeable surfaces, the presence of another existing road between the two aquatic features and project activities, and the incorporation of a measure to carefully consider road design to minimize the potential for effects (conservation measure ADD-10). Moreover, construction activities are not expected to indirectly affect pond P-2, more than 1,000 feet from work areas; pond P-3, approximately 400 feet from work areas; or ephemeral drainages ED-2 and ED-3, approximately 1,000 feet or more from work areas. Moreover, no permanent or temporary project features are located in an area that would result in a hydrological discharge to these features, and proposed activities would not alter the hydrology either within or supporting these features (Belby pers. comm.).

To minimize adverse effects of loss of upland habitat, conservation measures described in Chapter 5, *Conservation Strategy*, will be implemented prior to, during, and after ground-disturbing activities associated with project construction and maintenance. Measures expected to be most effective at minimizing the loss of upland habitat are AMPH-1, which requires the establishment of exclusion zones to limit work areas; PBO General Protection Measure 17, which requires finalization and implementation of a grassland restoration plan; and PBO General Protection Measure 12, which requires the use of best management practices (BMPs) such as installation of sediment fences to minimize erosion. Together, these measures will help to minimize upland habitat loss by constraining the extent of work areas and by ensuring successful restoration of temporarily disturbed areas.

#### **4.4.1.2 Habitat Degradation**

Effects on California red-legged frog could result from ground-disturbing activities associated with construction that degrades upland habitat or introduces nonnative invasive species into the area. Exposed soil surfaces left unvegetated by ground disturbance have the potential to lead to discharge of sediment into adjacent upland areas, filling suitable burrows with sediment, thereby degrading dispersal habitat and eliminating refugia. As stated above, because the two aquatic features downslope of the roads would be protected with sediment fencing and are separated from construction activities by an existing road, construction activities are not anticipated to degrade the pond and ephemeral drainage.

Construction activities also have the potential to result in runoff of petroleum-based products associated with equipment and vehicles used during construction. To avoid potential effects from these petroleum projects on nearby upland habitat, conservation measures described in Chapter 5, *Conservation Strategy*, will be implemented prior to, during, and after ground-disturbing activities associated with project construction and maintenance. The measures expected to be most effective at minimizing potential effects are GEN-08, which requires vehicle fueling away from aquatic areas; GEN-12, which requires the use of erosion control measures; and PBO General Protection Measure 12, which requires the use of BMPs to minimize erosion and water quality effects. Because the project would permanently affect less than 0.5% of the land cover in the project permit area (1.8 acres of 580 acres) and no aquatic habitat would be degraded, the project is not expected to significantly degrade suitable habitat.

### 4.4.1.3 Construction Impacts on Individuals

Construction activities such as excavation, grading, and stockpiling of soil could result in injury or mortality of California red-legged frogs. Potential direct effects include mortality or injury by equipment, entrapment in open trenches or other project facilities, and entombment of animals in occupied burrows that are covered or filled in. Construction may require the use of exclusion fencing; exclusion fencing itself can pose an entrapment risk to frogs that are moving across the site. Construction into the wet season (i.e., November and December) would likely lead to an elevated risk of killing frogs as burrows are more likely to be crushed or collapsed during wet conditions; further, frogs are more likely to be above ground and moving during wet conditions. Hydroseeding during restoration, should it result in complete burrow closure, could interfere with California red-legged frogs' ability to exit burrows. Conservation Measures described in Chapter 5, *Conservation Strategy*, will be implemented prior to, during, and after construction to minimize potential adverse effects on California red-legged frog. Other direct effects may include disturbance caused by vibration from heavy equipment, prompting individuals to avoid or disperse from areas. The introduction of invasive species through transport on construction equipment could degrade dispersal habitat by obstructing free movement of individuals. Invasive species will be monitored as part of the restoration plan to minimize these impacts.

### 4.4.1.4 Operations and Maintenance Impacts

O&M activities, such as turbine equipment removal and repair, collection system repair, and road maintenance, could result in injury or mortality of this individual red-legged frogs. Maintenance-related ground disturbance would primarily occur within the footprint of the initial construction-related disturbance areas. Road repair would be undertaken within the footprint of the 20-foot wide corridor for existing and new roads. Because most O&M activities would take place in previously disturbed areas, injury or mortality of individual frogs would be minimized. Potential direct effects include mortality or injury by equipment and entombment of animals if occupied burrows are covered or filled. Indirect effects could result from facility lighting and from the introduction of nonnative invasive species. O&M work is not expected to be substantial, but the applicant may need to perform ongoing maintenance actions to keep the wind farm operational. Conservation Measures described in Chapter 5, *Conservation Strategy*, will be implemented prior to, during, and after maintenance activities to minimize potential adverse effects. Maintenance activities are expected to result in 0.5 acre or less of temporary disturbance every 5 years.

### 4.4.1.5 Beneficial Impacts

As part of restoration efforts following project construction, Rooney would reclaim and reseed approximately 42.9 acres of staging areas, power collection system installation areas, temporary road expansions, and turbine installation areas. These restoration efforts would convert most of the project site back into nonnative grassland habitat that would be usable for red-legged frogs. The applicant would also monitor and control invasive species that could degrade dispersal habitat. Restoration work would be completed within 1 year of disturbance, consistent with the conservation measures described in Chapter 5, *Conservation Strategy*.

### 4.4.1.6 Mitigation Permit Area Impacts

Management actions in the mitigation permit area could affect California red-legged frogs. Fencing, stock pond repair, clean-out and enhancement of ponds, mowing, cattle management, erosion

repair, species monitoring, invasive species management and control, and other actions approved in the final long-term management plan could result in temporary adverse effects. However, these actions are intended to maintain and improve habitat for California red-legged frog and would only be conducted if long-term beneficial effects are expected.

#### **4.4.1.7 Critical Habitat**

Of the four PCEs of California red-legged frog critical habitat, dispersal habitat (PCE 4) would be temporarily and permanently affected by the project. A substantial long-term adverse effect on PCE 4 is not expected because the project would not create barriers for dispersal; frogs could continue using the upland habitat for movement, foraging, and shelter. Maintenance-related ground disturbance would take place within the footprint of the initial construction-related disturbance areas and would not adversely affect PCEs 1, 2, or 3. Because aquatic habitat would not be degraded or removed through construction or maintenance activities, and no activities would be undertaken within 200 feet of aquatic habitats, there would be no effect on PCE 1 (aquatic breeding habitat), PCE 2 (aquatic nonbreeding and riparian habitat), or PCE-3 (upland habitats within 200 feet of associated with riparian and aquatic habitat that provide food and shelter). Overall, the small amount of permanent and temporary impacts on PCE 4—1.8 acres and 45.9 acres, respectively—would not significantly alter available critical habitat nor affect the use of the habitat by California red-legged frog.

#### **4.4.2 Cumulative Effects**

Cumulative effects, as defined in 50 CFR Section 402.02, consider the effects of future state, local, or private activities (excluding federal actions) that are reasonably likely to occur within the project permit area.

Existing land uses under and around the wind turbines are unlikely to change given the agricultural zoning, and no other uses of the project permit area are proposed. These areas are likely to remain in grazing and open space, and existing wind leases encumber the property. Large-scale land cover conversions to other agricultural crops, such as vineyards or orchards, have not occurred in this area over the past 30 years and are consequently considered unlikely. Therefore, no substantial cumulative effects are expected to occur in the project permit area.

Regionally, however, the species will likely continue to suffer from cumulative effects associated with cattle grazing, urban growth, and conversion of grassland to cultivated agricultural use. Cattle grazing is a common land use practice in rural Alameda County. Overgrazing can result in degradation and loss of riparian vegetation, increased water temperatures, streambank and upland erosion, and decreased water quality in streams. Livestock operations also degrade water quality with pesticides and nutrient contamination. Agricultural development, impoundments, and irrigation can alter vernal pool hydrology, resulting in the loss of aquatic breeding habitat. Farming practices carried out by surrounding landowners or other lessees can also include rodent control through the destruction of burrows or through toxic release of chemicals into burrow, which can cause direct mortality and degrade and eliminate available habitat and refugia. Currently proposed development activities under Alameda County's jurisdiction include Livermore Community Solar Farm project, CalSun Solar Project, additional wind projects in the APWRA, and several residential developments in the county. Continued heavy grazing and increased urbanization in the region will contribute to the degradation of water quality in streams, altered flow regimes, increased contaminated road runoff, loss of habitat, and increased human presence in natural areas.

Cumulative effects on California red-legged frog would consist of continuing and future loss of suitable breeding, foraging, sheltering, and dispersal habitat resulting from conversion to urban development. Additional urbanization can stimulate road-widening projects and generate increased traffic on roads that bisect habitat, thereby increasing road-kill while reducing and further fragmenting remaining habitat. California red-legged frogs are likely exposed to a variety of pesticides and other chemicals throughout their range. Hydrocarbon and other contamination from oil production and road runoff, the application of chemicals for roadside maintenance, urban/suburban landscape maintenance, and rodent and vector control programs may all have adverse effects on California red-legged frog populations.

Regional conservation plans such as the East Contra Costa County HCP/NCCP and EACCS are intended to provide measures to help conserve remaining habitats. Collectively, adherence to conservation measures and project-specific mitigation are expected to offset direct, indirect, and cumulative effects.

### 4.4.3 Estimated Level of Take

HCPs are required to include a determination of the amount of incidental take that may occur as a result of covered activities and that will be authorized during the permit term (50 CFR Section 17.22[b]). The following estimate of take considers the avoidance and minimization measures described in Chapter 5, *Conservation Strategy*.

Incidental take of California red-legged frogs in the form of displacement, disturbance, injury, or death may result from construction or maintenance activities. Temporary and permanent habitat loss may also result in take. Take will be minimized by implementation of the avoidance and minimization measures described in Chapter 5, *Conservation Strategy*, particularly through limiting habitat disturbance to daytime during the dry season, because red-legged frogs typically remain near streams or ponds during the day, generally moving into upland areas during wet weather at night. Similarly, by limiting disturbance to the dry season, reseeding will be undertaken at the beginning of the wet season, encouraging quick regrowth of the annual grassland habitat that dominates the project site and allowing work areas to become suitable for dispersal. The applicant requests authorization of any take associated with the disturbance of 47.7 acres of upland habitat: 1.8 acres of permanent habitat loss and 45.9 acres of temporary habitat disturbance during construction and maintenance activities (Table 5) and actions associated with maintenance and enhancement in the mitigation permit area.

### 4.4.4 Impacts with Respect to Survival and Recovery

The *Recovery Plan for the California Red-Legged Frog* (USFWS 2002) focuses on management of the species within core areas. The project permit area is within the East San Francisco Bay core area. Goals of the recovery plan for this core area include maintenance of breeding and dispersal habitat. Both breeding and dispersal habitat in the project permit area would remain following project construction, and the HCP is not expected to have impacts with respect to survival and recovery of the species.

## 4.5 California Tiger Salamander

Based on the presence of suitable aquatic and upland habitat for California tiger salamander and known populations adjacent to the project permit area, there is potential for California tiger salamander to be affected by covered activities in the project permit area.

### 4.5.1 Project-Specific Impacts

#### 4.5.1.1 Habitat Loss

Habitat impacts on California tiger salamander from implementation of covered activities would be similar to those described above for California red-legged frog for both upland and aquatic habitats. As described above, no seasonal wetlands or ponds suitable for California tiger salamander breeding would be directly affected by covered activities; thus, there would be no adverse effects on aquatic habitats. Adverse effects would be limited to upland habitat (grassland) used by tiger salamanders during dispersal and for underground retreats during the dry season. Approximately 47.7 acres of upland habitat would be disturbed by covered activities (i.e., construction and O&M): 1.8 acres permanently and 45.9 acres temporarily (Table 5).

To minimize adverse effects of loss of upland habitat, conservation measures described in Chapter 5, *Conservation Strategy*, will be implemented prior to, during, and after ground-disturbing activities associated with project construction and O&M. Measures expected to be most effective at minimizing the loss of upland habitat are AMPH-1, which requires the establishment of exclusion zones to limit work areas; PBO General Protection Measure 17, which requires finalization and implementation of a grassland restoration plan; and PBO General Protection Measure 12, which requires the use of BMPs to minimize erosion. Together, these measures will help to minimize upland habitat loss by constraining the extent of work areas and by ensuring successful restoration of temporarily disturbed areas.

#### 4.5.1.2 Habitat Degradation

Effects on California tiger salamander could result from ground-disturbing activities associated with construction that degrades upland habitat or introduces nonnative invasive species into the area. As described above, no seasonal wetlands or ponds suitable for California tiger salamander breeding would be indirectly affected by covered activities; thus, there would be no adverse effects on aquatic habitat. Exposed soil surfaces left unvegetated by ground disturbance have the potential to lead to discharge of sediment into adjacent upland areas and filling suitable burrows with sediment, thereby degrading dispersal habitat and eliminating refugia. Construction activities also have the potential to result in runoff of petroleum-based products associated with equipment and vehicles used during construction.

To avoid potential effects on nearby upland habitat, conservation measures described in Chapter 5, *Conservation Strategy*, will be implemented prior to, during, and after ground-disturbing activities associated with project construction and maintenance. The measures expected to be most effective at minimizing potential effects are GEN-08, which requires vehicle fueling away from aquatic areas; GEN-12, which requires the use of erosion control measures; and PBO General Protection Measure 12, which requires the use of BMPs to minimize erosion and water quality effects. Because the project would permanently affect less than 1% of the land cover onsite, the project is not expected to significantly degrade onsite habitat.

### 4.5.1.3 Construction Impacts on Individuals

Construction impacts on California tiger salamander would be similar to those described for California red-legged frog. Mortality, injury, or displacement or disturbance of individual California tiger salamanders could result from project-related equipment or vehicles and traffic in the project permit area. Potential direct effects include mortality or injury by equipment and entombment of animals if occupied burrows are covered or filled. Disturbance and displacement associated with work activities may increase the potential for predation, desiccation, competition for food and shelter, and vehicle strike on access roads. Construction may require the use of exclusion fencing; exclusion fencing itself can pose an entrapment risk to salamanders that are moving across the site. Construction into the wet season (i.e., November and December) would likely result in elevated risk of killing salamanders as burrows are likelier to be crushed or collapsed during wet conditions; further, the species is more likely to be above ground and moving during wet conditions. Hydroseeding during restoration, should it result in complete burrow closure, could interfere with salamanders' ability to exit burrows. Other direct effects may include disturbance caused by vibration from heavy equipment, prompting individuals to avoid or disperse from areas. The introduction of invasive species through transport on construction equipment could degrade dispersal habitat by obstructing free movement of individuals. Invasive species will be monitored as part of the restoration plan to minimize these impacts.

Conservation Measures described in Chapter 5, *Conservation Strategy*, will be implemented prior to, during, and after construction to minimize potential adverse effects on California tiger salamander. Measures expected to be most effective at reducing the impacts of construction on individuals are AMPH-2 and PBO California Tiger Salamander Measure 1, which requires preconstruction surveys for individuals and relocation of individuals out of construction areas.

### 4.5.1.4 Operations and Maintenance Impacts

O&M activities, such as turbine equipment removal and repair, collection system repair, and road maintenance, could result in injury or mortality of individual salamanders. Potential direct effects include mortality or injury by equipment and entombment of animals if occupied burrows are covered or filled. Indirect effects could result from facility lighting and the potential introduction of nonnative invasive species. Conservation Measures described in Chapter 5, *Conservation Strategy*, will be implemented prior to, during, and after maintenance activities to minimize potential adverse effects. Measures expected to be most effective at minimizing operations and maintenance impacts are AMPH-2 and PBO California Tiger Salamander Measure 1, which require preconstruction surveys for individuals, and PBO General Measure 17, which requires restoration of temporarily disturbed areas. Maintenance activities are expected to result in 0.5 acre or less of temporary disturbance every 5 years.

### 4.5.1.5 Beneficial Impacts

As part of restoration efforts following project construction, Rooney would reclaim and reseed staging areas, power collection system installation areas, temporary road expansions, and turbine installation work areas. These restoration efforts would return most of the project site into habitat usable for the species. Restoration work would be completed within 1 year of disturbance, consistent with the conservation measures described in Chapter 5, *Conservation Strategy*.

#### 4.5.1.6 Mitigation Permit Area Impacts

Management actions in the mitigation permit area could affect California tiger salamander. Fencing, stock pond repair, clean-out and enhancement of ponds, mowing, cattle management, erosion repair, species monitoring, invasive species management and control, and other uses approved in the final long-term management plan could result in temporary adverse effects. However, these actions would be done with the intent of maintaining and improving habitat for California tiger salamander and would only be conducted if long-term beneficial effects are expected.

#### 4.5.2 Cumulative Effects

Existing land uses under and around the wind turbines are unlikely to change given the agricultural zoning, and no other uses of the project permit area are proposed. These areas are likely to remain in grazing and open space, and existing wind leases encumber the property. Large-scale land cover conversions to other agricultural crops, such as vineyards or orchards, have not occurred in this area over the past 30 years and are consequently considered unlikely. Therefore, no substantial cumulative effects are expected to occur in the project permit area.

Regionally, the species will likely continue to suffer from cumulative effects associated with urban growth, conversion of grassland to cultivated agricultural use, application of herbicides/pesticides, and other activities. Cattle grazing is a common land use practice in rural Alameda County. Overgrazing can result in degradation and loss of riparian vegetation, increased water temperatures, streambank and upland erosion, and decreased water quality in streams. Livestock operations also degrade water quality with pesticides and nutrient contamination. However, light to moderate livestock grazing is generally thought to be compatible with continued successful use of rangelands by California tiger salamander, provided the grazed areas are not subject to intensive burrowing rodent control efforts (Shaffer et al. 1993; U.S. Fish and Wildlife Service 2017). The shorter vegetation associated with grazed areas may make the habitat more suitable for ground squirrels, whose burrows are utilized by California tiger salamanders for refugia (U.S. Fish and Wildlife Service 2017).

Agricultural development, impoundments, and irrigation can alter vernal pool hydrology, resulting in the loss of aquatic breeding habitat. Disking, a common practice on agricultural lands, can result in substantial losses of upland habitat for California tiger salamander.

Currently proposed development activities under Alameda County's jurisdiction include the Livermore Community Solar Farm project, a CalSun Solar Project, additional wind projects in the APWRA, and several residential developments in the county. Housing developments result in loss of suitable California tiger salamander habitat as they replace agricultural and ranch lands. Increased urbanization in the region will contribute to the degradation of water quality, altered flow regimes, increased contaminated road runoff, loss of upland habitat, and increased human presence in natural areas.

Cumulative effects on California tiger salamander include continuing and future loss of suitable breeding, foraging, sheltering, and dispersal habitat resulting from conversion to urban development. Additional urbanization can stimulate road-widening projects and generate increased traffic on roads that bisect habitat, thereby increasing road kill while reducing and further fragmenting remaining habitat. California tiger salamanders are likely exposed to a variety of pesticides and other chemicals throughout their range. Hydrocarbon and other contamination from oil production and road runoff, the application of chemicals for roadside maintenance,

urban/suburban landscape maintenance; and rodent and vector control programs may all have adverse effects on California tiger salamander populations.

Further habitat fragmentation, additional nonnative species introduction, and increased access to aquatic habitat could facilitate or increase the spread of amphibian diseases in the species' range. The global mass extinction of amphibians primarily attributable to chytrid fungus is of significant concern to USFWS (U.S. Fish and Wildlife Service 2017). Long-term population viability can only be maintained with large tracts of intact upland habitat surrounding breeding sites (Trenham et al. 2005). This is further described in *A Status Review of the California Tiger Salamander (Ambystoma californiense)* (California Department of Fish and Game 2010).

Ongoing climate change may threaten California tiger salamander and the resources necessary for the species' survival. Because climate change threatens to disrupt annual weather patterns, it may result in a loss of suitable habitats and prey and in increased numbers of the salamander's predators, parasites, and diseases (U.S. Fish and Wildlife Service 2017).

Regional conservation plans such as the East Contra Costa County HCP/NCCP and the EACCS are intended to provide measures to help conserve remaining habitats. Collectively, adherence to conservation measures and project-specific mitigation are expected to offset direct, indirect, and cumulative effects.

### 4.5.3 Estimated Level of Take

Incidental take of tiger salamanders in the form of injury or death may result from construction activities and O&M activities. In addition, temporary and permanent habitat loss may result in take (in the form of harm) of this species. Take will be minimized by implementation of the avoidance and minimization measures described in Chapter 5, *Conservation Strategy*, particularly through limiting habitat disturbance to daytime during the dry season and implementing exclusionary fencing near sensitive breeding habitat, because California tiger salamanders typically travel between upland and breeding habitat at night and during rain events. Similarly, by limiting disturbance to the dry season, reseeding will be undertaken at the beginning of the wet season, encouraging quick regrowth of the annual grassland habitat that dominates the project site.

The applicant requests authorization of any take associated with the disturbance of 47.7 acres of upland habitat: 1.8 acres of permanent habitat loss and 45.9 acres of temporary habitat disturbance, respectively, during construction and O&M activities (Table 5) and actions associated with maintenance and enhancement within the mitigation permit area.

### 4.5.4 Impacts with Respect to Survival and Recovery

The recovery plan for the California tiger salamander central California DPS focuses on the maintenance of genetic diversity and connectivity across the species' range. Both breeding and dispersal habitat within the project permit area would remain following construction of the project, and the HCP is not expected to have impacts with respect to survival and recovery of the species.

## 4.6 San Joaquin Kit Fox

Based on the presence of suitable dispersal habitat for San Joaquin kit fox, there is a small potential for San Joaquin kit foxes to be affected by covered activities in the plan area.

### 4.6.1 Project-Specific Impacts

#### 4.6.1.1 Habitat Loss

Habitat impacts on San Joaquin kit fox from implementation of covered activities would include the temporary disturbance of dispersal habitat. To minimize adverse modification of upland habitat, conservation measures described in Chapter 5, *Conservation Strategy*, would be implemented prior to, during, and after ground-disturbing activities associated with project construction and O&M. Measures expected to be most effective at minimizing the loss of upland habitat are PBO General Protection Measure 17, which requires finalization and implementation of a grassland restoration plan, and PBO General Protection Measure 12, which requires the use of BMPs to minimize erosion. Together, these measures will help to minimize upland habitat loss by ensuring successful restoration of temporarily disturbed areas.

#### 4.6.1.2 Habitat Degradation

Habitat degradation and potential effects on San Joaquin kit fox could occur. Grading and trenching could result in burrows being crushed, temporarily removing suitable habitat. Construction vehicle operation will be loud, possibly resulting in kit foxes avoiding the construction area. Following construction, the project permit area will continue to be suitable for kit fox use and dispersal. Conservation Measures described in Chapter 5, *Conservation Strategy*, will be implemented prior to, during, and after construction and O&M activities to minimize potential effects on habitat for San Joaquin kit fox. The measures expected to be most effective at minimizing potential effects from habitat degradation are PBO San Joaquin Kit Fox Measure 4, which requires minimizing grading of areas with high concentrations of burrows; GEN-12, which requires the use of erosion control measures; and PBO General Protection Measure 17, which requires the finalization and implementation of a grassland restoration plan.

#### 4.6.1.3 Construction Impacts on Individuals

Construction impacts on San Joaquin kit fox from implementation of covered activities could include mortality, injury, or displacement or disturbance of individual kit foxes, if any are present. While there is a low probability of encountering individuals given the low density of individuals in this area, direct adverse impacts from grading and excavation are still possible. Disturbance and displacement associated with work activities could adversely affect kit foxes, if any are present. Conservation Measures described in Chapter 5, *Conservation Strategy*, will be implemented prior to, during, and after construction to minimize potential adverse effects on San Joaquin kit fox. Measures expected to be most effective at minimizing effects on individuals are measures PBO San Joaquin Kit Fox Measure 1 and MAMM-1, which require the identification and avoidance of dens.

#### 4.6.1.4 Operations and Maintenance Impacts

O&M activities, such as turbine equipment removal and repair, collection system repair, and road maintenance, could result in injury or mortality of individual kit foxes. Potential direct effects

include mortality or injury by equipment and entombment of animals if occupied burrows are covered or filled. Indirect effects from the introduction of nonnative invasive species could discourage kit foxes from using otherwise suitable areas. Increased human presence and noise from wind turbines or maintenance equipment could affect kit fox use of the project permit area. However, human presence is expected to be infrequent because the turbines are typically monitored monthly. Further operational noise is expected to be similar to the prior onsite wind farm and similar to adjacent wind projects; maintenance equipment noise is not expected to have an impact because it would occur in different locations for short durations. Conservation measures described in Chapter 5, *Conservation Strategy*, will be implemented prior to, during, and after maintenance activities to minimize potential adverse effects. Measures expected to be most effective at minimizing O&M impacts are PBO San Joaquin Kit Fox Measure 1 and MAMM-1, which require the identification and avoidance of dens, and PBO General Measure 17, which requires restoration of temporarily disturbed areas. Maintenance activities are expected to result in 0.5 acre or less of temporary disturbance every 5 years.

#### **4.6.1.5 Beneficial Impacts**

As part of restoration efforts following project construction, Rooney would reclaim and reseed staging areas, power collection system installation areas, temporary road expansions, and turbine installation areas. These restoration efforts would return most of the project site into habitat usable for kit foxes. Restoration work would be completed within 1 year of disturbance, consistent with the conservation measures described in Chapter 5, *Conservation Strategy*.

#### **4.6.1.6 Mitigation Area Impacts**

Management actions in the mitigation permit area could affect San Joaquin kit fox habitat. Fencing, stock pond repair, clean-out and enhancement of ponds, mowing, cattle management, erosion repair, species monitoring, invasive species management and control, and other actions approved in the final long-term management plan could result in temporary effects on habitat. However, these actions would be intended to maintain and improve habitat for San Joaquin kit fox and would only be conducted if beneficial effects are expected.

### **4.6.2 Cumulative Impacts**

Existing land uses under and around the wind turbines are unlikely to change given the agricultural zoning, and no other uses of the project permit area are proposed. These areas are likely to remain in grazing and open space, and existing wind leases encumber the property. Large-scale land cover conversions to other agricultural crops, such as vineyards or orchards, have not occurred in this area over the past 30 years and are consequently considered unlikely. Therefore, no substantial cumulative effects are expected to occur in the project permit area.

Regionally, the species will likely continue to suffer from cumulative effects associated with urban growth, conversion of grassland to cultivated agricultural use, fencing that restricts movement, and other activities. Currently proposed major development activities under Alameda County's jurisdiction include the Livermore Community Solar Farm project, a CalSun Solar Project, additional wind projects in the APWRA, and several residential developments. Increased urbanization in the region will contribute to loss of upland habitat and increased human presence in natural areas. Cumulative effects on San Joaquin kit fox include continuing and future loss of suitable breeding, foraging, sheltering, and dispersal habitat resulting from conversion to urban development.

Regional conservation plans such as the East Contra Costa County HCP/NCCP and EACCS are intended to provide measures to help conserve remaining habitats. Collectively, adherence to conservation measures and project-specific mitigation are expected to offset direct, indirect, and cumulative effects.

### 4.6.3 Estimated Level of Take

Incidental take of San Joaquin kit fox is unlikely. Although suitable habitat is present in the plan area, there have been very few recent sightings of San Joaquin kit foxes in the region, and the high coyote presence in the plan area reduces the likelihood that San Joaquin kit foxes would be present. However, if San Joaquin kit foxes are present, take in the form of harm through displacement or behavioral disturbance that reduces survival rates may result from construction or O&M activities. Temporary and permanent habitat loss may also result in take (in the form of harm). Take of individuals in the form of direct injury or mortality or of harm by causes other than habitat modification is unlikely given the lack of species occurrences in the area.

Any take will be minimized by implementation of the avoidance and minimization measures described in Chapter 5, *Conservation Strategy*—particularly measures such as vehicle speed limits, tube capping and daily equipment inspections, and preconstruction surveys and den management protocols, if necessary.

The applicant requests authorization of any take associated with the disturbance of 47.7 acres of habitat: 1.8 acres of permanent habitat loss and 45.9 acres of temporary habitat disturbance, respectively, during construction and O&M activities (Table 5) and actions associated with maintenance and enhancement within the mitigation permit area.

### 4.6.4 Impacts with Respect to Survival and Recovery

The recovery plan for San Joaquin kit fox (U.S. Fish and Wildlife Service 1998) focuses on core areas which are not located within the project permit area. Dispersal habitat within the project permit area would remain following the construction of the project and the HCP is not expected to have impacts with respect to survival and recovery of the species.

This chapter describes the conservation strategy that the Permittee will implement to minimize and mitigate impacts on covered species to the maximum extent practicable as required under ESA Section 10(a)(2)(B). This strategy is consistent with USFWS's HCP Handbook (U.S. Fish and Wildlife Service and National Marine Fisheries Service 2016), which provides guidance on biological goals and objectives, adaptive management, monitoring, permit duration, and public participation components, all of which should be included in HCPs. It also considers the context of EACCS, which was developed in collaboration with USFWS and the California Department of Fish and Wildlife (CDFW) to guide long-term habitat protection and preserve endangered species in the eastern part of Alameda County.

## 5.1 Biological Goals

In the context of HCPs, biological goals form the guiding principles behind the conservation program. The biological goal of this HCP is to protect and provide for the continuing existence of California red-legged frog, California tiger salamander, and San Joaquin kit fox in the APWRA. The biological objectives associated with this HCP are to permanently conserve covered species habitat through conservation easement or mitigation credits.

## 5.2 Conservation Approach

### 5.2.1 Avoidance and Minimization Measures

As required by ESA, this HCP contains measures to avoid or minimize the taking of covered species. The primary focus of these measures is to avoid or minimize take (i.e., death or injury) of individuals of covered species and impacts on high-quality habitat, such as grassland areas that may be affected by covered activities. Even with these avoidance and minimization measures, other forms of take (e.g., harm of covered species) may still result from project implementation. Proposed avoidance and minimization measures for the construction, operation, and maintenance of the project and for activities on the mitigation lands are based on measures from the EACCS (ICF International 2010) and the associated EACCS PBO (U.S. Fish and Wildlife Service 2012), but these have been modified slightly in some cases to be specific to the needs of this HCP. To ensure consistency between documents and avoid confusion, identifiers for each measure (e.g., GEN-01, PBO General Protection Measure 2) have not been changed from their source document (EACCS or EACCS PBO).

#### 5.2.1.1 General Avoidance and Minimization Measures Based on the East Alameda County Conservation Strategy

**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, and 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 and for Service Animals).

**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. An example of an appropriate storage method is to elevate materials at least 4 inches above the ground surface.

**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; areas with numerous rodent burrows will be 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 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.

### 5.2.1.2 **General Avoidance and Minimization Measures Based on East Alameda County Conservation Strategy Programmatic Biological Opinion**

**PBO General Protection Measure 1.** At least 15 days prior to any ground disturbing activities, the applicant will submit to USFWS for review and approval the qualifications of the proposed biological monitor(s). A qualified biological monitor means any person who has completed at least four years of university training in wildlife biology or a related science and/or has demonstrated field experience in the identification and life history of the listed species.

**PBO General Protection Measure 2.** A USFWS-approved biological monitor will remain on-site during all construction activities in or adjacent to habitat for listed species. The USFWS-approved biological monitor(s) will be given the authority to stop any work that may result in the take of listed species. If the USFWS-approved biological monitor(s) exercises this authority, USFWS will be notified by telephone and electronic mail within one working day. The USFWS-approved biological monitor will be the contact for any employee or contractor who might inadvertently kill or injure a listed species or anyone who finds a dead, injured or entrapped individual. The USFWS-approved biological monitor will possess a working wireless/mobile phone whose number will be provided to USFWS.

**PBO General Protection Measure 3.** Prior to construction, a construction employee education program will be conducted in reference to potential listed species on site. At minimum, the program will consist of a brief presentation by persons knowledgeable in endangered species biology and legislative protection (USFWS-approved biologist) to explain concerns to contractors, their employees, and agency personnel involved in the project. The program will include: a description of the species and their habitat needs; any reports of occurrences in the project permit area; an explanation of the status of each listed species and their protection under the Act; and a list of measures being taken to reduce effects to the species during construction and implementation. Fact sheets conveying this information and an educational brochure containing color photographs of all listed species in the work area(s) will be prepared for distribution to the above-mentioned people and anyone else who may enter the project permit area. A list of employees who attend the training sessions will be maintained by the applicant to be made available for review by USFWS upon request. Contractor training will be incorporated into construction contracts and will be a component of weekly project meetings.

**PBO General Protection Measure 4.** Preconstruction surveys for listed species will be performed immediately prior to groundbreaking activities. Surveys will be conducted by USFWS-approved biologists. If at any point, construction activities cease for more than five consecutive days, additional preconstruction surveys will be conducted prior to the resumption of these actions.

**PBO General Protection Measure 5.** To prevent the accidental entrapment of listed species during construction, all excavated holes or trenches deeper than 6 inches will be covered at the

end of each work day with plywood or similar materials. Foundation trenches or larger excavations that cannot easily be covered will be ramped at the end of the work day to allow trapped animals an escape method. Prior to the filling of such holes, these areas will be thoroughly inspected for listed species by USFWS-approved biologists. In the event of a trapped animal is observed, construction will cease until the individual has been relocated to an appropriate location.

**PBO General Protection Measure 6.** Relocation will be approved on a project specific basis. The applicant will prepare a listed species relocation plan for the project to be reviewed and approved by USFWS prior to project implementation. The plan will include trapping and relocation methods, relocation site, and post relocation monitoring.

**PBO General Protection Measure 7.** Only USFWS-approved biologists will conduct surveys and move listed species.

**PBO General Protection Measure 8.** All trash and debris within the work area will be placed in containers with secure lids before the end of each work day in order to reduce the likelihood of predators being attracted to the site by discarded food wrappers and other rubbish that may be left on-site. Containers will be emptied as necessary to prevent trash overflow onto the site and all rubbish will be disposed of at an appropriate off-site location.

**PBO General Protection Measure 10.<sup>2</sup>** All construction activities must cease one half hour before sunset and should not begin prior to one half hour after sunrise. There will be no nighttime construction.

**PBO General Protection Measure 11.** Grading and construction will be limited to the dry season, typically May-October. If approved by USFWS, an extension will be allowed to finish work in the wet season. Ground-disturbing activities or construction will not be conducted during rain events or within 24 hours following a rain event. Rain events will be defined as at least 0.25 inch in a 24-hour period for any work involving heavy equipment/vehicles or hand tools. Modifications to these work windows require USFWS approval. Following a rain event and prior to the continuation of ground-disturbing activities, a USFWS-approved biologist will inspect the work area for the presence of central California tiger salamanders or California red-legged frogs. If individuals of either species are located during these surveys, they will be relocated outside the exclusion fencing (if present) or the boundary of the work area, a minimum of 70 feet. Planting and seeding activities may continue during the wet season within established work areas without the need for USFWS approval.

**PBO General Protection Measure 12.** Best Management Practices (BMPs) will be used to minimize erosion and impacts to water quality and effects to aquatic habitat. If necessary, a Storm Water Pollution Prevention Plan (SWPPP) will be prepared.

**PBO General Protection Measure 13.** The applicant will ensure a readily available copy of this document is maintained by the construction foreman/manager on the project site whenever

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<sup>2</sup> PBO General Protection Measure 9 is not included because work will not be conducted adjacent to ponds; furthermore, the measure is infeasible as it calls for manual removal of vegetation: "All vegetation which obscures the observation of wildlife movement within the affected areas containing or immediately adjacent aquatic habitats will be completely removed by hand just prior to the initiation of grading to remove cover that might be used by listed species. The USFWS-approved biologist will survey these areas immediately prior to vegetation removal to find, capture and relocate any observed listed species, as approved by USFWS."

earthmoving and/or construction is taking place. The name and telephone number of the construction foreman/manager will be provided to USFWS prior to groundbreaking.

**PBO General Protection Measure 14.** The construction area shall be delineated with high visibility temporary fencing at least 4 feet in height, flagging, or other barrier to prevent encroachment of construction personnel and equipment outside of the construction area. Such fencing/flagging shall be inspected and maintained daily until completion of the project. The fencing will be removed only when all construction equipment is removed from the site.

**PBO General Protection Measure 15.**<sup>3</sup> Wildlife exclusion fencing will be installed at strategic locations to minimize impacts on species moving through the project permit area. For the dry season, proposed fencing locations will be submitted to USFWS for approval at least 15 days prior to the start of construction activities and will include installation of exclusion fencing around all work areas within 500 feet of potential California red-legged frog or California tiger salamander aquatic breeding habitat. Wet season fencing locations will be submitted to USFWS for approval by October 15. In order to monitor the effectiveness of the exclusionary fencing, a USFWS-approved biologist will conduct regular surveys of the access roads to check for evidence of vehicular strike of listed species. A USFWS-approved biologist will also walk all fencelines at the beginning and end of each work day to look for individuals stranded along the fenceline. Adaptive contingency measures including the installation of additional fencing, increased monitoring intensity, or a reduced speed limit on project roads may be implemented as appropriate to reduce take. Exclusion fencing will be at least 3 feet high and the lower 6 inches of the fence will be buried in the ground to prevent animals from crawling under. The remaining 2.5 feet will be left above ground to serve as a barrier for animals moving on the ground surface. The fence will be pulled taut at each support to prevent folds or snags. Fencing shall be installed and maintained in good condition during all construction activities. Such fencing shall be inspected and maintained daily until completion of the project. The fencing will be removed only when all construction equipment is removed from the site.

**PBO General Protection Measure 16.** A USFWS-approved biologist shall ensure that the spread or introduction of invasive exotic plant species shall be avoided to the maximum extent possible. Invasive exotic plants occurring from project activities in the plan area shall be removed to baseline levels.

**PBO General Protection Measure 17.** Within 30 days prior to any ground disturbance, a qualified biologist will finalize the Grassland Restoration Plan<sup>4</sup> in coordination with USFWS and subject to USFWS approval, to ensure that temporarily disturbed annual grasslands and areas planned for the removal of turbine pad areas are restored to preconstruction conditions. The Grassland Restoration Plan will include but not be limited to the following measures:

- Gravel will be removed from areas proposed for grassland restoration.
- To the maximum extent feasible, topsoil will be salvaged from within onsite work areas prior to construction and stockpiled for use in restoration. Imported fill soils will be limited

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<sup>3</sup> To avoid confusion or contradictory information related to the location of exclusionary fencing between EACCS PBO General Protection Measure 15 and EACCS Species AMMs (AMPH-1 and AMPH-2), the HCP will default to PBO General Protection Measure 15, which requires (1) submittal and approval of all dry and wet season fencing locations and (2) placement of exclusionary fencing at worksites that are within 500 feet of potential aquatic breeding habitat of California red-legged frog or California tiger salamander.

<sup>4</sup> A proposed Grassland Restoration Plan is provided as Appendix A. The Grassland Restoration Plan would be finalized with USFWS and CDFW prior to ground disturbance.

to weed free topsoil similar in texture, chemical composition, and pH to soils found at a reference site.

- Where appropriate, restoration areas will be seeded (hydroseeding is acceptable) to ensure erosion control. Seed mixes will be tailored to closely match that of reference site(s) within the project area and should include native or naturalized, non-invasive species sourced within the project area or within 50 miles of the project area.
- Reclaimed roads will be restored and vehicular travel will be restricted using grading or boulders or other appropriate methods to permanently restrict vehicle usage.
- Success criteria for determining whether restoration efforts are successful will be included. At a minimum, criteria will address the following: (1) removal of sufficient gravel; (2) appropriate levels of soil compaction that allow for burrow establishment and adequate infiltration rates; (3) appropriate vegetation communities and percent native species plant cover for slope, aspect, and hydrological conditions based on reference sites and pre-project condition; and (4) an acceptable level of invasive plant cover at or below pre-project conditions.
- A requirement to monitor restoration areas will be defined in the Grassland Restoration Plan.

**PBO General Protection Measure 18.** If a work site is to be temporarily dewatered by pumping, intakes shall be completely screened with wire mesh not larger than 5 millimeters. Water shall be released or pumped downstream at an appropriate rate to maintain downstream flows during construction. Upon completion of construction activities, any barriers to flow shall be removed in a manner that would allow flow to resume with the least disturbance to the substrate.

**PBO General Protection Measure 19.** If activities require dewatering, a USFWS-approved biologist shall permanently remove, from within the dewatered area, any individuals of exotic species, such as bullfrogs, crayfish, and centrarchid fishes, to the maximum extent possible. The applicant shall have the responsibility to ensure that their activities are in compliance with the California Fish and Game Code.

### 5.2.1.3 Species-Specific Avoidance and Minimization Measures Based on East Alameda County Conservation Strategy

**AMPH-1 (California Tiger Salamander and California Red-legged Frog).<sup>5</sup>** If aquatic habitat is present, a qualified biologist will stake and flag an exclusion zone prior to activities. The exclusion zone will be fenced with orange construction zone and erosion control fencing (to be installed by construction crew). The exclusion zone will encompass the maximum practicable distance from the work site and at least 500 feet from the aquatic feature wet or dry.

**AMPH-2 (California Tiger Salamander and California Red-legged Frog).<sup>5</sup>**

- A USFWS-approved biologist will conduct preconstruction surveys prior to ground disturbing activities within 500 feet of an aquatic feature. If individuals are found, work will not begin until they are moved out of the construction zone to a USFWS- and CDFW-approved relocation site.

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<sup>5</sup> See footnote #3 on previous page.

- A USFWS-approved biologist should be present for initial ground disturbing activities.
- If the work site is within the typical dispersal distance (contact USFWS or CDFW for latest research on this distance for species of interest) of potential breeding habitat, barrier fencing will be constructed around the worksite to prevent amphibians from entering the work area. Barrier fencing will be removed within 72 hours of completion of work.
- No monofilament plastic will be used for erosion control.
- Construction personnel will inspect open trenches in the morning and evening for trapped amphibians.
- A USFWS-approved biologist possessing a valid ESA Section 10(a)(1)(A) permit or USFWS approval under an active biological opinion, will be contracted to trap and to move amphibians to nearby suitable habitat if amphibians are found inside fenced area.
- Work will be avoided within suitable habitat from October 31 (or the first measurable fall rain of 1 inch or greater) to May 1; but if approved by USFWS, wet-season work can occur for a limited time.

#### **MAMM-1 (San Joaquin Kit Fox).**

- If potential dens are present, their disturbance and destruction will be avoided.
- If potential dens are located within the proposed work area and cannot be avoided during construction, USFWS-approved biologist will determine if the dens are occupied or were recently occupied using methodology coordinated with USFWS and CDFW. If unoccupied, the USFWS-approved biologist will collapse these dens by hand in accordance with USFWS procedures (U.S. Fish and Wildlife Service 1999).
- Exclusion zones will be implemented following USFWS procedures (U.S. Fish and Wildlife Service 1999) or the latest USFWS procedures available at the time. The radius of these zones will follow current standards or will be as follows: Potential Den—50 feet; Known Den—100 feet; Natal or Popping Den—to be determined on a case-by-case basis in coordination USFWS and CDFW.
- Pipes will be capped and trenches will contain exit ramps to avoid direct mortality while construction areas are active.

### **5.2.1.4 Species-Specific Avoidance and Minimization Measures Based on East Alameda County Conservation Strategy Programmatic Biological Opinion**

**PBO Red-Legged Frog Measure 1.** A USFWS-approved biologist shall survey the work site immediately prior to construction activities. If California red-legged frogs, tadpoles, or eggs are found, the approved biologist shall contact USFWS to determine if moving any of these life-stages is appropriate. In making this determination USFWS shall consider if an appropriate relocation site exists as provided in a USFWS-approved relocation plan. If USFWS approves moving animals, the approved biologist shall be allowed sufficient time to move California red-legged frogs from the work site before work activities begin. Only USFWS-approved biologists shall participate in activities associated with the capture, handling, and monitoring of California red-legged frogs.

**PBO Red-Legged Frog Measure 2.** Bare hands shall be used to capture California red-legged frogs. USFWS-approved biologists will not use soaps, oils, creams, lotions, repellents, or solvents of any sort on their hands within two hours before and during periods when they are capturing and relocating individuals. To avoid transferring disease or pathogens of handling of the amphibians, USFWS-approved biologists will follow the Declining Amphibian Populations Task Force's "Code of Practice."

**PBO California Tiger Salamander Measure 1.** A USFWS-approved biologist shall survey the work site immediately prior to construction activities. If Central California tiger salamanders, larvae, or eggs are found, the approved biologist shall contact USFWS to determine if moving any of these life-stages is appropriate. In making this determination USFWS shall consider if an appropriate relocation site exists as provided in a USFWS-approved relocation plan. If USFWS approves moving animals, the approved biologist shall be allowed sufficient time to move Central California tiger salamanders from the work site before work activities begin. Only USFWS-approved biologists shall participate in activities associated with the capture, handling, and monitoring of Central California tiger salamanders.

**PBO California Tiger Salamander Measure 2.** Bare hands shall be used to capture Central California tiger salamanders. USFWS-approved biologists will not use soaps, oils, creams, lotions, repellents, or solvents of any sort on their hands within two hours before and during periods when they are capturing and relocating individuals. To avoid transferring disease or pathogens of handling of the amphibians, USFWS-approved biologists will follow the Declining Amphibian Populations Task Force's "Code of Practice."

**PBO San Joaquin Kit Fox Measure 1.** A qualified USFWS-approved biologist will conduct a preconstruction survey no more than 30 days before the beginning of ground disturbance or any activity likely to affect San Joaquin kit fox. This measure will be implemented in all off-road construction areas. The biologist will survey the proposed construction area and a 200-foot buffer area around the construction area to identify suitable dens. The biologist will conduct den searches by systematically walking transects spaced 30-100 feet apart through the survey area. Transect distance should be determined on the basis of the height of vegetation such that 100 percent visual coverage of the project area is achieved. If dens are found during the survey, the biologist will map the location of each den as well as record the size and shape of the den entrance; the presence of tracks, scat, and prey remains; and if the den was recently excavated. The biologist will also record information on prey availability (e.g., ground squirrel colonies). The status of the den as defined by USFWS should also be determined and recorded. Dens will be classified in one of the following four den status categories:

- a. Potential den: Any subterranean hole within the species' range that has entrances of appropriate dimensions for which available evidence is sufficient to conclude that it is being used or has been used by a San Joaquin kit fox. Potential dens comprise: (1) any suitable subterranean hole; or (2) any den or burrow of another species (e.g., coyote, badger, red fox, or ground squirrel) that otherwise has appropriate characteristics for San Joaquin kit fox use.
- b. Known den: Any existing natural den or artificial structure that is used or has been used at any time in the past by a San Joaquin kit fox. Evidence of use may include historical records; past or current radio telemetry or spotlighting data; San Joaquin kit fox signs such as tracks, scat, and/or prey remains; or other reasonable proof that a given den is being or has been used by a San Joaquin kit fox.

- c. **Natal or pupping den:** Any den used by San Joaquin kit fox to whelp and/or rear their pups. Natal/pupping dens may be larger with more numerous entrances than dens occupied exclusively by adults. These dens typically have more San Joaquin kit fox tracks, scat, and prey remains in the vicinity of the den, and may have a broader apron of matted dirt and/or vegetation at one or more entrances. A natal den, defined as a den in which San Joaquin kit fox pups are actually whelped but not necessarily reared, is a more restrictive version of the pupping den. In practice, however, it is difficult to distinguish between the two; therefore, for purposes of this definition either term applies.
- d. **Atypical den:** Any artificial structure that has been or is being occupied by a San Joaquin kit fox. Atypical dens may include pipes, culverts, and diggings beneath concrete slabs and buildings.

Written results of the surveys will be submitted to USFWS within one week of the completion of surveys and prior to the beginning of ground disturbance and/or construction activities likely to affect San Joaquin kit fox.

**PBO San Joaquin Kit Fox Measure 2.** After preconstruction den searches and before the commencement of construction activities, a qualified USFWS-approved biologist will establish and maintain the following exclusion zones measured in a radius outward from the entrance or cluster of entrances of each den.

- a. **Potential and atypical dens:** A total of 4 or 5 flagged stakes will be placed 50 feet from the den entrance to identify the den location.
- b. **Known den:** Orange construction barrier fencing will be installed between the construction work area and the known den site at a minimum distance of 100 feet from the den. The fencing will be maintained until all construction-related disturbances have been terminated. At that time, all fencing will be removed to avoid attracting subsequent attention to the den.
- c. **Natal/pupping den:** USFWS will be contacted immediately if a natal or pupping den is discovered at or within 200 feet from the boundary of the construction area.
- d. **Construction and other project activities** will be prohibited or greatly restricted within these exclusion zones. Only essential vehicular operation on existing roads and foot traffic should be permitted and articulated to USFWS. All other construction activities, vehicle operation, material and equipment storage, and other surface-disturbing activities will be prohibited in the exclusion zones.
- e. **In cases where avoidance is not a reasonable alternative,** limited destruction of potential San Joaquin kit fox dens will be allowed. Potential dens can be removed by careful hand excavation by a USFWS-approved biologist or under the supervision of a USFWS-approved biologist, after the dens have been monitored for 3 days with tracking medium or a remote sensor camera and determined to be vacant of San Joaquin kit foxes. If, during excavation or monitoring, a potential den is determined to be currently or previously used (e.g., San Joaquin kit fox sign found inside) by San Joaquin kit fox, then destruction of the den or construction in that area will cease and USFWS will be notified immediately.

**PBO San Joaquin Kit Fox Measure 3.** Vehicle traffic will be restricted to established roads, construction areas, and other designated areas.

**PBO San Joaquin Kit Fox Measure 4.** Grading activities shall be designed to minimize or eliminate effects to rodent burrows. Areas with high concentrations of burrows and large

burrows suitable for San Joaquin kit fox dens shall be avoided by grading activities to the maximum extent possible. In addition, when concentrations of burrows or large burrows are observed within the site these areas shall be staked and flagged to ensure construction personnel are aware of their location and to facilitate avoidance of these areas.

### 5.2.1.5 Additional Conservation Measures

**ADD-1.** Coverboards will be placed every 50–100 feet along in the inside and outside of the fenceline to minimize mortality of individual California tiger salamanders during dispersal and migration. The inside cover boards will be checked daily during fenceline monitoring. If individuals are found, they will be relocated as directed in the USFWS-approved relocation plan.

**ADD-2.** To confirm the absence and facilitate avoidance of listed plant species within the project permit area, a special-status plant survey will be completed prior to construction. The focused survey shall be conducted by a qualified biologist/botanist during the appropriate blooming period, or when the plant is readily identifiable, prior to the initiation of construction. Any populations of listed plant species found will be avoided by construction and maintenance activities in a manner approved by CDFW and USFWS to ensure that populations will not be harmed by construction ground disturbance or postconstruction changes to hydrology or topography.

**ADD-3.** Nonnative or invasive species, such as American bullfrogs, if found in the work area should be permanently removed from the project site by the qualified biological monitor (as defined under PBO General Protection Measure 1) whenever possible.

**ADD-4.** All equipment will be cleaned prior to mobilization into the project permit area to reduce the spread of invasive weeds into the area. If equipment is being moved in the project permit area from a project site that has invasive weed species to another project that does not, the equipment will be cleaned.

**ADD-5.** Fencing used for the project must create a visual and physical barrier for California tiger salamanders and California red-legged frogs; if the fencing is mesh and see-through, some other material must be placed at the bottom to restrict frogs and salamanders from seeing through it.

**ADD-6.** Seams that develop in the fenceline must be checked during monitoring surveys as California tiger salamanders have been known to take refuge in them.

**ADD-7:** Any fencing that is not meant for long-term use (i.e., not Ertec-like), will be replaced after 1 year of use, if construction lasts that long.

**ADD-8.** A biological monitor will daily monitor wind speed and direction as well as dust created during vehicle transport around rock outcrops and dust generated by staging area activities. If the monitor believes that dust and wind conditions could cause dust to be deposited in rock outcrop pools, then the biological monitor has the authority to stop all activities until conditions improve or to modify activities to eliminate dust creation until adverse conditions are eliminated.

**ADD-9.** Roads, staging areas, and construction sites within 0.25 mile of rock outcrops will be watered down daily to ensure that no dust is created that could cause sedimentation into rock outcrops. Watering will occur as frequently as necessary to minimize dust conditions around rock outcrop pools.

**ADD-10.** To ensure that potential indirect effects on aquatic habitats are minimized, a hydrologist will assist with design of project components, including access roads that are constructed within 250 feet of aquatic habitats. The intent of this measure is for the hydrologist to ensure that the project components are constructed in consideration of site-specific conditions such that the components do not obstruct natural drainage patterns, potentially redirecting flows away from the aquatic features, or concentrate flows that could cause erosion and sediment delivery to the features. A description of the methods and results of this work will be provided to USFWS prior to construction of project components within 250 feet of aquatic habitats.

## 5.2.2 Compensatory Mitigation

The applicant has proposed compensatory mitigation to offset the permanent and temporary effects of the project on California red-legged frog, California tiger salamander, and San Joaquin kit fox within the project permit area. The applicant intends to purchase either mitigation land or credits in Alameda County in accordance with the conditions of the mitigation criteria listed below; however, final selection of mitigation land, credits, or some combination of the two will be based on availability of mitigation options at the time of purchase and will be contingent on approval by USFWS and CDFW. Mitigation lands or credits purchased for the mitigation will adhere to the species mitigation ratios in Tables 3-7, 3-8, and 3-11 in the EACCS; if mitigation lands are not in the same mitigation zone as the impact area, the ratios may differ from those shown in Table 6.

The applicant will provide proof of recordation of a conservation easement (a template is provided in Appendix C) or acquisition of mitigation credits to USFWS within 12 months after the initial ground disturbance date. To provide financial assurances, a letter of credit or a bond will be provided to USFWS within 30 days of the issuance of the HCP permit to provide for the purchase of mitigation land and its endowment. If a letter of credit is used to provide financial assurances, CDFW must be listed as the beneficiary. If a bond is used to provide financial assurances, USFWS must be listed as the beneficiary. The letter of credit or a bond will note that USFWS and CDFW will determine compliance with the terms and conditions of each agency's respective permits, prior to cancelling the letter of credit or bond. Mitigation credits will be purchased within the same timeline in the event the applicant cannot find mitigation lands. The letter of credit or bond will equal the amount of the estimated land price at the time of initial ground disturbance and the proposed endowment cost as required to support the long-term management plan (Appendix D) as detailed in Appendix E. The applicant will provide at least 51.3 acres of permanent mitigation lands (an amount equal to a 3:1 ratio for permanent impacts and a 1:1 ratio for temporary upland impacts) that meet the site selection criteria outlined in Section 5.2.2.1, *Site Selection Criteria*. Impacts and compensation are enumerated in Table 6. The permanent mitigation will compensate for both temporary and permanent construction impacts and temporary O&M impacts. By providing the O&M mitigation (3 acres) in advance of the impacts, the mitigation will also provide a temporal benefit for the species.

**Table 6. Impacts and Compensation<sup>1</sup>**

Land Cover Type	Acres in Project Permit Area	Disturbance Type	Impact Acres	Compensation Ratio	Acres or Credits to be Purchased
Annual grassland	575.3	Permanent*	1.8	3:1	5.4
		Temporary	45.9	1:1	45.9
Total					51.3

<sup>1</sup> The permanent impact Compensation Ratio will adhere to the species mitigation ratios in Tables 3-7, 3-8, 3-11 of the EACCS; if not in the same EACCS species mitigation zone as the impact area, these ratios may differ from those shown in this table.

### 5.2.2.1 Site Selection Criteria

The mitigation site will be selected based on the following criteria.

- It will be located within the mitigation permit area (Alameda County).
- The mitigation site must have known occurrences of breeding California tiger salamander and California red-legged frog onsite or it must be within 1 mile of a protected and occupied breeding pond that is being managed for these species in perpetuity with no barriers to dispersal to the mitigation site, so that individuals can access the upland habitat on the mitigation site.
- The mitigation site must be within the current range for San Joaquin kit fox. To use the proposed 3:1 ratio for listed amphibian species, the mitigation site must be north of I-580 and in the California tiger salamander North Mitigation Area, inside California red-legged frog critical habitat and in the California red-legged frog North Mitigation Area, and in the San Joaquin kit fox East Mitigation Area.
- The mitigation site will be connected to open space that is not planned for intensive land use, residential or commercial development, or non-rangeland agriculture, or to a preserve that is conserved in perpetuity and has habitat for California red-legged frog, California tiger salamander, or San Joaquin kit fox dispersal. The mitigation site will abut this open space such that an ecological connection is present (i.e., a connection that would allow the movement of individuals of covered species from one area to another).
- The lands to be conserved and managed will be within a large, contiguous habitat block with habitat for the covered species.
- The site cannot be adjacent to agricultural lands for a substantial portion of its perimeter to reduce the threat of pesticide impacts.

The following items will be required for the selected mitigation site and will meet the January 30, 2014, USFWS Section 7 Compensatory Review Site Criteria, unless otherwise stated here or in the reports provided in this HCP document (Appendix F).

- Title report
- Property assessment and warranty
- Legal description and parcel map
- Phase 1 Environmental Site Assessment
- Conservation easement (see below)

- Long-term management plan (see below)
- Endowment fund analysis (see below)

### **5.2.2.2 Conservation Easement**

In the event the applicant purchases a conservation easement, the easement will be held by an accredited land trust or other entity approved by USFWS and CDFW. The easement will not allow development of wind resources and will not have any existing liens, leases, or other title encumbrances related to wind resources. The conservation easement template (Appendix B) will be completed based on the specific mitigation site identified.

### **5.2.2.3 Long-Term Management Plan**

The applicant will prepare and submit to USFWS and CDFW for approval a long-term management plan for the easement, addressing enhancement and restoration methods, monitoring and reporting requirements, success criteria, and long-term management activities including invasive species and predator management. Moreover, the applicant will provide an endowment to fund the management, monitoring, and security of the mitigation permit area in perpetuity in accordance with terms approved by USFWS. The draft long-term management plan template (Appendix C) will be completed based on the specific mitigation site identified and the management needs of that site.

### **5.2.2.4 Endowment Fund Analysis**

Rooney Ranch developed a PAR-like cost estimate for the long-term management of a 51.3-acre mitigation site (Appendix D). The cost estimate assumes that the elements of the long-term management plan would be implemented on the site. The endowment cost estimate will be refined when the final site is selected and the long-term management plan is developed.

### **5.2.2.5 Summary of Compensatory Mitigation**

The applicant has developed the compensatory mitigation proposal to mitigate the impacts of the take of covered species to the maximum extent practicable. Permanent impacts on upland habitat for California tiger salamander, California red-legged frog, and San Joaquin kit fox would be mitigated at a 3:1 ratio. Temporary impacts on upland habitat for these species would also be mitigated at the mitigation permit area by permanently protecting upland habitat.

Overall, the mitigation proposal would mitigate the impacts of the covered species taking because of the following considerations.

- Permanent impacts are mitigated. The mitigation site will provide protection in perpetuity of occupied upland habitat for the covered species. The mitigation will be three times greater than the impact.
- Temporary impacts are mitigated. The mitigation site will provide protection in perpetuity of occupied upland habitat for the covered species. This mitigation is provided at an amount commensurate with the impact. Further, restoration actions will ensure that the impact areas are restored and become usable by the species again; therefore, the mitigation provided is beyond the extent of the taking.

- The applicant is proposing mitigation for all suitable dispersal habitat, including areas that extend beyond the average California tiger salamander and California red-legged frog dispersal distances.

## 5.3 Monitoring and Adaptive Management

### 5.3.1 Monitoring

As discussed in the following sections, monitoring will be conducted to verify completion of the HCP requirements, including estimated levels of take, as stated in this document (compliance and effects monitoring), and to monitor and evaluate the effectiveness of the conservation strategy (effectiveness monitoring).

The monitoring program was designed to ensure that the biological goals and objectives of this HCP are achieved. Management and monitoring of the mitigation site will be detailed in a USFWS-approved long-term management plan (Appendix C). Monitoring under the long-term management plan will inform the adaptive management process and will be used to ensure that the mitigation site remains suitable for covered species.

#### 5.3.1.1 Compliance Monitoring

Compliance monitoring will be required under this HCP to verify and document that all requirements in the HCP and terms and conditions of the ITP are carried out. The applicant must verify that the avoidance and minimization measures, required under Section 5.2.1 of this HCP, have been implemented successfully. To satisfy this condition, the applicant will hire biologists approved by USFWS to conduct necessary preconstruction surveys and monitoring during the implementation of covered activities. A consultant will document compliance with the avoidance and minimization measures of this HCP by submitting monthly and year-end reports, through the applicant, to USFWS. These reports will document the activities that occurred and which avoidance and minimization measures were implemented. The HCP will be deemed in compliance if all the terms and conditions of the ITP have been implemented and documented.

Documentation will be provided to USFWS verifying compliance with the pre-project minimization measures no later than 14 calendar days before project implementation. The applicant will provide monthly compliance and status reports to the USFWS during construction by the 5th business day of each month for the prior month that project activities occurred, documenting: (1) dates that construction occurred; (2) photo documentation of construction and applicable minimization measures; (3) pertinent information concerning the success of the project in meeting minimization measures including status of the compensation; (4) an explanation of failure to meet such measures, if any; (5) known project effects on listed species, if any; (6) occurrences of incidental take of listed species, if any; (7) documentation of employee environmental education; and (8) other pertinent information. The report will identify and describe the location and acreage of temporary and permanent effects to date; the location, method, and acreage of restoration activities conducted to date; and a summary of construction monitoring activities including results of preconstruction and daily clearance surveys, compliance inspections, and observations of listed species.

### 5.3.1.2 Effectiveness Monitoring

Both the project permit area and the mitigation permit area will be monitored. The primary goal of effectiveness monitoring is to ensure that annual grassland habitat is restored in the project permit area and remains suitable for California tiger salamander, California red-legged frog, and San Joaquin kit fox in the mitigation area.

#### Project Permit Area

The primary purpose of monitoring in the project permit area will be to ensure that restored areas attain habitat characteristics and vegetation structure similar to those of adjacent annual grassland. Success criteria for grassland restoration will be based on existing vegetation conditions at a nearby reference site within the plan area and will be identified fully in the grassland restoration plan required under PBO General Protection Measure 17.

#### Mitigation Permit Area

The primary purpose of monitoring in the mitigation permit area will be to ensure that vegetation structure and habitat characteristics of existing annual grassland and aquatic habitats are maintained in perpetuity for the benefit of covered species and to sustain their populations at the site. Monitoring will be conducted in accordance with the USFWS-approved long-term management plan.

### 5.3.2 Adaptive Management

Adaptive management—the process of modifying and evolving management decisions based on data collected—is typically most appropriate for regional conservation plans. For this project-specific HCP, the applicant will implement passive adaptive management and will monitor the success of the restoration effort to maintain the integrity of habitat onsite. If restoration efforts are unsuccessful, the applicant will implement additional reseeded to recover upland habitat onsite.

### 5.3.3 Reporting

Rooney will prepare annual reports over the term of the HCP that document permit compliance, impacts, conservation actions, management actions, and monitoring results. The annual reports will summarize the previous year's implementation activities and be provided to USFWS by February 15 following the reporting year. Annual reports will require synthesis of data and reporting on important trends. The goals of the annual report are listed below.

- To provide the information and data necessary for Rooney to demonstrate to USFWS and the public that the HCP is being implemented properly.
- To disclose any problems with HCP implementation and the corrective measures planned or implemented to address the problem.
- To identify administrative or minor changes to HCP components necessary to increase the success of conservation measures.
- To describe all covered activities implemented during the reporting period and the total acreage of disturbed land resulting from these activities (including as-built drawings for the project and any compensatory mitigation features, if applicable).

- To provide a year-to-date and cumulative (i.e., from the start of the permit term) summary of permanent and temporary impacts on all land cover types.
- To provide a year-to-date and cumulative (i.e., from the start of the permit term) quantification of take for each species in terms of acres of disturbed habitat, demonstrating compliance with the authorized level of take in the ITP.
- To provide a year-to-date and cumulative quantification of the number of California red-legged frogs, California tiger salamanders, and San Joaquin kit foxes observed, killed, or harmed during implementation of covered activities.
- To provide a description of all habitat acquisition, restoration, and conservation actions implemented during the reporting period.
- To provide a year-to-date and cumulative summary of the extent of land cover types enhanced.
- To provide an evaluation of the economic assumptions on which the HCP was based (e.g., actual HCP costs versus projections).
- To describe the adaptive management process used during the reporting period, if applicable.
- To summarize the recommendations or advice provided by USFWS regarding adaptive management and monitoring, if applicable.
- To provide a summary for the reporting period of the monitoring program objectives, techniques, and protocols, including monitoring locations, variables measured, sampling frequency, timing and duration, and analysis methods.
- To assess the efficacy of the monitoring and research program and recommended changes to the program based on interpretation of monitoring results and research findings, if applicable.
- To assess the efficacy of habitat restoration and creation methods in achieving performance objectives and recommended changes to improve the efficacy of the methods.
- To describe all HCP-directed studies undertaken during the reporting period; summarize study results; and describe integration with monitoring, assessment, and compliance elements.
- To provide a description of any actions taken or expected regarding changed circumstances, including remedial actions, if applicable.
- To provide a description of any unforeseen circumstances that arose and responses taken, if applicable.
- To provide a summary of any administrative changes, minor modifications, or major amendments proposed or approved during the reporting year (Chapter 9, *Revisions and Amendments*).

## 5.4 Summary of Conservation Strategy

In summary, the conservation strategy consists of measures that minimize habitat disturbance and avoid injury of California red-legged frogs, California tiger salamanders, and San Joaquin kit foxes; restore temporarily affected habitat areas; and mitigate impacts through conservation at a 3:1 ratio for permanent effects on grasslands and at a 1:1 ratio for temporary effects regardless of the distance to suitable aquatic habitat. The permanent impact Compensation Ratio will adhere to the

species mitigation ratios in Tables 3-7, 3-8, and 3-11 of the EACCS. Covered activities will not preclude or disrupt important connectivity within or between covered species populations, and they will not preclude movement between aquatic habitat and surrounding upland areas because wind turbines, unlike urban development, are widely dispersed and represent low-intensity development. Moreover, direct impacts on suitable aquatic habitat will be avoided. In addition, continued wind energy development in this area will maintain the land in relative open space for the approximately 35-year life of the project<sup>6</sup> and will prevent future rezoning and more intensive agricultural development from occurring during that period. The lands to be conserved and managed will be within a large, contiguous habitat block suitable to support the covered species. These lands will provide long-term conservation value for the covered species, thereby offsetting impacts on habitat and the species.

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<sup>6</sup> The total term of the HCP is 36 years, which covers up to 1 year of project construction and up to 35 years of operations.

## 6.1 Responsible Parties

This section describes the organizational structure that will be established to implement the HCP and the roles, functions, and responsibilities of the parties involved in its implementation.

### 6.1.1 Permittee

The Permittee will be responsible for implementing the conservation measures described in Chapter 5, *Conservation Strategy*, including compliance monitoring and reporting. The Permittee will track and document compliance with the conservation measures and will be responsible for preparing compliance reports to be submitted to USFWS as described in Section 5.3.3, *Reporting*.

### 6.1.2 U.S. Fish and Wildlife Service

USFWS is the regulatory agency that issues the federal ITP and will oversee implementation of the HCP. USFWS will receive reports submitted by the Permittee and will have an opportunity to review and comment on these reports.

## 6.2 Compliance Monitoring and Reporting

The permittee will submit to USFWS and CDFW compliance monitoring and reporting consistent with Section 5.3.3, *Reporting*. The permittee will implement compliance and effectiveness monitoring as consistent with Section 5.3.1.

## 6.3 Assurances Requested

This section discusses the assurances requested by Rooney that will accompany the ESA Section 10(a)(1)(B) permit issued by USFWS. These assurances involve defining changed and unforeseen circumstances for this HCP and receiving “no surprises” coverage based on a common understanding of the commitments made in this HCP. The Habitat Conservation Plan Assurances (“No Surprises”) Rule [50 CFR 17.21(b)(5)-(6) and 17.22(b)(5)-(6); 63 FR 8859] defines unforeseen circumstances and changed circumstances and describes the obligations of the permittee and USFWS.

- **Changed circumstances** are defined by federal regulation as those circumstances affecting a species or geographic area covered by an HCP that can be reasonably anticipated by the applicant and USFWS and to which the parties can plan a response (50 CFR Section 17.3).
- **Unforeseen circumstances** are defined by federal regulation as changes in circumstances affecting a species or geographic area covered by an HCP that could not reasonably have been

anticipated by the applicant or USFWS at the time of HCP development and that result in a substantial and adverse change in the status of the covered species (50 CFR Section 17.3).

- The **No Surprises Regulation** (50 CFR 17.22(b)(5) and 50 CFR 17.32(b)(5)) allows the USFWS to require additional measures of the permittee where the conservation plan is being properly implemented, but only if such measures are limited to modifications within conserved habitat areas, if any, or to the conservation plan's operating conservation program for the affected species, and maintain the original terms of the conservation plan to the maximum extent possible. Additional conservation and mitigation measures will not involve the commitment of additional land, water or financial compensation or additional restrictions on the use of the land, water, or other natural resources otherwise available for development or use under the original terms of the conservation plan without the consent of the permittee.
- **Properly implemented** means that the commitments and provisions of an HCP, Implementing Agreement (if applicable), and permit are being fully implemented.

### 6.3.1 Changed Circumstances

Section 10 regulations (50 CFR Section 17.22 [b][1][iii]) require that an HCP specify the procedures to be used for dealing with changed and unforeseen circumstances that may arise during implementation of the HCP. The following changed circumstances can reasonably be anticipated in the mitigation permit area.

- New species listings
- Climate change
- Nonnative invasive species or disease
- Wildfire
- Drought
- Earthquakes

If Rooney becomes aware of a changed circumstance within the mitigation area as defined by these sections, it will modify its activities, in the manner described below, to the extent necessary to address the effects of the changed circumstances on the HCP's conservation strategy. Rooney will also notify USFWS to determine whether additional minimization or mitigation measures might be necessary. As noted and described in the Endowment Cost Estimate (Appendix E), 15% of the total estimate for long-term management has been added to the total for the endowment to address contingencies, including changed circumstances.

#### 6.3.1.1 New Species Listings

Over the course of the 36-year permit term, USFWS could list species that are not covered under this HCP as threatened or endangered under the ESA. Once Rooney becomes aware that a new noncovered species associated with habitat in the plan area may be listed or proposed for listing or candidacy, the following measures will be taken.

- **Conduct an impact assessment.** The potential impacts of covered activities on the new noncovered species will be evaluated, including an assessment of the presence of suitable habitat in the plan area. If Rooney determines that the new species occurs or could occur in the

plan area, and once USFWS has made a “may be warranted” finding, Rooney will use best efforts to identify any necessary measures to avoid the likelihood of jeopardy to or take of the new noncovered species. These measures will be developed in coordination with USFWS.

- **Apply for permit amendment or alternative take coverage.** If the impact analysis indicates that a permit is required, Rooney will work with USFWS on interim guidelines for the species until the permit amendment is finalized. In most cases, permit amendments to include additional covered species are treated as a major amendment under USFWS Section 10 regulations (see Chapter 9, *Revisions and Amendments*). Alternatively, Rooney could apply for a new and separate permit.

### 6.3.1.2 Climate Change

Climate change is the observed increase in mean global temperature associated with increased greenhouse gas emissions, primarily carbon dioxide, as a result of human industrialization. Climate change is also predicted to lead to secondary global impacts such as sea level rise and changing weather patterns. Current global and regional trends suggest that climate change is likely to affect the mitigation area lands. Change in temperature over the past century was a global average of 0.6°C (2.2°F), and most global climate models predict temperature increases as high as 6°C (10.8°F) over the coming century (Intergovernmental Panel on Climate Change 2007). Temperature projections for various California ecoregions range within this annual average. Overall, climate change can reasonably be expected to influence the ecological response of covered species over the permit term. The magnitude of these changes and the specific changes remain uncertain. Declines of species on mitigation lands could occur. These changes would be considered a changed circumstance under this HCP and would not require additional action by Rooney.

### 6.3.1.3 Nonnative Invasive Species and Disease

Nonnative species (e.g., bullfrogs, invasive plants) and diseases (e.g., chytrid fungus) that exist in areas outside the plan area have the potential to spread into the plan area and adversely affect covered species. Because of the nature of invasive species and diseases, there is no unforeseen circumstance, only an upper limit (i.e., 15% of the endowment) to which changed circumstances will be funded. In other words, a new disease or invasive species spreading throughout the plan area within the permit term is a foreseeable event. If a disease or nonnative species spreads beyond the thresholds identified below, it will be considered an unforeseen circumstance.

The conservation strategy includes measures to reduce existing and prevent future infestations of nonnative invasive species and diseases in the plan area (GEN-10, PBO General Protection Measure 16, PBO Red-Legged Frog Measure 2, and PBO California Tiger Salamander Measure 2). The long-term management plan for the mitigation plan area includes measures to reduce existing and prevent future infestations of nonnative invasive species and diseases, including methods to be used to detect and remove invasive species as appropriate. However, it is possible the following events may occur despite implementation of the conservation strategy and monitoring program.

- New and aggressive nonnative species may invade the mitigation permit area.
- Infestations of a new disease that affects covered species may have dramatic effects in the mitigation permit area.

- Existing nonnative species or diseases may expand to unprecedented levels in the mitigation permit area, perhaps as a result of climate change or being brought in by construction equipment.

Under this HCP, the following are considered changed circumstances for which Rooney will implement remedial measures.

- Infestations of new diseases or new nonnative invasive species affecting up to 25% of the extent (i.e., acres) of a predominant land cover (see Chapter 3, *Physical and Biological Resources*) or occupied covered species habitat within the mitigation permit area in any given year.
- Spread of nonnative species or diseases up to 25% above current conditions within the mitigation permit area in any given year.

In the event of catastrophic spread of nonnative invasive species or disease, prior to ceasing or reducing remedial actions, Rooney must demonstrate the following to USFWS in writing.

- The changed circumstance was detected as soon as feasible and USFWS was notified.
- Rooney coordinated and worked actively with USFWS to assess the changed circumstance and determine the best course of action.
- Rooney implemented remedial measures for the changed circumstance according to the HCP but these measures failed to stop the spread of the disease or invasive species.
- The disease or invasive species is a serious problem outside the plan area, and similar control measures implemented by others also failed to control their spread.

#### **6.3.1.4 Wildfire**

Wildfire can reasonably be anticipated in the plan area over the duration of the permit. If fire occurs in the mitigation permit area, the land manager will implement one or more of the following measures to address the fire damage: reseeding, replanting, controlling post-fire runoff to restore covered species habitat, and planning for future strategic fire breaks. The land manager will develop a restoration strategy based on these measures using changed circumstance funding (i.e., 15% of the endowment) and will have the strategy approved by USFWS. The draft endowment estimate (Appendix D) includes up to 1 field day every 20 years to implement wildfire-related measures. The final endowment estimate, prepared once a mitigation site is selected, will determine if this level of effort and frequency is adequate and will confirm if the changed circumstance funding (15% of the endowment) is sufficient for the specific mitigation site.

#### **6.3.1.5 Drought**

Drought is an extended period when a region is deficient in its water supply, whether atmospheric, surface, or groundwater. Drought is reasonably certain to occur on mitigation lands over the course of the permit duration. If habitat conditions become degraded because of drought, the land manager will work with USFWS to identify implementable remedial measures such as augmented watering or vegetation planting prior to implementing such measures.

### **6.3.1.6 Earthquake**

Earthquakes are likely to occur in the plan area over the course of the permit. An earthquake could damage infrastructure that is important to maintain suitable habitat on mitigation lands. The mitigation land manager will use changed circumstances funding to take corrective action to address the infrastructure needs and make the habitat suitable again.

### **6.3.2 Unforeseen Circumstances**

Flooding is not expected in the project permit area. Depending on its location, the mitigation permit area could be subject to flooding. If flooding adversely affects the mitigation site, the land manager will implement the following remedial measures to help the species recover from a specific event: stock pond dam replacement, repairing and stabilizing eroding banks, redirecting high-energy runoff, and installing erosion control devices. The land manager will use changed circumstances funding to take corrective action to make the habitat suitable again, including repairing and stabilizing eroding banks and replanting vegetation.

## 7.1 Funding

The ESA requires that HCPs specify “the funding that will be available to implement” conservation actions that minimize and mitigate impacts on covered species (16 USC Section 1539[a][2][A]). The HCP Handbook (U.S. Fish and Wildlife Service and National Marine Fisheries Service 2016) outlines general cost categories and potential assurances for long-term permits for various types of applicants. The HCP Handbook notes that each type of applicant may need different types of funding assurances depending on the specific situation. Table 7 illustrates the cost categories, expected costs, and type of funding assurance proposed under the 36-year term of the HCP.

**Table 7. Estimated Implementation Costs for the Habitat Conservation Plan**

Cost Category	Units	Cost/unit	Total	Type of Funding Assurance
<b>Administration</b>				
Annual reporting	36 years	\$1,000	\$36,000	Annual project budget <sup>a</sup>
		Subtotal:	\$36,000	
<b>Implementation</b>				
Avoidance and minimization measures (including monitoring and reporting during construction)	N/A	N/A	\$200,000	Construction budget <sup>b</sup>
Construction restoration	42.9 acres	\$3,500	\$150,150	Construction budget <sup>b</sup>
		Subtotal:	\$350,150	
<b>Conservation Lands</b>				
Lands (purchase or easement) <sup>c</sup>	51.3 acres	\$7,000	\$359,100	Letter of credit, performance or surety bond
Conservation easement endowment	1	\$462,568	\$478,049	Includes annual costs, contingency costs <sup>d</sup> (additional 15%), and a 3.5% capitalization rate (Appendix E, Table 1)
		Subtotal:	\$837,149	
		Total:	\$1,223,299	

<sup>a</sup> Rooney would include funding in its annual project operations and maintenance budget to cover annual reporting requirements under the HCP.

<sup>b</sup> Rooney would include funding in its construction budget to cover implementation of avoidance and minimization measures and restoration of the project site following construction.

<sup>c</sup> Rooney would either purchase species credits from a conservation or mitigation bank or would purchase and preserve suitable mitigation lands in perpetuity. If species credits are purchased, endowment costs would not be required because they would be included in the purchase price. If suitable mitigation lands are selected, an endowment to ensure the long-term management and maintenance of the lands would be required.

Cost Category	Units	Cost/unit	Total	Type of Funding Assurance
<sup>d</sup> Funding for changed circumstances in the conservation easement endowment estimate (Appendix E) are estimated at \$16,732. As noted in Appendix E, contingency costs are estimated at \$60,296 and are therefore sufficient to address funding for changed circumstances, if needed.				

Rooney will be responsible for funding all aspects of HCP implementation. As described in Table 7, for any HCP implementation costs outstanding after construction restoration and commencement of commercial operations, funding will be guaranteed through a letter of credit, performance or surety bond, or other acceptable form of security, demonstrating the applicant's ability to provide the necessary funding associated with such outstanding costs.

## 7.2 Assurances

Rooney will provide funding assurances as outlined in Table 7. The HCP Handbook (U.S. Fish and Wildlife Service and National Marine Fisheries Service 2016) outlines the different types of funding assurances appropriate for HCPs. For this HCP, Rooney proposes to directly fund implementation of the avoidance and minimization measures during construction and to post a security (e.g., letter of credit, performance or surety bond) that is acceptable to USFWS and consistent with the HCP Handbook.

## **8.1 Endangered Species Act Requirement**

ESA Section 10(a)(2)(A)(iii) requires that an HCP describe what “alternatives to such taking” were considered and the reasons why such alternatives are not being used.

## **8.2 Reduced Take Alternatives**

Rooney considered several approaches to avoid take of covered species:

1. Installing fewer turbines: Rooney considered installing fewer turbines, however fewer turbines will not meet the project objective of a 25.1 MW financially viable project.
2. Using fewer staging areas: Rooney needs staging areas for its equipment and turbine materials; Rooney considered using fewer staging areas, however the topography in the project area and the types of turbine and equipment staging that will be necessary do not allow for a smaller amount of staging.
3. Installing fewer roads: Rooney is already incentivized to minimize road construction because it is expensive; accordingly, roads would only be constructed where necessary to deliver turbines to the appropriate locations.
4. Overall, Rooney will work to minimize disturbance areas during construction and is incentivized to do so because they must be mitigated at great cost through the purchase of compensatory mitigation, but current engineering designs have sized the staging areas and turbine footprints as appropriate for the project. All proposed activities avoid direct and indirect impacts on aquatic habitats by being sited more than 240–250 feet from them. This avoidance design has minimized take to a substantial degree. No other feasible alternatives are available to further reduce the potential for take at this project site.

## **8.3 No Take Alternative**

Rooney is unable to develop a method to install facilities without potentially affecting federally listed species. Project activities will require some ground disturbance, which could affect covered species.

## 9.1 Minor Amendments

Minor amendments to this HCP are changes that do not adversely affect the impact assessment or conservation strategy described in the HCP and do not adversely affect the applicant's ability to achieve the conservation commitments outlined in the HCP. Minor amendments do not require an amendment to the ITP but do require preapproval by USFWS before being implemented. In addition, minor amendments do not change the scope or nature of the covered activities and do not trigger a new NEPA analysis. Examples of minor amendments are listed below.

- Updates to the species occurrence or habitat suitability data that are consistent with the predictions and expectations of the HCP.
- Updates needed to finalize the LTMP (Appendix C) and Funding Cost Estimate (Appendix D) once the mitigation site is selected. Including minor revisions to these documents for adaptive management.
- Establishing new incidental take avoidance measures.
- Minor changes to the biological goals or objectives in response to adaptive management.
- Modification of monitoring protocols for HCP effectiveness.
- Changes in standardized monitoring protocols from USFWS.
- Minor changes to the reporting protocol.
- Minor revision of restoration techniques.
- Other modifications to the HCP that meet the criteria listed below.
  - Will not result in operations under the HCP that are significantly different from those analyzed in connection with the HCP as approved.
  - Will not result in impacts on the environment or take effects that are new or significantly different from those analyzed in connection with the HCP as approved.
  - Will allow for the approval or execution of agreements to facilitate execution and implementation of the HCP.
  - Will allow the permittee to delegate any of its duties specified by the HCP to a third party under its direct control.

Minor amendments to the ITP may be proposed by the applicant or USFWS. While USFWS does not have the right to amend its own permit unilaterally, it may propose minor modifications to Rooney for consideration. Minor amendments will take the form of a proposal that includes the following elements.

- Description of the proposed minor amendment.
- Rationale for the proposed minor amendment.

- Analysis of the environmental impacts of the proposed minor amendment, including impacts on covered species and implications for the conservation strategy.
- Description and declaration of how the proposed minor amendment conforms to the conditions disclosed above (i.e., how it is compatible with conservation goals) and the terms of the HCP as it was originally adopted.

All minor amendments are subject to final approval by USFWS. To modify the HCP without amending the ITP, Rooney would submit to USFWS a written description of the proposed change and an explanation of why its impacts are not believed to be significantly different from those described in the original HCP.

Upon receiving the proposal for a minor amendment, USFWS may authorize the amendment, request additional information, or deny the amendment. If USFWS concurs with the proposal, it will authorize the amendment in writing, and the amendment will be considered effective on the date of USFWS's written authorization. If USFWS feels that the proposal lacks specific information, USFWS may request additional information to support authorization or denial of the amendment. If USFWS denies the amendment, it will provide explanation for the denial.

USFWS will not approve minor amendments to the HCP if it determines that the amendments would result in adverse impacts on covered species or habitat that are significantly different from those analyzed in the HCP. If USFWS denies a proposed amendment, it may be proposed as a standard amendment as described below.

## 9.2 Major Amendments

### 9.2.1 Amendments to the HCP

An amendment is a change in the HCP that may affect the impact analysis or conservation strategy. Amendments to the HCP and the ITP follow the same formal review process as the original HCP and permit, including NEPA review, Federal Register notices, and internal Section 7 consultation with USFWS. Rooney will submit a proposed amendment to USFWS in a report that includes a description of the need for the amendment, an assessment of its impacts, and any alternatives by which the objectives of the proposal might be achieved. Specific triggers and procedures for requesting amendments to Section 10(a)(1)(B) permits are described below.

### 9.2.2 Triggers for HCP Amendments

Examples of changes that could require an amendment are listed below.

- Addition of species to the covered species list because of new species listings or the expansion of a species range. In the case of an expansion of a species range, the following steps will be used to determine whether or not an amendment would be triggered.
  - *Step 1. Review data regarding species range expansion.* If requested by USFWS, Rooney will review the periodic 5-year status reports, U.S. Geological Survey data, or other readily available data indicating species range expansion. If data show there is an overlap of the plan area (e.g., project permit area), Rooney will proceed with the next step.

- *Step 2. Conduct an impact assessment.* If it is determined from the available data that take is reasonably certain to occur or if USFWS determines that the species is at risk of take, Rooney will coordinate with USFWS on possible measures to avoid the taking. The timing of deployment of the measures will be linked with the next step. The USFWS's Biological Opinion regarding this HCP describes conditions that, should they occur for the California condor (*Gymnogyps californianus*), will prompt USFWS to consider the status to have changed, and then to reinitiate consultation and analyze potential impacts on the condor. For other listed species, USFWS will inform Rooney that USFWS considers the status and range of the species to have changed, and USFWS will reinitiate consultation to analyze potential impacts.
- *Step 3. Apply for permit amendment or a new permit.* If the impact analysis indicates that take is reasonably certain to occur or if take of a non-covered species occurs, Rooney will work with USFWS on interim measures for the species until a permit amendment or new permit is finalized. A permit amendment would be treated as an amendment under USFWS Section 10 regulations and would require additional analysis by USFWS; therefore, Rooney may choose to apply for a new permit.
- Increasing the allowable take limit of existing covered activities or adding new covered activities to the HCP.
- Extending the term of the HCP permit beyond the 36-year term.
- Modifications of any important action or component of the conservation strategy under the HCP, including funding, that may substantially affect levels of authorized take, impacts of the covered activities, or the nature or scope of the conservation strategy.
- A major change in biological goals and objectives or conservation measures if monitoring or research indicates that they are not attainable because technologies to attain them are either unavailable or infeasible.

To amend the Section 10(a)(1)(B) permit, Rooney will submit a formal application to USFWS. This application must include a revised HCP, a permit application form, and any required fees. The appropriate NEPA process and document will depend on the nature of the amendment being proposed. A new scoping process may be required, depending on the nature of the amendment. If additional scoping is deemed appropriate and necessary, USFWS will publish a Notice of Intent in the Federal Register to initiate the scoping process. Upon submission of a completed application package, USFWS will publish a notice of the proposed application in the Federal Register, initiating the NEPA and HCP amendment review process. After public comment, USFWS may approve or deny the permit amendment application.

### **9.2.3 Amendments to the Section 10(a)(1)(B) Permit**

Standard amendments to the HCP will require amendment of the Section 10(a)(1)(B) permit. Following receipt of a complete application package for a proposed amendment to a Section 10(a)(1)(B) permit, USFWS will publish a notice of the proposed amendment in the Federal Register as required by ESA initiating the NEPA and HCP amendment review process. After public comment, USFWS may approve or deny the permit amendment application. USFWS will use its reasonable efforts to process the proposed amendment within 180 calendar days of publication, except where longer periods are required by law. The amendment of a Section 10(a)(1)(B) permit will be treated as an original permit application. Such applications typically will require submittal of a revised HCP,

and a completed permit application form with appropriate fees. However, specific document requirements may vary based on the nature of the amendment.

## 9.3 Suspension and Revocation

USFWS may suspend or revoke the ITP if the Permittee fails to implement the HCP in accordance with the terms and conditions of the permit or if suspension or revocation is otherwise required by law. Suspension or revocation of the Section 10(a)(1)(B) permit, in whole or in part, by USFWS will be in accordance with 50 CFR Sections 13.27–29, 17.32(b)(8).

## 9.4 Permit Transfer

In the event of sale or transfer of the project during the life of the permit, a new permit application, permit fee, and Assumption Agreement will be submitted to USFWS by the new Permittee(s). The Permittee(s) will commit to all requirements regarding the take authorization and conservation strategy obligations of this HCP unless otherwise specified in the Assumption Agreement and agreed to in advance by USFWS.

## 9.5 Permit Renewal

Upon expiration, the permit may be renewed without the issuance of a new permit, provided that the permit is renewable, and that biological circumstances and other pertinent factors affecting the covered species are not significantly different than those described in the HCP. To renew the permit, Rooney will submit to USFWS the items listed below.

- A request to renew the permit, referencing the original permit number.
- Certification that all statements and information provided in the original HCP and permit application, together with any approved HCP amendments, are still true and correct; a list of changes must be included.
- A description of any take that has occurred under the existing permit.
- A description of any portions of the project still to be completed, if applicable, or what activities will be covered under the original permit the renewal is intended to cover.
- Rooney need to submit evidence to the USFWS that they have complied with all reporting requirements to qualify for a permit renewal

If USFWS concurs with the information provided in the request, it will renew the permit consistent with permit renewal procedures required by federal regulation (50 CFR 13.22, 50 CFR 17.22(b) and 50 CFR 17.32(b)). If Rooney files a renewal request, and the request is on file with the issuing USFWS office at least 30 days prior to the permit's expiration date, the permit will remain valid while the renewal is being processed, provided the existing permit is renewable. However, Rooney may not take listed species habitat beyond the quantity authorized by the original permit. If Rooney fails to file a renewal request within 30 days prior to permit expiration, the permit will become

invalid upon expiration. Rooney must have complied with all reporting requirements to qualify for a permit renewal. The conservation land manager may also utilize this process to continue to secure its take authorization for maintenance activities associated with the mitigation permit area.

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Appendix A  
**Grassland Restoration Plan**

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## Appendix A

# Grassland Restoration Plan

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This plan describes how grasslands will be restored on the Rooney Ranch Wind Repowering Project (project) site following Rooney Ranch, LLC's (Rooney's) construction of a wind farm, and following any grassland-disturbing maintenance activities that take place during the 37-year permit term of the Rooney Wind Repowering Project Habitat Conservation Plan (HCP) prepared in compliance with Section 10 of the federal Endangered Species Act.

Annual grasslands will be restored in locations that are cleared for the project: staging areas, power collection system installation areas, temporary road expansions, and turbine installation areas. Restoration work will be conducted within 1 year of disturbance. The existing topsoil will be stripped and stockpiled for later reapplication to disturbed surfaces. The stockpiled topsoil will contain seeds and root stock from existing annual grasslands and will provide propagation material for revegetation efforts. The annual grasslands will also be seeded with naturalized grasses and forbs. Rooney will implement a postconstruction monitoring plan to measure the establishment of the restored grassland and will implement remedial measures as needed to ensure restoration success. These restoration efforts would convert most of the project site back into habitat that would be usable for the species covered under the HCP.

## Site Preparation

### Surveying and Staking of Construction Areas

Rooney will survey and stake the locations of work areas—both temporary and permanent impact areas—prior to initiating work. These actions will be performed by a professional surveyor and will be based on the construction documents (i.e., plans and specifications) prepared for the project.

### Grassland Soil Stockpiling Areas

The location of each soil stockpile area will be staked and identified prior to start of work to ensure that the stockpiled soils are not disturbed by construction activities. Existing ruderal vegetation will be removed and disposed of offsite. The soil stockpile areas will be clearly marked to ensure that stockpiled soil is not used for other purposes.

## Restoration

Grasslands will be restored where they are temporarily disturbed by construction and maintenance activities. The objective of the revegetation activities will be to restore covered species habitat within the temporary disturbance limits. While the seed mix applied to restored areas will consist of native grassland species, the success criteria will emphasize achieving overall grassland cover rather than achieving unrealistic native species cover or composition, because the nonnative grassland community in the disturbance areas is characteristic of the nonnative grassland

community that dominates the entire project area and vicinity. This plan does not propose to convert nonnative grassland to other habitat types.

Grassland restoration will entail the actions listed below.

- Restoring the land surfaces in the disturbed areas to preproject elevations.
- Removing gravel from the grassland restoration area.
- Spreading stockpiled topsoil over restored surfaces.
- Seeding disturbed surfaces.

## Stockpiling of Grassland Topsoil

Prior to construction or ground-disturbing maintenance activity, the grading contractor will excavate and stockpile existing grassland topsoil for later reapplication. Separate topsoil stockpiling areas will be identified and clearly marked. An approximately 3-inch layer of topsoil will be excavated from all disturbed grassland surfaces. The stockpiled soil will be left uncovered to minimize damage to propagation material from heat that can build under a cover. The soil stockpile areas will be clearly marked to ensure that stockpiled soil is not used for other purposes.

## Grading of Restored Grasslands

After an area has been restored to the original grade, the grading contractor will survey, grade, and restore the annual grasslands to preproject elevations. The restored topsoil layer will be approximately 3 inches deep. The topsoil layer will not be compacted except for any wheel compaction that occurs during topsoil application. Equipment and vehicle operations should not take place on restored surfaces to avoid compaction of the topsoil. Oversight by the construction contractor and designated biologist will ensure that the soil conditions are consistent with and conducive to the revegetation program.

## Erosion Control

If deemed necessary by the contractor and in consultation with the designated biologist, erosion control best management practices (BMPs) may be installed. The seeding or hydroseeding of temporarily affected areas is a BMP for erosion control following construction completion. Erosion control maintenance during the 3-year monitoring period may include, as needed, installation of straw or coir wattles, straw or straw bales (weed free), or jute netting. If substantial erosion occurs in the restored areas, the contractor or other party designated by Rooney will be responsible for repairing erosion, unless the erosion is being caused by cattle or other livestock and would not be prevented by reestablishment of grass cover.

## Grassland Seeding

An erosion control seed mix will be used to seed all disturbed areas (Table 1). The seed mix will be tailored to closely match that of reference site(s) in the project area and will include native or naturalized, noninvasive species sourced in or within 50 miles of the project area. All seed will be obtained from a reputable California-based seed supply company (e.g., Pacific Seed Company or equivalent). The seed mix will be applied by the construction contractor. The seed mix will be

applied during the fall immediately after completion of construction to reduce the chances of erosion during the following winter.

**Table 1. Native California Erosion Control Seed Mix<sup>1</sup>**

Scientific Name	Common Name
<i>Bromus carinatus</i>	California brome
<i>Elymus glaucus</i>	Blue wild rye
<i>Festuca microstachys</i>	Three weeks fescue
<i>Trifolium willdenovii</i>	Tomcat clover

Note: The application rate for all species combined will be 45 pounds per acre. The application rate by species will be determined based on availability.

<sup>1</sup> The specified mix or a similar mix acceptable to USFWS and CDFW would be obtained based on availability.

The annual grassland seed mix will be applied as a hydromulch. The soil surface will be scarified before seeding to ensure better root penetration. On slopes greater than 3:1 (33%), the seed mix should be applied using hydroseeding methods, and a biodegradable erosion control blanket should be placed on the slope to further reduce the likelihood of erosion. The hydromulch will consist of biodegradable paper mulch, dyed to ensure full coverage, and a tackifier. The hydromulch will be applied at a rate of 2,500 pounds per acre. The tackifier will be applied at a rate of 100 pounds per acre.

Table 2 presents the recommended hydroseed slurry specifications and application rate if hydroseeding is used. No fertilizer will be applied under either method because this would stimulate growth of additional weedy species. The native grasses can grow without applications of fertilizer.

**Table 2. Hydroseed Slurry Recommendation<sup>1</sup>**

Product	Application Rate (pounds/acre)
Conwed 1000 Wood Fiber Mulch	2,500
Ecology Controls M-Binder/Tack	150
AM 120 Mycorrhizal Inoculum	60

<sup>1</sup> The specified products or similar products acceptable to USFWS and CDFW would be used.

## Invasive Species Control

A survey for invasive species will be conducted within the laydown areas prior to implementing restoration activities. The survey will document pre-project baseline conditions for the type, location, and general abundance of invasive plant species within the laydown areas. Prevention BMPs will be implemented during decommissioning to minimize the potential for the introduction or spread of invasive plants. BMPs will be determined by the contractor in coordination with the designated biologist and may include the following.

- Minimizing soil disturbance.
- Cleaning construction equipment before entering the work area at approved wash locations.

- Using certified weed-free straw and other erosion control materials.
- Revegetating with weed-free seed.

## Construction Inspections

Progress inspections and other interim inspections of the grassland restoration activities will be conducted by a biologist from Rooney or its authorized representative to ensure that the mitigation is fully and properly installed to meet performance standards. Rooney will inspect mitigation construction operations at the critical phases of implementation listed below.

- Identification of construction boundaries prior to construction.
- Placement and installation of protective fencing.
- Placement of stockpiled topsoil.
- Seeding operations.

The construction inspections will ensure that the intent and critical details of the restoration design are understood and executed by the contractor.

## Monitoring and Maintenance

Rooney will begin a 3-year (36-month) monitoring and maintenance period following completion of all initial annual grassland restoration activities. A biologist from Rooney or its designated contractor will maintain the restoration site during these 3 years.

Watering, regular weeding, and other routine maintenance will not be required for restored grasslands. Grassland restoration areas will be monitored during the maintenance period, and if remedial measures (see *Remedial Measures* below) are deemed necessary as a result of performance monitoring, Rooney will implement those measures during the maintenance period.

## Inspections

A biologist from Rooney or its designated contractor will conduct reconnaissance-level inspections of the restored grasslands in conjunction with vegetation monitoring surveys to identify necessary corrective actions. The restored areas will be inspected for erosion, vandalism, and other problems and to identify necessary repairs or remedial measures. If remediation is required because of flooding, fire, vandalism, or other damage, Rooney will confer with the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) on the appropriate level of remediation and will implement the agreed-upon actions.

## Monitoring Schedule

Vegetation will be monitored annually between March and May of years 1–3. Grassland monitoring may be discontinued before year 3 if the performance standards are met earlier than year 3. A monitoring schedule is presented in Table 3. One monitoring visit per year during the peak growing season, when most grasses are identifiable to the species level, should be sufficient to collect data on vegetation, erosion, and new invasive weed infestations.

**Table 3. Monitoring Parameters and Schedule for Restoration Area at Patterson Run**

Monitoring Activity	Year 1	Year 2	Year 3
Photo documentation	Annually in spring	Annually in spring	Annually in spring
Vegetation transects	Annually in spring	Annually in spring	Annually in spring

## Transects

At the onset of year 1 monitoring, two 2-meter-wide belt transects will be established perpendicular to the longest (30-meter) edge of the restored areas, where a 30-meter tape will be laid as the baseline. The starting point of each transect along the 30-meter baseline will be determined by using a random number table. A second tape will then be laid at the starting point perpendicular to the 30-meter tape to represent the centerline of the 2-meter-wide belt transect. The total length of each transect centerline will be limited by the extent or dimensions of the restored area at that location but is expected to be approximately 15 meters long.

At the onset of year 1 monitoring, a reference site of comparable size will be established near the restored area; the reference site will be representative of typical nonnative grassland that was not affected by covered activities. Two 2-meter-wide belt transects will be established within the reference sites using the method described above.

Transect locations will be clearly marked on a map and will be mapped with a handheld global positioning system (GPS) unit. Installation of permanent markers in the field to identify transect locations is discouraged, as such markers may attract livestock or wildlife loafing and perching, with the potential to concentrate soil disturbance and seed dispersal in the monitoring areas.

## Quantitative Observations

Absolute cover determinations will involve the collection of data along the randomly placed transects using the line-intercept method (Bonham 1989) following systematic sampling, wherein the transect is considered the sampling unit. Under this method, the observer proceeds along the line transect, identifies plant species intercepted by the tape, and records intercept distance. Absolute cover (i.e., the proportion of the ground surface covered by live plants) is calculated by adding all intercept distances and expressing the total as a proportion of tape length.

Rupture resistance (i.e., a measure of the strength of the soil to withstand stress, sometimes referred to as friability) of soils will be measured at a representative point along each of the transects and will be based on the force required to rupture (break) the soils between fingers. The guidelines for the force required to determine rupture resistance are described in the *Field Book for Describing and Sampling Soils* (Schoeneberger et al. 2012: 2-62, 2-63).

## Qualitative Observations

In addition to the quantitative data on vegetation and bare ground collected using transects, monitors also will record general observations regarding the conditions of vegetation and soil erosion in the restored areas relative to surrounding adjacent grassland. Both the quantitative and qualitative data will inform conclusions regarding performance and recommendations for maintenance, intervention, or remedial action.

## Photo Documentation

During the first year of monitoring, photo points will be established at each end of the belt transects and at a minimum of two locations capturing representative views of the restored grassland. These photo point locations will be recorded using GPS so that they can be relocated each year. Photographs will be taken at the beginning of each annual monitoring visit before transects are walked for monitoring so that trampling by monitors does not alter the appearance of vegetation cover captured by photographs.

## Performance Standards and Success Criteria

Restoration areas will be monitored in years 1–3, and large (more than 500 square feet) bare areas will be identified and reseeded. At the end of 3 years, the restoration will be considered successful if the following have been achieved

- Gravel was removed from areas needing restoration.
- Soil in restoration areas has a sufficient rupture resistance to allow for burrow establishment and infiltration of rainfall. Soils will be categorized with a rupture resistance of loose to very firm (as measured when moist), and evidence of burrowing mammals will be observed.
- Vegetation communities and percent native species plant cover is appropriate for slope, aspect, and hydrological conditions based on reference sites and pre-project condition.
- An acceptable level of invasive plant cover occurs at or below pre-project conditions measured at reference sites.

Table 4 details the performance standards and success criteria for revegetation. The restoration will be considered complete when the final success criteria have been met.

**Table 4. Performance Standards and 3-Year Success Criteria**

Parameter	Performance Standard	Final Success Criterion
Total vegetation cover	Year 1: at least 50% Year 2: at least 75%	Year 3: must be within 10% of average reference site values
Invasive <sup>a</sup> plant species cover—excluding grasses	Year 1: not greater than 15% of the total vegetation cover Year 2: not greater than 10% of the total vegetation cover	Year 3: must be less than 10% of average reference site values
Invasive <sup>a</sup> plant species richness—number of invasive plant species, excluding grasses	Years 1 and 2: not greater than the highest number of invasive plant species recorded in a given reference transect	Year 3: not greater than the highest number of invasive plant species recorded in a given reference transect
Erosion—percent cover bare ground	Year 1: no more than 50% Year 2: no more than 25%	Year 3: must be within 10% of average reference site values
Rupture resistance <sup>b</sup> —suitable for burrow establishment and rainfall infiltration	Years 1 and 2: Soils are loose to very firm as measured when moist <sup>c</sup>	Year 3: must be within the performance standard or evidence of burrowing animals must be observed

<sup>a</sup> Invasive plant species are plant species rated high or included as a red alert species by the California Invasive Plant Council (<http://www.cal-ipc.org/>), or high-priority species listed by the Bay Area Early Detection Network (<http://www.baedn.org/>).

<sup>b</sup> Rupture resistance is described in Schoeneberger et al. 2012, pages 2-62 and 2-63, and is defined as “A measure of the strength of soil to withstand an applied stress.”

<sup>c</sup> Native soils on the project site are described as Altamont Clay soil map units and have a rupture resistance described as very firm (Natural Resources Conservation Service 2009).

## Supplemental Seeding

All disturbed grasslands will be seeded after construction. These seeded areas will be maintained during the 3-year maintenance period. It is anticipated that seeded areas will become vegetated by seeded species and colonized by other herbaceous species that occur in adjacent areas. Maintenance of seeded areas will include reseeding large bare areas. If vegetation cover in the restored area is not meeting performance standards, supplemental seeding may be implemented. If the seed mix or application rate is deemed inappropriate or insufficient to meet the performance standards, a restoration ecologist will be consulted to develop an alternative seed mix or application rate.

If performance criteria are not achieved by the end of the third year, Rooney will consult with USFWS and CDFW to determine whether the restoration effort is acceptable. If at any time during implementation and establishment of the restoration area(s) and prior to verification of meeting success criteria, a catastrophic natural event (such as fire, flood, or landslide) or other force of nature results in changes to the landscape or character of the restoration site, Rooney will coordinate with USFWS and CDFW on any changes that may need to be incorporated into the restoration strategy.

## Annual Reports

Rooney will prepare an annual monitoring report and submit it to USFWS and CDFW by December 31 of each monitoring year. Each monitoring report will include the components listed below.

- A summary of the project location and description.
- A summary of the monitoring methods.
- A list of the names, titles, and companies of the people who prepared the content of the annual report or participated in monitoring activities that year.
- A summary and analysis of the monitoring results, including an evaluation of site conditions in the context of the performance standards and success criteria.
- A discussion of the monitoring results.
- Management recommendations, including discussion of areas with inadequate performance and recommendations for remedial action.
- A discussion of modifications made to the monitoring methods.
- A discussion of the previous year's maintenance efforts.

The first annual monitoring report will include details of the seed mix and hydroseed slurry, such as commercial source of materials, species composition, application rate, and dates of application. This information, along with any significant problems encountered or necessary changes made in the field, will be recorded and included in the report. The first annual report will include photographs of the restored areas taken within 48 hours of hydroseed application (and before the first rainfall event).

USFWS and CDFW will be advised, in conjunction with the annual performance monitoring report, when the revegetated laydown areas appear to meet the final success criteria. Rooney's obligations will be deemed complete when USFWS and CDFW communicate in writing that the Temporary Impact Restoration measure identified in the permits has been fulfilled.

The goal of the restoration plan is to reestablish grassland habitat requiring minimal to no follow-up or maintenance. The as-needed maintenance program will begin when construction and hydroseeding have been completed. Rooney will be responsible for retaining a contractor qualified to perform maintenance activities described herein.

## Remedial Measures

The purpose of this restoration plan is to ensure that the targeted physical and ecological functions are achieved. Remedial measures provide a mechanism for ensuring that the restoration effort is successful if the restoration effort is characterized by either of the following.

- Continually does not achieve the performance standards during years 1–3.
- Does not achieve the success criteria in year 3.

Remedial measures will be developed in consideration of the qualitative and quantitative monitoring results. To develop remedial measures, Rooney will evaluate why a specific performance

standard or success criterion was not achieved and will determine the most effective remedy. Remedial measures could include additional seeding and invasive species management actions.

## Notification of Completion

Rooney will notify USFWS and CDFW when the success criteria have been met. A map of the restoration site and the annual monitoring report will be furnished with the notification to provide documentation to USFWS that the restoration requirements have been completed.

## USFWS Confirmation of Completion

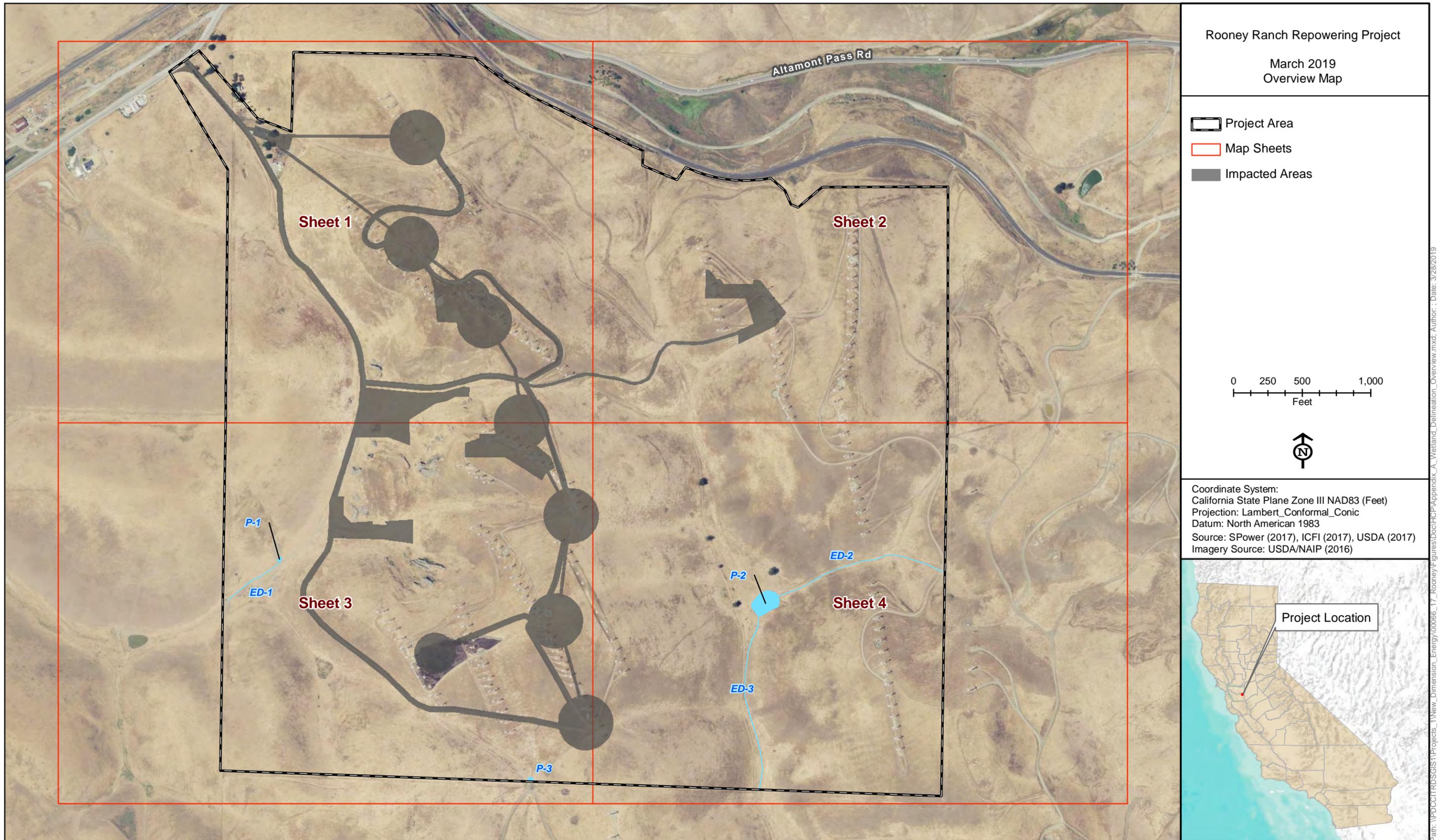
Based on the notification of completion, the annual monitoring reports, and if deemed necessary by USFWS and CDFW during a site visit, USFWS and CDFW will confirm that the restoration plan has met the success criteria and will provide Rooney with written confirmation that its obligations have been achieved.

## References

- Bonham, C. D. 1989. *Measurements for Terrestrial Vegetation*. New York, NY: John Wiley & Sons.
- Natural Resources Conservation Service. 2009. *Altamont Series, California. Web Soil Survey*. Available: <http://websoilsurvey.nrcs.usda.gov/>
- Schoeneberger, P. J., D. A. Wysocki, E. C. Benham, and Soil Survey Staff. 2012. *Field Book for Describing and Sampling Soils, Version 3.0*. Lincoln, NE: Natural Resources Conservation Service, National Soil Survey Center,

Appendix B  
**Detailed Impact Maps**

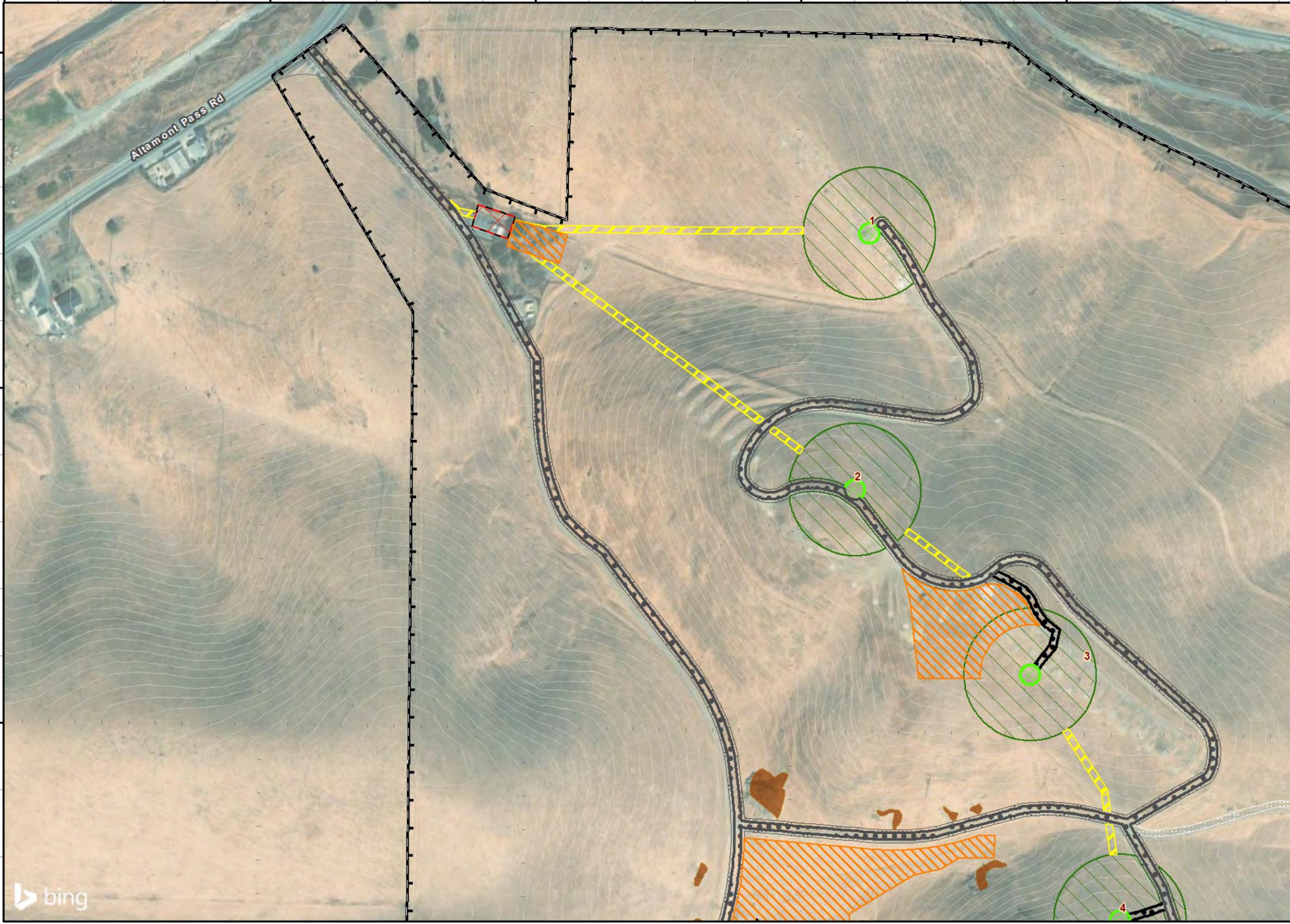
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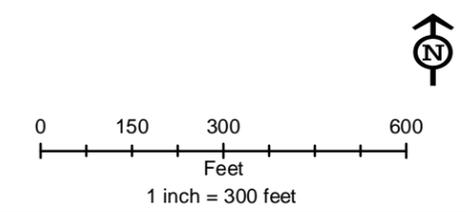
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37°44'40"N  
37°44'30"N  
37°44'20"N



Rooney Ranch Repowering  
Project Impacts  
March 2019  
Sheet 1

- Legend**
- Delineation Area (582 Acres)
  - Flow Direction
  - Rock Outcrop
  - Non-wetland Waters - 0.80 acres**
    - Pond (P) - 0.63 acres
    - Ephemeral Drainage (ED) - 0.17 acres
  - Proposed Project Components**
  - Permanent Impacts**
    - Met Tower Location
    - Existing Road - Permanent
    - Turbine Location
    - Proposed Road - Permanent
    - Entrance Road Improvements
    - Santa Clara Substation
  - Temporary Impacts**
    - Turbine Work Area
    - Road Work Area
    - Temporary Access Road
    - Laydown Area
    - Met Tower Work Area
    - Collector



**Notes:**  
 Coordinate System:  
 California State Plane Zone III NAD83 (Feet)  
 Projection: Lambert\_Conformal\_Conic  
 Datum: North American 1983  
 Contour Interval = 10ft.  
 Source: ICFI 2017  
 Imagery Source: Microsoft Bing 2013

Project Contact: Sustainable Power Group  
 Delineated By: Kate Carpenter  
 Delineation Date: March 3rd and 14th, 2017  
 Drawn By: Daniel Schiff



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37°44'40"N

37°44'30"N

37°44'20"N

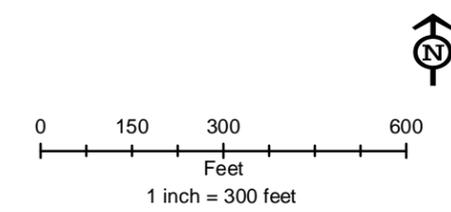
Altamont Pass Rd



Rooney Ranch Repowering  
Project Impacts  
March 2019  
Sheet 2

**Legend**

- Delineation Area (582 Acres)
- Flow Direction
- Rock Outcrop
- Non-wetland Waters - 0.80 acres**
  - Pond (P) - 0.63 acres
  - Ephemeral Drainage (ED) - 0.17 acres
- Proposed Project Components**
- Permanent Impacts**
  - Met Tower Location
  - Existing Road - Permanent
  - Turbine Location
  - Proposed Road - Permanent
  - Entrance Road Improvements
  - Santa Clara Substation
- Temporary Impacts**
  - Turbine Work Area
  - Road Work Area
  - Temporary Access Road
  - Laydown Area
  - Met Tower Work Area
  - Collector



**Notes:**  
 Coordinate System:  
 California State Plane Zone III NAD83 (Feet)  
 Projection: Lambert\_Conformal\_Conic  
 Datum: North American 1983  
 Contour Interval = 10ft.  
 Source: ICFI 2017  
 Imagery Source: Microsoft Bing 2013

Project Contact: Sustainable Power Group  
 Delineated By: Kate Carpenter  
 Delineation Date: March 3rd and 14th, 2017  
 Drawn By: Daniel Schiff



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121°39'30"W

121°39'20"W

121°39'10"W

37°44'10"N

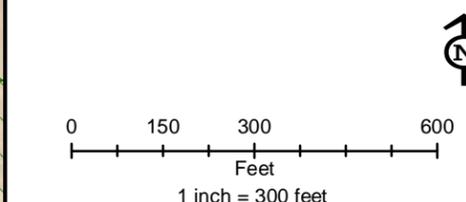
37°44'0"N

37°43'50"N

Rooney Ranch Repowering  
Project Impacts  
March 2019  
Sheet 3

**Legend**

-  Delineation Area (582 Acres)
-  Flow Direction
-  Rock Outcrop
- Non-wetland Waters - 0.80 acres**
-  Pond (P) - 0.63 acres
-  Ephemeral Drainage (ED) - 0.17 acres
- Proposed Project Components**
- Permanent Impacts**
-  Met Tower Location
-  Existing Road - Permanent
-  Turbine Location
-  Proposed Road - Permanent
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-  Turbine Work Area
-  Road Work Area
-  Temporary Access Road
-  Laydown Area
-  Met Tower Work Area
-  Collector



**Notes:**  
 Coordinate System:  
 California State Plane Zone III NAD83 (Feet)  
 Projection: Lambert\_Conformal\_Conic  
 Datum: North American 1983  
 Contour Interval = 10ft.  
 Source: ICFI 2017  
 Imagery Source: Microsoft Bing 2013

Project Contact: Sustainable Power Group  
 Delineated By: Kate Carpenter  
 Delineation Date: March 3rd and 14th, 2017  
 Drawn By: Daniel Schiff



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37°44'10"N

37°44'0"N

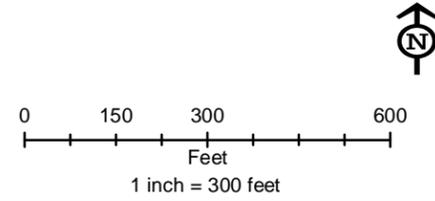
37°43'50"N



Rooney Ranch Repowering  
Project Impacts  
March 2019  
Sheet 4

**Legend**

- Delineation Area (582 Acres)
- Flow Direction
- Rock Outcrop
- Non-wetland Waters - 0.80 acres**
- Pond (P) - 0.63 acres
- Ephemeral Drainage (ED) - 0.17 acres
- Proposed Project Components**
- Permanent Impacts**
- Met Tower Location
- Existing Road - Permanent
- Turbine Location
- Proposed Road - Permanent
- Entrance Road Improvements
- Santa Clara Substation
- Temporary Impacts**
- Turbine Work Area
- Road Work Area
- Temporary Access Road
- Laydown Area
- Met Tower Work Area
- Collector



**Notes:**  
Coordinate System:  
California State Plane Zone III NAD83 (Feet)  
Projection: Lambert\_Conformal\_Conic  
Datum: North American 1983  
Contour Interval = 10ft.  
Source: ICFI 2017  
Imagery Source: Microsoft Bing 2013

Project Contact: Sustainable Power Group  
Delineated By: Kate Carpenter  
Delineation Date: March 3rd and 14th, 2017  
Drawn By: Daniel Schiff



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Appendix C

## **Conservation Easement Template**

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**PLEASE NOTE:**

**The following Conservation Easement Deed template for the Rooney Ranch Wind Repowering Project, is provided by the Sacramento United States Fish and Wildlife Office. Any modifications to this template shall be identified using tracked changes or other editable electronic comparison.**

**RECORDING REQUESTED BY AND  
WHEN RECORDED MAIL TO:**

[Fill in Grantee Name/Address]

Grantee Name

Grantee Address

City, State ZIP

Attn: \_\_\_\_\_

---

Space Above Line for Recorder's Use Only

**CONSERVATION EASEMENT DEED**

[Insert Conservation Site Name]

THIS CONSERVATION EASEMENT DEED ("Conservation Easement") is made as of the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by [insert full legal name(s) of Grantor: \_\_\_\_\_] ("Grantor"), in favor of [insert Grantee's full legal name: \_\_\_\_\_] ("Grantee"), with reference to the following facts:

**RECITALS**

A. Grantor is the sole owner in fee simple of certain real property containing approximately \_\_\_\_\_ acres, located in the City of [insert City name], County of [insert County name], State of California, and designated Assessor's Parcel Number(s) [insert Assessor's Parcel Number(s)] (the "Conservation Site Property"). The Conservation Site Property is legally described and depicted in **Exhibit A** attached to this Conservation Easement and incorporated in it by this reference.

B. The Conservation Site Property possesses wildlife and habitat values of great importance to Grantee, the people of the State of California and the people of the United States. The Conservation Site Property will provide high quality natural, restored and/or enhanced habitat for California tiger salamander, California red-legged frog, and San Joaquin kit fox (hereafter "covered species") and contain annual grassland habitat and aquatic habitat for the covered species. Individually and collectively, these wildlife and habitat values comprise the "Conservation Values" of the Conservation Site Property.

C. The United States Fish and Wildlife Service (the "USFWS"), an agency within the United States Department of the Interior, has jurisdiction over the conservation, protection,

restoration and management of fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of these species within the United States pursuant to the federal Endangered Species Act (ESA), 16 U.S.C. Section 1531, *et seq.*, the Fish and Wildlife Coordination Act, 16 U.S.C. Sections 661-666c, the Fish and Wildlife Act of 1956, 16 U.S.C. Section 742(f), *et seq.*, and other provisions of federal law.

D. The California Department of Fish and Wildlife ("CDFW") has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants and the habitat necessary for biologically sustainable populations of these species pursuant to California Fish and Game Code Section 1802. CDFW is authorized to hold conservation easements for these purposes pursuant to California Civil Code Section 815.3, Fish and Game Code Section 1348, and other provisions of California law.

E. [*Use this version of Recital E when qualified nonprofit organization is Grantee*]. Grantee is authorized to hold this conservation easement pursuant to California Civil Code Section 815.3 and Government Code Section 65967. Specifically, Grantee is (i) a tax-exempt nonprofit organization qualified under section 501(c) (3) of the Internal Revenue Code of 1986, as amended, and qualified to do business in California; (ii) a "qualified organization" as defined in section 170(h) (3) of the Internal Revenue Code; and (iii) an organization which has as its primary and principal purpose and activity the protection and preservation of natural lands or resources in its natural, scenic, agricultural, forested, or open space condition or use.

[*Use this version of Recital E when governmental entity is Grantee*]. Grantee is authorized to hold this conservation easement pursuant to California Civil Code Section 815.3. Specifically, Grantee is a governmental entity identified in Civil Code Section 815.3 (b) and otherwise authorized to acquire and hold title to real property.

F. This Conservation Easement is being established by Grantor and Grantee knowingly and voluntarily as a means to implement certain agreed upon conservation measures as described in the Habitat Conservation Plan, USFWS File No. 2014-TA-0377, issued by the **USFWS Sacramento Field Office** and the Incidental Take Permit, issued by the CDFW under Section 2081 of the California Fish and Game Code. These conservation measures were proposed by **Rooney Wind, LLC** as a means of minimizing the effect(s) of the Rooney Wind Repowering Project on the covered species, federally listed as **threatened** under the federal and/or State ESA's. To fully implement these conservation measures, a Long-term Management Plan has been developed, and is incorporated by this reference into this Conservation Easement as if fully set forth herein.

A final, approved copy of the Long-term Management Plan, and any amendments thereto approved by the USFWS and CDFW, shall be kept on file at the Sacramento Field Office of the USFWS and the Bay Delta Region 3 Office of the CDFW. If Grantor, or any successor or assign, requires an official copy of the Management Plan, it should request a copy from the USFWS or CDFW at its address for notices listed in Section 12 of this Conservation Easement.

G. All section numbers referred to in this Conservation Easement are references to sections within this Conservation Easement, unless otherwise indicated.

## COVENANTS, TERMS, CONDITIONS AND RESTRICTIONS

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and pursuant to the laws of the United States and the State of California, including California Civil Code Section 815, *et seq.*, Grantor hereby voluntarily grants and conveys to Grantee a conservation easement in perpetuity over the Conservation Site Property.

1. Purposes.

The purposes of this Conservation Easement are to ensure that the Conservation Site Property will be retained forever in its natural, restored, or enhanced condition as contemplated by the Long-term Management Plan, and to prevent any use of the Conservation Site Property that will impair or interfere with the Conservation Values of the Conservation Site Property. Grantor intends that this Conservation Easement will confine the use of the Conservation Site Property to activities that are consistent with such purposes, including, without limitation, those involving the preservation, restoration and enhancement of native species and their habitats implemented in accordance with the Development Plan and the Management Plan.

2. Grantee's Rights.

To accomplish the purposes of this Conservation Easement, Grantor hereby grants and conveys the following rights to Grantee:

(a) To preserve and protect the Conservation Values of the Conservation Site Property.

(b) To enter the Conservation Site Property at reasonable times, in order to monitor compliance with and otherwise enforce the terms of this Conservation Easement, the Development Plan, and the Management Plan and to implement at Grantee's sole discretion Development Plan and Management Plan activities that have not been implemented, provided that Grantee shall not unreasonably interfere with Grantor's authorized use and quiet enjoyment of the Conservation Site Property.

(c) To prevent any activity on or use of the Conservation Site Property that is inconsistent with the purposes of this Conservation Easement and to require the restoration of such areas or features of the Conservation Site Property that may be damaged by any act, failure to act, or any use or activity that is inconsistent with the purposes of this Conservation Easement.

(d) To require that all mineral, air and water rights as Grantee deems necessary to preserve and protect the biological resources and Conservation Values of the Conservation Site Property shall remain a part of and be put to beneficial use upon the Conservation Site Property, consistent with the purposes of this Conservation Easement.

(e) All present and future development rights appurtenant to, allocated, implied, reserved or inherent in the Conservation Site Property; such rights are hereby terminated and extinguished, and may not be used on or transferred to any portion of the Conservation Site Property, nor any other property adjacent or otherwise.

3. Prohibited Uses.

Any activity on or use of the Conservation Site Property that is inconsistent with

the purposes of this Conservation Easement is prohibited. Without limiting the generality of the foregoing, the following uses and activities by Grantor, Grantor's agents, and third parties are expressly prohibited:

(a) Unseasonable watering; use of fertilizers, pesticides, biocides, herbicides or other agricultural chemicals; weed abatement activities; incompatible fire protection activities; and any and all other activities and uses which may impair or interfere with the purposes of this Conservation Easement [*include the following language only if the Development Plan or Management Plan, including any adaptive management measures, specifies such an exception:*], except for [*insert specific exception(s)*] as specifically provided in the [*specify:* Development Plan *or* Management Plan].

(b) Use of off-road vehicles and use of any other motorized vehicles except on existing roadways [*include the following language only if the Development Plan or Management Plan, including any adaptive management measures, specifies such an exception:*], except for [*insert specific exception(s)*] as specifically provided in the [*specify:* Development Plan *or* Management Plan].

(c) Agricultural activity of any kind [*include the following language only if the Development Plan or Management Plan, including any adaptive management measures, specifies such an exception:*] except grazing for vegetation management as specifically provided in the [*specify:* Development Plan *or* Management Plan].

(d) Recreational activities, including, but not limited to, horseback riding, biking, hunting or fishing except for personal, non-commercial, recreational activities of the Grantor, so long as such activities are consistent with the purposes of this Conservation Easement and specifically provided for in the Management Plan.

(e) Commercial, industrial, residential, or institutional uses.

(f) Any legal or de facto division, subdivision or partitioning of the Conservation Site Property.

(g) Construction, reconstruction, erecting or placement of any building, billboard or sign, or any other structure or improvement of any kind [*include the following language only if the Development Plan or Management Plan specifies such an exception:*], except for [*insert specific exception(s)*] as specifically provided in the [*specify:* Development Plan *or* Management Plan].

(h) Depositing or accumulation of soil, trash, ashes, refuse, waste, bio-solids or any other materials.

(i) Planting, introduction or dispersal of non-native or exotic plant or animal species.

(j) Filling, dumping, excavating, draining, dredging, mining, drilling, removing or exploring for or extracting minerals, loam, soil, sand, gravel, rock or other material on or below the surface of the Conservation Site Property, or granting or authorizing surface

entry for any of these purposes.

(k) Altering the surface or general topography of the Conservation Site Property, including but not limited to any alterations to habitat, building roads or trails, paving or otherwise covering the Conservation Site Property with concrete, asphalt or any other impervious material except for those habitat management activities specified in the Development Plan or Management Plan.

(l) Removing, destroying, or cutting of trees, shrubs or other vegetation, except as required by law for (i) fire breaks, (ii) maintenance of existing foot trails or roads, or (iii) prevention or treatment of disease [*include the following language only if the Development Plan or Management Plan specifies such an exception.*]; and except for [*insert specific exception(s)*] as specifically provided in the [*specify: Development Plan or Management Plan*].

(m) Manipulating, impounding or altering any natural water course, body of water or water circulation on the Conservation Site Property, and any activities or uses detrimental to water quality, including but not limited to degradation or pollution of any surface or sub-surface waters [*include the following language only if the Development Plan or Management Plan specifies such an exception.*], except for [*insert specific exception(s)*] as specifically provided in the [*specify: Development Plan or Management Plan*].

(n) Without the prior written consent of Grantee, which Grantee may withhold, transferring, encumbering, selling, leasing, or otherwise separating the mineral, air or water rights for the Conservation Site Property; changing the place or purpose of use of the water rights; abandoning or allowing the abandonment of, by action or inaction, any water or water rights, ditch or ditch rights, spring rights, reservoir or storage rights, wells, ground water rights, or other rights in and to the use of water historically used on or otherwise appurtenant to the Conservation Site Property, including but not limited to: (i) riparian water rights; (ii) appropriative water rights; (iii) rights to waters which are secured under contract with any irrigation or water district, to the extent such waters are customarily applied to the Conservation Site Property; and (iv) any water from wells that are in existence or may be constructed in the future on the Conservation Site Property.

(o) Engaging in any use or activity that may violate, or may fail to comply with, relevant federal, state, or local laws, regulations, or policies applicable to Grantor, the Conservation Site Property, or the use or activity in question.

(p) [*Insert additional prohibitions as appropriate for the particular Bank Property and its Conservation Values.*]

#### 4. Grantee's Duties.

(a) To ensure that the purposes of this Conservation Easement as described in Section 1 are being accomplished, Grantee and its successors and assigns shall:

(1) Perform, at a minimum on a twice annual basis, compliance monitoring inspections of the Conservation Site Property; and

(2) Prepare reports on the results of the compliance monitoring inspections, and provide these reports to the USFWS on an annual basis.

(b) In the event the Grantee's interest in this Conservation Easement reverts to or is transferred to the State of California, CDFW will carry out the tasks specified in Section 4 (a) to the extent that funds and staff are available for that purpose. If CDFW determines that it cannot carry out the specified tasks, the Third Party Beneficiaries may identify a replacement Grantee, acceptable to all, and CDFW, subject to obtaining all necessary approvals, will transfer this Conservation Easement to the identified replacement Grantee in compliance with Section 20(a) of this Conservation Easement.

5. Grantor's Duties.

Grantor shall undertake all reasonable actions to prevent the unlawful entry and trespass by persons whose activities may degrade or harm the Conservation Values of the Conservation Site Property or that are otherwise inconsistent with this Conservation Easement. In addition, Grantor shall undertake all necessary actions to perfect and defend Grantee's rights under Section 2 of this Conservation Easement, and to observe and carry out the obligations of Grantor under the Development Plan and the Management Plan.

6. Reserved Rights.

Grantor reserves to itself, and to its personal representatives, heirs, successors, and assigns, all rights accruing from Grantor's ownership of the Conservation Site Property, including the right to engage in or permit or invite others to engage in all uses of the Conservation Site Property that are not prohibited or limited by, and are consistent with the purposes of, this Conservation Easement.

7. Grantee's Remedies.

If Grantee determines that a violation of this Conservation Easement has occurred or is threatened, Grantee shall give written notice to Grantor of such violation and demand in writing the cure of such violation ("Notice of Violation"). If Grantor fails to cure the violation within thirty (30) days after receipt of a Notice of Violation, or if the cure reasonably requires more than thirty (30) days to complete and Grantor fails to begin the cure within the thirty (30)-day period or fails to continue diligently to complete the cure, Grantee may bring an action at law or in equity in a court of competent jurisdiction for any or all of the following: to recover any damages to which Grantee may be entitled for violation of the terms of this Conservation Easement or for any injury to the Conservation Values of the Conservation Site Property; to enjoin the violation, *ex parte* as necessary, by temporary or permanent injunction without the necessity of proving either actual damages or the inadequacy of otherwise available legal remedies; to pursue any other legal or equitable relief, including but not limited to, the restoration of the Conservation Site Property to the condition in which it existed prior to any violation or injury; or to otherwise enforce this Conservation Easement. Without limiting the liability of Grantor, Grantee may apply any damages recovered to the cost of undertaking any corrective action on the Conservation Site Property.

If Grantee, in its sole discretion, determines that circumstances require immediate action to prevent or mitigate injury to the Conservation Values of the Conservation Site Property,

Grantee may pursue its remedies under this Conservation Easement without prior notice to Grantor or without waiting for the period provided for cure to expire. Grantee's rights under this section apply equally to actual or threatened violations of this Conservation Easement.

Grantor agrees that Grantee's remedies at law for any violation of this Conservation Easement are inadequate and that Grantee shall be entitled to the injunctive relief described in this section, both prohibitive and mandatory, in addition to such other relief to which Grantee may be entitled, including specific performance of this Conservation Easement, without the necessity of proving either actual damages or the inadequacy of otherwise available legal remedies. Grantee's remedies described in this section shall be cumulative and shall be in addition to all remedies now or hereafter existing at law or in equity, including but not limited to the remedies set forth in California Civil Code Section 815, *et seq.* The failure of Grantee to discover a violation or to take immediate legal action shall not bar Grantee from taking such action at a later time.

(a) Costs of Enforcement.

All costs incurred by Grantee, where Grantee is the prevailing party, in enforcing the terms of this Conservation Easement against Grantor, including, but not limited to, costs of suit and attorneys' and experts' fees, and any costs of restoration necessitated by negligence or breach of this Conservation Easement, shall be borne by Grantor.

(b) Grantee's Discretion.

Enforcement of the terms of this Conservation Easement by Grantee shall be at the discretion of Grantee, and any forbearance by Grantee to exercise its rights under this Conservation Easement in the event of any breach of any term of this Conservation Easement shall not be deemed or construed to be a waiver of such term or of any subsequent breach of the same or any other term of this Conservation Easement or of any rights of Grantee under this Conservation Easement. No delay or omission by Grantee in the exercise of any right or remedy shall impair such right or remedy or be construed as a waiver.

(c) Acts Beyond Grantor's Control.

Nothing contained in this Conservation Easement shall be construed to entitle Grantee to bring any action against Grantor for any injury to or change in the Conservation Site Property resulting from (i) any natural cause beyond Grantor's control, including, without limitation, fire not caused by Grantor, flood, storm, and earth movement, or any prudent action taken by Grantor under emergency conditions to prevent, abate, or mitigate significant injury to the Conservation Site Property resulting from such causes; or (ii) acts by Grantee or its employees.

(d) Enforcement; Standing.

All rights and remedies conveyed to Grantee under this Conservation Easement shall extend to and are enforceable by the Third-Party Beneficiaries (as defined in Section 14(m)). These enforcement rights are in addition to, and do not limit, the rights of enforcement under the Development Plan or the Management Plan. If at any time in the future Grantor uses, allows the use, or threatens to use or allow use of, the Conservation Site Property for any purpose that is inconsistent with or in violation of this Conservation Easement then, despite the provisions of California Civil Code Section 815.7, the California Attorney General

and the Third-Party Beneficiaries each has standing as an interested party in any proceeding affecting this Conservation Easement.

(e) Notice of Conflict.

If Grantor receives a Notice of Violation from Grantee or a Third-Party Beneficiary with which it is impossible for Grantor to comply consistent with any prior uncured Notice(s) of Violation, Grantor shall give written notice of the conflict (hereinafter "Notice of Conflict") to the Grantee and Third-Party Beneficiaries. In order to be valid, a Notice of Conflict shall be given within fifteen (15) days of the date Grantor receives a conflicting Notice of Violation, shall include copies of the conflicting Notices of Violation, and shall describe the conflict with specificity, including how the conflict makes compliance with the uncured Notice(s) of Violation impossible. Upon issuing a valid Notice of Conflict, Grantor shall not be required to comply with the conflicting Notices of Violation until such time as the entity or entities issuing said conflicting Notices of Violation issue(s) revised Notice(s) of Violation that resolve the conflict. Upon receipt of a revised Notice of Violation, Grantor shall comply with such notice within the time period(s) described in the first grammatical paragraph of this Section. The failure of Grantor to issue a valid Notice of Conflict within fifteen (15) days of receipt of a conflicting Notice of Violation shall constitute a waiver of Grantor's ability to claim a conflict.

(f) Reversion.

If the Signatory Agencies determine that Grantee is not holding, monitoring or managing this Conservation Easement for conservation purposes in the manner specified in this Conservation Easement or in the Development Plan or the Management Plan then, pursuant to California Government Code Section 65965(d), this Conservation Easement shall revert to the State of California, or to another public agency or nonprofit organization qualified pursuant to Civil Code Section 815.3 and Government Code Section 65967 (and any successor or other provision(s) then applicable) and approved by the USFWS.

8. Access.

This Conservation Easement does not convey a general right of access to the public.

9. Costs and Liabilities.

Grantor retains all responsibilities and shall bear all costs and liabilities of any kind related to the ownership, operation, upkeep, and maintenance of the Conservation Site Property. Grantor agrees that neither Grantee nor any Third-Party Beneficiaries shall have any duty or responsibility for the operation, upkeep or maintenance of the Conservation Site Property, the monitoring of hazardous conditions on it, or the protection of Grantor, the public or any third parties from risks relating to conditions on the Conservation Site Property. Grantor remains solely responsible for obtaining any applicable governmental permits and approvals required for any activity or use permitted by this Conservation Easement [*insert if CDFW or another government entity is Grantee:* , including those permits and approvals required from Grantee acting in its regulatory capacity], and any activity or use shall be undertaken in accordance with all applicable federal, state, local and administrative agency laws, statutes, ordinances, rules, regulations, orders and requirements.

(a) Taxes; No Liens.

Grantor shall pay before delinquency all taxes, assessments (general and special), fees, and charges of whatever description levied on or assessed against the Conservation Site Property by competent authority (collectively "Taxes"), including any Taxes imposed upon, or incurred as a result of, this Conservation Easement, and shall furnish Grantee with satisfactory evidence of payment upon request. Grantor shall keep the Conservation Site Property free from any liens (other than a security interest that is expressly subordinated to this Conservation Easement, as provided in Section 14(k)), including those arising out of any obligations incurred by Grantor for any labor or materials furnished or alleged to have been furnished to or for Grantor at or for use on the Conservation Site Property.

(b) Hold Harmless.

Grantor shall hold harmless, protect and indemnify Grantee and its directors, officers, employees, agents, contractors, and representatives and the heirs, personal representatives, successors and assigns of each of them (each a "Grantee Indemnified Party" and collectively, "Grantee's Indemnified Parties") from and against any and all liabilities, penalties, costs, losses, damages, expenses (including, without limitation reasonable attorneys' fees and experts' fees), causes of action, claims, demands, orders, liens or judgments (each a "Claim" and, collectively, "Claims"), arising from or in any way connected with: (i) injury to or the death of any person, or physical damage to any property, resulting from any act, omission, condition, or other matter related to or occurring on or about the Conservation Site Property, regardless of cause, except that this indemnification shall be inapplicable to any Claim due solely to the negligence of Grantee or any of its employees; (ii) the obligations specified in Sections 5, 9 and 9(a); and (iii) the existence or administration of this Conservation Easement. If any action or proceeding is brought against any of the Grantee's Indemnified Parties by reason of any such Claim, Grantor shall, at the election of and upon written notice from Grantee, defend such action or proceeding by counsel reasonably acceptable to the Grantee's Indemnified Party. [*insert if CDFW is grantee*: or reimburse Grantee for all charges incurred for services of the California Attorney General in defending the action or proceeding].

(1) Grantor shall hold harmless, protect and indemnify Third-Party Beneficiaries and their respective directors, officers, employees, agents, contractors, and representatives and the heirs, personal representatives, successors and assigns of each of them (each a "Third-Party Beneficiary Indemnified Party" and collectively, "Third-Party Beneficiary Indemnified Parties") from and against any and all Claims arising from or in any way connected with: (i) injury to or the death of any person, or physical damage to any property, resulting from any act, omission, condition, or other matter related to or occurring on or about the Conservation Site Property, regardless of cause and (ii) the existence or administration of this Conservation Easement. *Provided, however*, that the indemnification in this Section 9 (b) (2) shall be inapplicable to a Third-Party Beneficiary Indemnified Party with respect to any Claim due solely to the negligence of that Third-Party Beneficiary Indemnified Party or any of its employees. If any action or proceeding is brought against any of the Third-Party Beneficiary Indemnified Parties by reason of any Claim to which the indemnification in this Section 9 (b) (2) applies, then at the election of and upon written notice from the Third-Party Beneficiary Indemnified Party, Grantor shall defend such action or proceeding by counsel reasonably acceptable to the applicable Third-Party Beneficiary Indemnified Party or reimburse the Third-Party Beneficiary Indemnified Party for all charges incurred for services of the California Attorney General or the U.S. Department of Justice in defending the action or proceeding.

(c) Extinguishment.

If circumstances arise in the future that render the preservation of Conservation Values, or other purposes of this Conservation Easement impossible to accomplish, this Conservation Easement can only be terminated or extinguished, in whole or in part, by judicial proceedings in a court of competent jurisdiction.

(d) Condemnation.

The purposes of this Conservation Easement are presumed to be the best and most necessary public use as defined at California Code of Civil Procedure Section 1240.680 notwithstanding Code of Civil Procedure Sections 1240.690 and 1240.700.

10. Transfer of Conservation Easement or Conservation Site Property.

(a) Conservation Easement.

This Conservation Easement may be assigned or transferred by Grantee upon written approval of the USFWS, which approval shall not be unreasonably withheld or delayed, but Grantee shall give Grantor and the USFWS at least sixty (60) days prior written notice of the proposed assignment or transfer. Grantee may assign or transfer its rights under this Conservation Easement only to an entity or organization: (i) authorized to acquire and hold conservation easements pursuant to California Civil Code Section 815.3 and Government Code Section 65965 (and any successor or other provision(s) then applicable), or the laws of the United States; and (ii) otherwise reasonably acceptable to the USFWS. Grantee shall require the assignee to record the assignment in the county where the Conservation Site Property is located. The failure of Grantee to perform any act provided in this section shall not impair the validity of this Conservation Easement or limit its enforcement in any way. Any transfer under this section is subject to the requirements of Section 11.

(b) Conservation Site Property.

Grantor agrees to incorporate the terms of this Conservation Easement by reference in any deed or other legal instrument by which Grantor divests itself of any interest in all or any portion of the Conservation Site Property, including, without limitation, a leasehold interest. Grantor agrees that the deed or other legal instrument shall also incorporate by reference the Development Plan, the Management Plan, and any amendment(s) to those documents. Grantor further agrees to give written notice to Grantee and the USFWS of the intent to transfer any interest at least sixty (60) days prior to the date of such transfer. Grantee or the USFWS shall have the right to prevent any transfers in which prospective subsequent claimants or transferees are not given notice of the terms, covenants, conditions and restrictions of this Conservation Easement (including the exhibits and documents incorporated by reference in it). The failure of Grantor to perform any act provided in this section shall not impair the validity of this Conservation Easement or limit its enforceability in any way. Any transfer under this section is subject to the requirements of Section 11.

11. Merger.

The doctrine of merger shall not operate to extinguish this Conservation Easement if the Conservation Easement and the Conservation Site Property become vested in the same party. If, despite this intent, the doctrine of merger applies to extinguish the Conservation



purposes of this Conservation Easement and California law governing conservation easements, and shall not affect its perpetual duration. Any such amendment shall be recorded in the official records of the county in which the Conservation Site Property is located, and Grantee shall promptly provide a conformed copy of the recorded amendment to the Grantor and the USFWS.

14. Additional Provisions.

(a) Controlling Law.

The interpretation and performance of this Conservation Easement shall be governed by the laws of the United States and the State of California, disregarding the conflicts of law principles of such state.

(b) Liberal Construction.

Despite any general rule of construction to the contrary, this Conservation Easement shall be liberally construed to effect the purposes of this Conservation Easement and the policy and purpose of California Civil Code Section 815, *et seq.* [***add if Grantee is nonprofit organization:*** and Government Code Section 65965]. If any provision in this instrument is found to be ambiguous, an interpretation consistent with the purposes of this Conservation Easement that would render the provision valid shall be favored over any interpretation that would render it invalid.

(c) Severability.

If a court of competent jurisdiction voids or invalidates on its face any provision of this Conservation Easement, such action shall not affect the remainder of this Conservation Easement. If a court of competent jurisdiction voids or invalidates the application of any provision of this Conservation Easement to a person or circumstance, such action shall not affect the application of the provision to any other persons or circumstances.

(d) Entire Agreement.

This document (including its exhibits and the Development Plan and the Management Plan incorporated by reference in this document) sets forth the entire agreement of the parties and the USFWS with respect to the Conservation Easement and supersedes all prior discussions, negotiations, understandings, or agreements of the parties relating to the Conservation Easement. No alteration or variation of this Conservation Easement shall be valid or binding unless contained in an amendment in accordance with Section 13.

(e) No Forfeiture.

Nothing contained in this Conservation Easement will result in a forfeiture or reversion of Grantor's title in any respect.

(f) Successors.

The covenants, terms, conditions, and restrictions of this Conservation Easement shall be binding upon, and inure to the benefit of, the parties and their respective personal representatives, heirs, successors, and assigns, and shall constitute a servitude running in perpetuity with the Conservation Site Property.

(g) Termination of Rights and Obligations.

A party's rights and obligations under this Conservation Easement terminate upon transfer of the party's interest in the Conservation Easement or Conservation Site Property, except that liability for acts, omissions or breaches occurring prior to transfer shall survive transfer.

(h) Captions.

The captions in this instrument have been inserted solely for convenience of reference and are not a part of this instrument and shall have no effect upon its construction or interpretation.

(i) No Hazardous Materials Liability.

(1) Grantor represents and warrants that it has no knowledge or notice of any Hazardous Materials (defined below) or underground storage tanks existing, generated, treated, stored, used, released, disposed of, deposited or abandoned in, on, under, or from the Conservation Site Property, or transported to or from or affecting the Conservation Site Property.

(2) Without limiting the obligations of Grantor under Section 9 (b), Grantor hereby releases and agrees to indemnify, protect and hold harmless the Grantee's Indemnified Parties (defined in Section 9 (b) (1)) from and against any and all Claims (defined in Section 9 (b)(1)) arising from or connected with any Hazardous Materials or underground storage tanks present, alleged to be present, released in, from or about, or otherwise associated with the Conservation Site Property at any time, except any Hazardous Materials placed, disposed or released by Grantee or any of its employees. This release and indemnification includes, without limitation, Claims for (A) injury to or death of any person or physical damage to any property; and (B) the violation or alleged violation of, or other failure to comply with, any Environmental Laws (defined below). If any action or proceeding is brought against any of the Grantee's Indemnified Parties by reason of any such Claim, Grantor shall, at the election of and upon written notice from the applicable Grantee Indemnified Party, defend such action or proceeding by counsel reasonably acceptable to the Grantee Indemnified Party

(3) Without limiting the obligations of Grantor under Section 9 (b), Grantor hereby releases and agrees to indemnify, protect and hold harmless the Third-Party Beneficiary Indemnified Parties (defined in Section 9 (b)(2)) from and against any and all Claims arising from or connected with any Hazardous Materials or underground storage tanks present, alleged to be present, released in, from or about, or otherwise associated with the Conservation Site Property at any time, except that this release and indemnification shall be inapplicable to a Third-Party Beneficiary Indemnified Party with respect to any Hazardous Materials placed, disposed or released by that Third-Party Beneficiary Indemnified Party or any of its employees. This release and indemnification includes, without limitation, Claims for (A) injury to or death of any person or physical damage to any property; and (B) the violation of alleged violation of, or other failure to comply with, any Environmental Laws. If any action or proceeding is brought against any of the Third-Party Beneficiary Indemnified Parties by reason of any such Claim, Grantor shall, at the election or and upon written notice from the applicable Third-Party Beneficiary Indemnified Party, defend such action or proceeding by counsel reasonably acceptable to the Third-Party Beneficiary Indemnified Party for all charges incurred for services of the California Attorney General or the U.S. Department of Justice in defending the action or

proceeding.

(4) Despite any contrary provision of this Conservation Easement, the parties do not intend this Conservation Easement to be, and this Conservation Easement shall not be, construed such that it creates in or gives to Grantee or any Third-Party Beneficiaries any of the following:

(A) The obligations or liability of an "owner" or "operator," as those terms are defined and used in Environmental Laws (defined below), including, without limitation, the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42 U.S.C. § 9601, *et seq.*; hereinafter, "CERCLA"); or

(B) The obligations or liabilities of a person described in 42 U.S.C. § 9607(a)(3) or (4); or

(C) The obligations of a responsible person under any applicable Environmental Laws; or

(D) The right to investigate and remediate any Hazardous Materials associated with the Conservation Site Property; or

(E) Any control over Grantor's ability to investigate, remove, remediate or otherwise clean up any Hazardous Materials associated with the Conservation Site Property.

(5) The term "Hazardous Materials" includes, without limitation, (a) material that is flammable, explosive or radioactive; (b) petroleum products, including by-products and fractions thereof; and (c) hazardous materials, hazardous wastes, hazardous or toxic substances, or related materials defined in CERCLA, the Resource Conservation and Recovery Act of 1976 (42 U.S.C. § 6901, *et seq.*; hereinafter, "RCRA"); the Hazardous Materials Transportation Act (49 U.S.C. §5101, *et seq.*; hereinafter, "HTA"); the Hazardous Waste Control Law (California Health & Safety Code § 25100, *et seq.*; hereinafter, "HCL"); the Carpenter-Presley-Tanner Hazardous Substance Account Act (California Health & Safety Code § 25300, *et seq.*; hereinafter "HSA"), and in the regulations adopted and publications promulgated pursuant to them, or any other applicable Environmental Laws now in effect or enacted after the date of this Conservation Easement.

(6) The term "Environmental Laws" includes, without limitation, CERCLA, RCRA, HTA, HCL, HSA, and any other federal, state, local or administrative agency statute, ordinance, rule, regulation, order or requirement relating to pollution, protection of human health or safety, the environment or Hazardous Materials. Grantor represents, warrants and covenants to Grantee and Third-Party Beneficiaries that, activities upon and use of the Bank Property by Grantor, its agents, employees, invitees and contractors will comply with all Environmental Laws.

(j) Warranty.

Grantor represents and warrants that Grantor is the sole owner of the Conservation Site Property. Grantor also represents and warrants that, except as specifically

disclosed to and approved by the USFWS pursuant to the Conservation Site Property Assessment and Warranty signed by Grantor, and attached as an exhibit to the [*insert: BEI or CBEI*], [*choose applicable statement: there are no outstanding mortgages, liens, encumbrances or other interests in the Conservation Site Property (including, without limitation, mineral interests) which may conflict or are inconsistent with this Conservation Easement or the holder of any outstanding mortgage, lien, encumbrance or other interest in the Conservation Site Property (including, without limitation, mineral interest) that may conflict or are otherwise inconsistent with this Conservation Easement has expressly subordinated such interest to this Conservation Easement by a recorded Subordination Agreement approved by Grantee and the USFWS*].

(k) Additional Interests.

Grantor shall not grant any additional easements, rights of way or other interests in the Conservation Site Property (other than a security interest that is expressly subordinated to this Conservation Easement), nor shall Grantor grant, transfer, abandon or relinquish (each a “Transfer”) any mineral, air, or water right or any water associated with the Conservation Site Property, without first obtaining the written consent of Grantee and the USFWS. Such consent may be withheld if Grantee or the USFWS determines that the proposed interest or Transfer is inconsistent with the purposes of this Conservation Easement or will impair or interfere with the Conservation Values of the Conservation Site Property. This Section 14(k) shall not limit the provisions of Section 2(d) or 3(n), nor prohibit transfer of a fee or leasehold interest in the Conservation Site Property that is subject to this Conservation Easement and complies with Section 10. Grantor shall provide a copy of any recorded or unrecorded grant or Transfer document to the Grantee and USFWS.

(l) Recording.

Grantee shall record this Conservation Easement in the Official Records of the County in which the Conservation Site Property is located, and may re-record it at any time as Grantee deems necessary to preserve its rights in this Conservation Easement.

(m) Third-Party Beneficiary.

Grantor and Grantee acknowledge that the USFWS is a third party beneficiary of this Conservation Easement with the right of access to the Conservation Site Property and the right to enforce all of the obligations of Grantor including, but not limited to, Grantor’s obligations under Section 14, and all other rights and remedies of the Grantee under this Conservation Easement.

(n) Funding.

Endowment funding for the perpetual management, maintenance, and monitoring of the Conservation Site Property is specified in and governed by the Management Plan.

15. Exhibits.

The following Exhibits referenced in this Conservation Easement are attached to and incorporated by reference herein:

Exhibit A – Legal Description and Map of Property

IN WITNESS WHEREOF Grantor has executed this Conservation Easement Deed the day and year first above written.

**GRANTOR:** [*Notarization Required*]

BY: \_\_\_\_\_

NAME: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

Approved as to form:

**GRANTEE:**

**USFWS:**

BY: \_\_\_\_\_

BY: \_\_\_\_\_

NAME: \_\_\_\_\_

NAME: \_\_\_\_\_

TITLE: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

DATE: \_\_\_\_\_

**CDFW:**

BY: \_\_\_\_\_

NAME: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

Appendix D

## **Long-Term Management Plan**

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**Note: The California multi-agency Project Delivery Team developed this general outline to assist in the development of the Long-term Management Plan for mitigation banks. This specific template is for the Rooney Ranch Wind Repowering Project mitigation site. The mitigation site has not yet been selected. Rooney Ranch, LLC will complete this long-term management plan for the mitigation site when it has been selected. The final LTMP and funding cost analysis estimate (Appendix D) will be approved by USFWS prior to finalization and can be modified without a permit amendment to the HCP. Finalization of these documents would be considered minor amendments to the HCP.**

**Long-term Management Plan  
For  
The Rooney Ranch Wind Repowering Project Mitigation Site**

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## **Long-Term Management Plan**

### **I. Introduction**

#### **A. Purpose of Establishment**

The Rooney Ranch Wind Repowering Project Mitigation Site “Mitigation Site” was established to compensate for unavoidable impacts to, and to conserve and to protect waters of the U.S., covered species and covered habitat. The Mitigation Site includes \_\_\_\_\_acres of waters of the U.S. including \_\_\_\_\_acres [*insert as applicable:* of /all of which are] preserved wetlands, \_\_\_\_\_acres of created wetlands, \_\_\_\_\_acres of covered species habitat for California tiger salamander, California red-legged frog, and San Joaquin kit fox. The Signatory Agencies are the Sacramento Office of the U.S. Fish and Wildlife Service, and the California Department of Fish and Wildlife (“CDFW”) Bay Delta Region.

#### **B. Purpose of this Long-term Management Plan**

The purpose of this long-term management plan is to ensure the Mitigation Site is managed, monitored, and maintained in perpetuity. This management plan establishes objectives, priorities and tasks to monitor, manage, maintain and report on the waters of the U.S., covered species and covered habitat on the Mitigation Site, consistent with the goals and objectives of the Sand Hill Wind Repowering Project Habitat Conservation Plan and the Incidental Take Permit issued by CDFW under Section 2081 of the California Fish and Game Code. This management plan is a binding and enforceable instrument, implemented by the conservation easement covering the Mitigation Site.

#### **C. Land Manager and Responsibilities**

The land manager is \_\_\_\_\_. The land manager, and subsequent land managers upon transfer, shall implement this long-term management plan, managing and monitoring the Mitigation Site in perpetuity to preserve its habitat and conservation values in accordance with the conservation easement, and the long-term management plan. Long-term management tasks shall be funded through the Endowment Fund. The land manager shall be responsible for providing an annual report to the Signatory Agencies detailing the time period covered, an itemized account of the management tasks and total amount expended. Any subsequent grading, or alteration of the site’s hydrology and/or topography by the land manager or its representatives must be approved by the Signatory Agencies and the necessary permits, such as a Section 404 permit, must be obtained if required.

## **II. Property Description**

### **A. Setting and Location**

The Mitigation Site is located at \_\_\_\_\_ [*include address and county*], State of California, designated Assessor's Parcel No. \_\_\_\_\_. The Property is shown on the general vicinity map (Figure 1) and the Mitigation Site property map (Figure 2). The general vicinity map shows the Mitigation Site location in relation to cities, towns, or major roads, and other distinguishable landmarks. The Mitigation Site property map shows the property boundaries on a topographic map.

### **B. History and Land Use**

[*Describe past and present land use including grazing practices*].  
The land in the general area of the Mitigation Site is currently \_\_\_\_\_ [*Describe adjacent land and local area land uses.*]

### **C. Cultural Resources – (if applicable, refers to Cultural Resources Survey,)**

[*Describe all existing structures including roads, levees, fencing, and buildings, and their intended future use on the area. If such structures are likely to be considered "historical resources" of the state pursuant to Executive Order W-26-92 and historic resources preservation laws.*]

[*Describe any known archeological sites without providing their specific locations on the property and include a summary of the results of any site surveys/inventories, including who conducted them. An assessment of the impacts of management should be given for such sites.*]

### **D. Hydrology and Topography**

[*Describe hydrology and topography of Mitigation Site. Indicate whether wetlands are driven by surface flows (i.e., fluvial systems) or groundwater flows from offsite sources. Describe precipitation onto and off of the site.*]

### **E. Soils**

[*Describe soils on the Mitigation Site.*]

### **F. Existing Easements**

[*Include descriptions/locations of existing easements, their nature (buried pipeline, overhead power, ingress/egress, etc.), authorized users (if known), access procedures, etc. Depict easements, rights of way, ingress, and egress routes on an attached map.*]

## **G. Adjacent Land Uses**

*[Detail the baseline adjacent land uses. These land uses may change over time; however, the description of the baseline conditions will give the manager some idea of the conditions present when the management plan was first developed. Also detailing adjacent land uses will bring to light areas that may be of management concern or items that may compromise biological integrity over time.]*

## **III. Habitat and Species Descriptions**

### **A. Biological Resources Survey of the Mitigation Site**

*[The Biological Resources Survey of the Mitigation Site shall include a general description of geographic location and features, topography, soils, vegetation (assessment of native vs. exotic species), species present and potentially present, habitat requirements of each species and a quality assessment of all habitat types (i.e. life history requirements of covered species met, habitat diversity, connectivity to other habitats and protected areas), and species presence based on the results of protocol surveys. In addition, provide an inventory list, if available, of plant and animal species which are known or likely to occur on the property. An overview of native plant species present, if applicable, their habitat and management requirement should be presented here.]*

### **B. Endangered and Threatened Species**

*[Describe all endangered and threatened species that occur or may occur on the Mitigation Site. If applicable, provide map showing their location.]*

The Mitigation Site is occupied by California red-legged frog and California tiger salamander and is suitable dispersal habitat for San Joaquin kit fox.

### **C. Rare Species and Species of Special Concern**

*[Description of rare species and species of special concern that occur or may occur on the Mitigation Site. If applicable, provide map showing their location.]*

## **IV. Management and Monitoring**

The overall goal of long-term management is to foster the long-term viability of the Mitigation Site's waters of the U.S., covered species and covered habitat. Routine monitoring and minor maintenance tasks are intended to assure the viability of the Mitigation Site in perpetuity.

## **A. Biological Resources**

The approach to the long-term management of the Mitigation Site's biological resources is to conduct annual site examinations and monitoring of selected characteristics to determine stability and ongoing trends of the preserved and created waters of the U.S., including wetlands, aquatic and upland habitats for California tiger salamander and California red-legged frog, and dispersal habitat for San Joaquin kit fox. Annual monitoring will assess the Mitigation Site condition, degree of erosion, invasion of exotic or deleterious (e.g., thatch producing) species, water quality, fire hazard, and/or other aspects that may warrant management actions. While it is not anticipated that major management actions will be needed, objectives of this long-term management plan are to conduct monitoring to identify any issues that arise and to use adaptive management to determine what actions might be appropriate. Individuals chosen to accomplish monitoring responsibilities will have the knowledge, training, and experience to accomplish monitoring responsibilities.

The monitoring and management efforts summarized in Table 1 are intended to determine whether the management efforts are achieving the desired conditions. These monitoring efforts will include an annual grazing assessment (i.e., seasonality of grazing, casual observations related to grazing) and a summary of any anomalous site conditions (i.e., problems with any infrastructure or features). In addition, the Land Manager will conduct focused surveys every 5 years (or at a different frequency if determined through USFWS coordination to be appropriate), to determine the status of California red-legged frogs and Central California tiger salamanders on the Mitigation Site. Analysis of occurrence of special-status species, in conjunction with livestock use records, will allow the Land Manager to ensure that the goals of long-term management are met in perpetuity.

The Land Manager will implement all management activities within an adaptive management framework that allows the Land Manager to modify management as necessary based on changes such as climate change, fire, flooding, or other natural events whose occurrence and effects cannot be predicted, or as needed to improve the effectiveness of management. The Land Manager will determine how the land is managed, and will coordinate with the Reviewing Agencies before making any adaptive management changes to the LTMP. All management activities described below are subject to the notification requirements described in Section V, and the Land Manager will summarize these activities in all annual reports to the Reviewing Agencies and City as described in Section IV.D

**Table 1. Frequency and Timing of Long-term Habitat Monitoring, Management, Maintenance, and Reporting Tasks**

Task	Object of Inspection or Survey	Criteria to Trigger Task or to Consider Successful	Frequency			Timing <sup>3</sup>												
			Once <sup>1</sup>	Annually	Periodic <sup>2</sup>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Task 1. Annual walk-through survey to qualitatively monitor the general condition of waters of the U.S. and wetlands		Conducted annually		X					X	X								
Task 2: Establish reference sites for photographs and prepare a site map showing the reference sites for the Mitigation Site file.					X				X	X	X	X						
Task 3: Install Staff Gauges and Conduct a Baseline Inspection of each pond to determine its suitability and use as a breeding habitat for California red-legged frog and California tiger salamander			X		X	X	X	X	X	X	X	X	X					
Task 4: Inspect Pond Hydroperiod, Surface Extent of Ponding, Vegetation, Pond Berms/Dams, and Accumulation of Sediment and Repair as Needed to determine its suitability and use as a breeding habitat for California red-legged frog and California tiger salamander	Water depth, integrity of the berm/dam, extent of sedimentation and vegetation	Successful – when ponds meet the success criteria and the berm/dam has no leaks, cracks, erosion, or head cut that threaten to degrade ecological conditions for the Central California tiger salamander or California red-legged frog		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Task 5. Remove Accumulated Sediment and Vegetation from Ponds		Trigger – when it is observed that the ponding capacity in a pond has reduced to 50% below the baseline ponding conditions, has greater vegetation than defined in the LTMP, does not meet slope conditions, or			X								X	X	X			

Task	Object of Inspection or Survey	Criteria to Trigger Task or to Consider Successful	Frequency			Timing <sup>3</sup>												
			Once <sup>1</sup>	Annually	Periodic <sup>2</sup>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
		has dried before May 31 (or August 31 for California red-legged frog breeding pond) in a year of average rainfall																
Task 6: Perform Baseline Upland Habitat Surveys	RDM at each established key grassland monitoring plot and ground squirrel burrow mapping	Visually estimate biomass at monitoring plots, and any areas of excessive bare ground, erosion, invasive plant infestations.	X						X	X			X					
Task 7: Establish and Perform Spring Biomass Estimates and Fall RDM Measurements	RDM at each established key grassland monitoring plot in the fall prior to the first significant rain events of the season	Successful – when the RDM is between 500 – 1,500 lbs/ac depending on slope and grazing plan targets. Trigger – when RDM measurement are not within planned targets or when excessive bare ground, plant material, erosion, invasive species, or pest plant infestations are observed that threaten to degrade ecological conditions for the California tiger salamander or California red-legged frog. Trigger: significant decrease in active ground squirrel burrows and colony presence		X					X					X				
Task 8. Conduct Baseline Surveys for California Red-legged Frog Presence, Relative Abundance, and Reproductive Success (first three years)	Presence of California red-legged frog tadpoles, metamorphs, subadults, and/or adults in designated California red-legged frog breeding ponds	Successful - metamorphs observed in or around pond Additional criteria TBD during final LTMP	X						X	X	X							
Task 9. Conduct Surveys for California Red-legged Frog Presence, relative	Presence of California red-legged frog tadpoles,	Successful - metamorphs observed in or around pond			X				X	X	X		X	X				

Task	Object of Inspection or Survey	Criteria to Trigger Task or to Consider Successful	Frequency			Timing <sup>3</sup>												
			Once <sup>1</sup>	Annually	Periodic <sup>2</sup>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
abundance, and reproductive success	metamorphs, subadults, and/or adults in designated California red-legged frog breeding ponds	Additional criteria TBD during final LTMP Trigger - significant decrease from baseline of relative abundance of larvae, metamorphs, and adults																
Task 10. Conduct Baseline Surveys for California tiger salamander Breeding and Abundance (first three years)	Presence of California tiger salamander larvae in all mitigation site ponds	Successful - relatively large larvae observed in pond that holds water through May. Additional criteria TBD during final LTMP.	X						X	X								
Task 11. Conduct Surveys for California tiger salamander breeding	Presence of California tiger salamander larvae in all mitigation site ponds	Successful - relatively large larvae observed in pond that holds water through May. Additional criteria TBD during final LTMP Trigger- significant decrease from baseline of relative abundance of large larvae			X				X	X								
Task 12. Conduct Baseline Surveys for San Joaquin kit fox Evidence of Use (first three years)	Presence of San Joaquin kit fox use or suitable habitat	Successful – Evidence of use observed or if no evidence of use observed, then no significant barriers (e.g., new structures or features on the landscape (adjacent properties), which could preclude the movement of San Joaquin kit fox, such as new roadways, new fencing, or other structures that are not permeable to animals) to use observed.	X						X	X								
Task 13. Assess San Joaquin kit fox Dispersal Habitat	Presence of San Joaquin kit fox use or suitable habitat	Successful- No significant barriers to use observed			X				X	X								
Task 14: Conduct Surveys for Invasive Plant Species	Extent and abundance of weeds, effectiveness of prior treatments			X				X	X		X	X						





<sup>1</sup> Some baseline survey tasks would be conducted one time early in the management period and would not be repeated annually or periodically.

<sup>2</sup> The frequency of occurrence of activities described as “periodic” will vary by the activity, from ongoing (e.g., monitoring of public access) to infrequent/as needed (e.g., repair of failing berms or dams). More detail is provided in the description of each element below.

<sup>3</sup> “Timing” refers to the approximate month(s) in which each task is most likely to be performed, rather than necessarily restricting tasks to the month(s) indicated. Tasks are not necessarily performed within each of the months indicated (e.g., they may be performed only once, or multiple times, within the months indicated). More detail is provided in the description of each element below.

The land manager for the Mitigation Site shall implement the following monitoring and management activities:

### **Element A.1 Waters of the U.S., including wetlands**

*Objective A.1-1: Monitor the Mitigation Site's waters of the U.S., including wetlands.*

#### **Task 1: Annual walk-through survey to qualitatively monitor waters of the U.S., wetlands, and general site conditions.**

One annual walk-through survey will be conducted each management year. General topographic conditions, pond hydrology and habitat suitability (see Task 4), general vegetation cover and composition, invasive species (see Task 16), and erosion, will be noted, evaluated, and mapped during a site examination in the spring. Notes to be made will include observations of species encountered, water quality, general extent of wetlands, and any occurrences of erosion and weed invasion. In addition, monitoring of reference photos (see Task 2), monitoring of trash and vandalism (see Task 18), inspections of fences, gates and roads (see Task 21), and inspections of livestock improvements (see Task 22) will occur during the annual walk-through.

#### **Task 2: Establish reference sites for photographs, prepare a site map showing the reference sites for the Mitigation Site file, and take reference photographs.**

Photographic reference sites, which represent the range of wetland types and conditions present on the Mitigation Site, will be established. Reference photographs will be taken of representative wetland types every five years during the annual walkthrough (see Task 1) from the beginning of the management period. The number and location of photographic reference sites will be determined in the final LTMP and will be based on the presence and extent of on-site waters of the U.S. and wetlands.

### **Element A.2 Covered Species Habitat**

*Objective A.2-1: Monitor and manage the Mitigation Site's ponds with respect to habitat for California red-legged frogs and California tiger salamanders.*

**Task 3: Install Staff Gauges and Conduct a Baseline Inspection of each pond to determine its suitability and use as a breeding habitat for California red-legged frog and California tiger salamander**

The Land Manager will install a staff gauge in the deepest part of each pond (if not already present) for use in monitoring pond depth during baseline surveys and subsequent inspections. To determine the baseline habitat conditions of each pond in providing aquatic breeding habitat for California red-legged frogs and California tiger salamander, the Land Manager will inspect each pond concurrent with other tasks such as Task 1, Task 7, Task 8, Task 10, Task 12, and Task 19 during monthly visits within the ponding period (typically January through August) for the first three years of management. The inspection will consist of measuring water depth, surface extent of ponding, describing the amount and type of vegetation, documenting the condition of the berm/dam for each pond. Additionally, the Land Manager will document the depth of water and surface extent of ponding in each pond once per month from the time the pond first holds water, until the pond dries.

**Task 4: Inspect Pond Hydroperiod, Surface Extent of Ponding, Vegetation, Pond Berms/Dams, and Accumulation of Sediment and Repair as Needed to determine its suitability and use as a breeding habitat for California red-legged frog and California tiger salamander**

Concurrent with activities associated with Task 1, ponds will be visually monitored once a year for continued functioning as habitat for California red-legged frogs and California tiger salamander. Permanent photo-documentation points will be established during the first such pond inspection and monitoring photos taken once each year from these points. The Land Manager will inspect and document functionality of the dam, berm, and spillway as well as any negative impacts from grazing management (erosion, pond side slopes, etc.). It will be determined if the ponds are functioning properly and whether there is any need for repairs (See Task 1- Annual Walk-Through Survey).

Every five years, concurrent with Task 1, Task 7, Task 9, Task 11, Task 13, and Task 19 the Land Manager will monitor monthly (typically January to August) at the aquatic features: percent absolute vegetation cover, slope ratio, and document the water depth in each pond by reading the staff gauge

and recording water depth. Erosion and sediment deposition will also be assessed to determine whether remedial action is required to ensure the pond has appropriate hydrology to support successful breeding and metamorphosis by California tiger salamander and California red-legged frog. Additionally, during the monitoring year, during the period coinciding with aquatic breeding of the covered species, the Land Manager will document the depth of water and surface extent of ponding in each pond. Success criteria and management thresholds for these measurements will be determined in the final LTMP.

Target criteria to be measured and monitored for ponds to be determined suitable for successful breeding by California tiger salamanders and California red-legged frogs will be detailed in the final Service-approved LTMP. Criteria will include the following measurements: inundation duration of aquatic feature, minimum depth at the deepest part for the majority of the breeding season, minimum depth at the deepest part between December 1 and February 29, slope ratios of the sides of the aquatic feature, absolute emergent vegetation cover within aquatic feature. If aquatic habitat criteria are not met, but abundances of California tiger salamanders and California red-legged frogs are maintained at suitable levels for the Service and reproductive success is observed, then aquatic habitat success criteria can be amended with Service approval. Success criteria and management thresholds for these measurements will be determined in the final LTMP and will be based on average rainfall years.

The Land Manager will also inspect the integrity of the berm/dam of, and extent of sedimentation in each pond and determine if they are functioning properly and whether there is any need for repairs.

#### **Task 5. Remove Accumulated Sediment and Vegetation from Ponds**

If monitoring results indicate that a pond has lost 50% or more of its baseline ponding capacity and/or does not retain the required amount of water for California tiger salamander and California red-legged frog as determined by the suitable habitat criteria listed above in a year of average rainfall, and this reduction is due to an accumulation of sediment or vegetation, the Land Manager will remove the sediment and/or vegetation. The removal will occur in the fall when ponds have dried and California tiger salamander have metamorphosed out of the ponds. An approved

biologist will monitor the sediment/vegetation removal activity.

*Objective A.2-2: Monitor and manage the Mitigation Site's upland habitat at its baseline level to maintain habitat for the Covered Species.*

#### **Task 6: Perform Baseline Upland Habitat Surveys**

During the first year of the management period, the Land Manager will determine baseline upland habitat condition at the Mitigation Site that are suitable for all Covered Species. The Land Manager will conduct visual biomass surveys in upland habitats by designated monitoring plots that represent the range of conditions at the Mitigation Site. The Land Manager will estimate biomass at the monitoring plots in the spring and will conduct residual dry matter (RDM) measurements in the fall. The locations of which will be stratified according to slope and aspect prior to the first significant rain. Further clarification of methods for monitoring grazing on the mitigation site will be included in the final Service-approved LTMP. The methods for these measurement collection will be described in the final LTMP.

In addition, concentrations of California ground squirrel burrows and burrow complexes will be mapped using aerial photography and on-the-ground visual observation; the presence and abundance of ground squirrels burrows/complexes will be used as a success criteria to determine suitability of upland habitat for California tiger salamander. Success criteria and management thresholds for these measurements will be determined in the final LTMP. Burrow surveys will be updated during the periodic 5-year species' surveys (Task 9 or 11).

It will be assumed that the presence and abundance of California red-legged frog and Central California tiger salamander in these uplands is being maintained if the upland habitat success criteria described here are met.

#### **Task 7: Perform Spring Biomass Estimates and Fall RDM Measurements**

Every year, the Land Manager will estimate the amount of standing biomass in upland areas. The estimates will be performed in the spring (March or April) at each of the monitoring plots established under Task 6 above. The purpose of the biomass estimates will be to provide a prediction regarding

when RDM levels will be reached so that the Land Manager can add or remove grazing as necessary to achieve target RDM levels in fall. If the Land Manager observed localized overgrazing or undergrazing, or conditions which could degrade ecological conditions for the California tiger salamander, California red-legged frog, or San Joaquin kit fox, the Land Manager will identify remedial measures. Following monitoring each year, the Land Manager will adjust management (i.e., grazing) activities to attempt to achieve adequate terrestrial habitat for CRLF and CTS movement and use. Management levels will be documented in the annual report.

The specific success criteria metrics will be detailed in the final Service-approved LTMP, but will generally target grass or stubble height during the spring and fall that is less than six (6) inches tall during the monitoring event. The initial Target range for RDM, will be between 500-1,500 lbs/ac, depending on slope (Ford et al 2013, Bartolome et al 2006). Success criteria and management thresholds for these measurements will be determined in the final LTMP. If the initial RDM monitoring results show that more optimal habitat characteristics are created for the California tiger salamanders and California red-legged frog by implementing different RDM target values then the final LTMP success criteria and management thresholds will be adjusted accordingly as determined by the Land Manager and in consultation with the Service and amended in the LTMP.

In addition to the methods described above, land management staff with range management will continue to qualitatively assess the vegetation condition on mitigation lands at least annually to help guide vegetation management. Qualitative vegetation monitoring will be conducted periodically during the year. The grazing intensity may be modified on an annual basis, based on monitoring results and management recommendations. Use of controlled burning as a management tool will not be used on the mitigation site.

Invasive plant species surveys (see Task 14) will occur annually concurrent with activities associated with this task.

### **Element A.3 Threatened/Endangered Animal Species Monitoring**

*[Note: Refinement and finalization of Species-specific objectives and tasks will need to be developed in consultation with the appropriate Signatory Agencies once the Mitigation Site is*

*selected]*

***Objective A.3-1: Monitor California red-legged frog presence, relative abundance, and reproductive success at suitable aquatic features on the mitigation site.***

**Task 8. Conduct a Baseline Survey for California Red-legged Frog Presence, Relative Abundance, and Reproductive Success**

Conduct baseline surveys for California red-legged frog during the first three years. Survey protocols for California red-legged frog presence, relative abundance of all life stages, and reproductive success will be approved by the USFWS and incorporated here at the approval of the final LTMP.

**Task 9. Conduct Surveys for California Red-legged Frog Presence, relative abundance, and reproductive success**

Every five years, the Land Manager will conduct surveys for California red-legged frog tadpoles, subadults, and adults in Mitigation Site ponds. If it is determined that a different frequency is more appropriate, then the frequency of visits can be adjusted with Service approval. Survey protocols for California red-legged frog presence, relative abundance, and reproductive success will be approved by the USFWS and incorporated here at the approval of the final LTMP. More specific success criteria and management thresholds for these measurements will be determined in the final LTMP.

***Objective A.3-2: Monitor California tiger salamander presence, relative abundance, and reproductive success at suitable aquatic features on the mitigation site.***

**Task 10. Conduct a Baseline Survey for California tiger salamander Breeding and Abundance**

Conduct baseline trend surveys for California tiger salamander during the first three years. Survey protocols for California tiger salamander presence, relative abundance of all life stages, and reproductive success will be approved by the USFWS and incorporated here at the approval of the final LTMP.

**Task 11. Conduct Surveys for California tiger salamander breeding**

Every five years, the Land Manager will conduct larval surveys for California tiger salamanders in Mitigation Site ponds. If it is determined that a different frequency is more appropriate, then the frequency of visits can be adjusted with Service approval. Survey protocols for California tiger salamanders presence, relative abundance of all life stages, and reproductive success will be approved by the USFWS and incorporated here at the approval of the final LTMP. More specific success criteria and management thresholds for these measurements will be determined in the final LTMP.

*Objective A.3-3: Monitor San Joaquin kit fox dispersal habitat suitability.*

**Task 12. Conduct a Baseline Survey for San Joaquin kit fox Evidence of Use**

During the first three years of the management period, surveys for San Joaquin kit fox will be conducted on the Mitigation Site. Survey protocols for San Joaquin kit fox presence and/or relative abundance will be approved by the USFWS and incorporated here at the approval of the final LTMP. The success criteria for this task is to document any evidence of use of the mitigation site by San Joaquin kit fox.

**Task 13. Assess San Joaquin kit fox Dispersal Habitat**

Every five years, the Land Manager will conduct an additional assessment to determine if the site is suitable as San Joaquin kit fox dispersal habitat. Methods for the additional assessment may include completion of the “early evaluation requirements” from the USFWS San Joaquin Kit Fox Survey Protocol for the Northern Range (USFWS 1999), which is designed to allow the Service to determine whether or not the project site represents kit fox habitat. The final methods for this additional assessment will be approved by the USFWS and incorporated here at the approval of the final LTMP. The site will be considered dispersal habitat if it has appropriate vegetation communities, has continuity with adjacent lands, and has a prey base and denning potential. More specific criteria for these measurements will be determined in the final LTMP.

**Element A.4 Nonnative Invasive Species**

Invasive species threaten the diversity or abundance of native species through competition for resources, predation, parasitism, interbreeding with native populations, transmitting diseases, or causing physical or chemical changes to the invaded habitat.

***Objective A.4-1: Minimize the spread of existing nonnative invasive plants and any newly introduced invasive plants***

**Task 14: Conduct Surveys for Invasive Plant Species**

Every year, concurrent with activities associated with Task 7, the Land Manager will conduct surveys for invasive plant species (defined as having a “High” or “Alert” status by the California Invasive Plant Council) at the Mitigation Site. The purpose of the surveys will be to determine whether new invasive species are present or whether the distributions of existing invasive species are expanding. Success criteria for Task 14 is to minimize absolute cover of invasive plants on the mitigation site so they do not degrade habitat for the covered species. Success criteria will be determined in the final Service-approved LTMP but will be aimed at maintaining (if present condition is considered acceptable by the Service) or decreasing invasive species on the mitigation site. More specific success criteria and management thresholds for these measurements will be determined in the final LTMP and after baseline surveys.

**Task 15: Prioritize and Treat Populations of Invasive Plants**

The surveys described under Task 14 will form the basis for determining whether substantial change, relative to baseline conditions, in invasive plant distributions or abundance have occurred, and the necessity of treatment efforts. The Land Manager will determine and prioritize treatment needs based on which plant species have the greatest potential for spread or those with the greatest risk of degrading habitat for covered species. The Land manager will treat invasive plant occurrences through the use of hand removal, small powered or handheld equipment. The use of herbicides will be avoided to the maximum extent practicable at the Mitigation Site and will only be used if approved by the USFWS and CDFW. If necessary, an Herbicide Application Plan will be reviewed and approved by USFWS and CDFW to assure that no adverse effects will occur to listed species. Success criteria for Task 15 is to minimize absolute cover of invasive plants on the mitigation site so they do not degrade habitat for the covered species.

Success criteria will be determined in the final Service-approved LTMP but will be aimed at maintaining (if present condition is considered acceptable by the Service) or decreasing invasive species on the mitigation site. More specific success criteria and management thresholds for these measurements will be determined in the final LTMP and after baseline surveys.

***Objective A.4-2: Avoid an increase in the number of fish, crayfish, and bullfrogs in amphibian breeding ponds relative to baseline levels***

**Task 16. Conduct Observations of Nonnative Animals**

During the annual walk-through (Task 1) and during periodic surveys for California red-legged frog and California tiger salamander (conducted every 5 years), the Land Manager will also conduct surveys for nonnative aquatic or amphibious species (i.e., fish, crayfish, and bullfrogs). If the Land Manager captures bullfrogs (including tadpoles), crayfish, or fish during surveys, they will be immediately dispatched by the Land Manager to prevent competition with covered species. No bullfrogs, crayfish, or other invasive predator populations will be allowed on the mitigation site. More specific success criteria and management thresholds for these measurements will be determined in the final LTMP and after baseline surveys.

**Task 17. Perform Nonnative Animal Management**

The Land Manager will implement measures as needed to control bullfrogs, crayfish, and fish. No bullfrogs, crayfish, fish, or other invasive predator populations will be allowed on the mitigation site. Methods used to manage nonnative animals will include their capture and removal by seine or dipnet, nighttime removal, or as a last resort, drawdown or dewatering of a pond. Dewatering or drawdown would occur in September or October, after larvae of the California red-legged frog and California tiger salamander have metamorphosed, leaving bullfrog tadpoles, crayfish, and/or fish in the pond.

**B. Security, Safety, and Public Access**

The Mitigation Site will be fenced and shall have no general public access, nor any regular public or private use. Research and/or other educational programs or efforts may be

allowed on the Mitigation Site as approved by the Signatory Agencies but are not specifically funded or a part of this long-term management plan.

Potential wildfire fuels will be reduced as needed by mowing in areas where approved by the Signatory Agencies.

### **Element B.1 Trash and Trespass**

*Objective B.1-1: Monitor sources of trash, vandalisms, and trespass.*

**Task 18: During each site visit, record occurrences of trash and/or trespass. Record type, location, and management mitigation recommendations to avoid, minimize, or rectify a trash and/or trespass impact.**

The Land Manager will monitor for sources of trash, vandalisms and trespass during the annual walk-through (Task 1), spring biomass estimates and fall RDM surveys (Task 7), and trash removal (Task 19), conducted each year during the management period.

*Objective B.1-2: Collect and remove trash, repair vandalized structures, and rectify trespass impacts.*

**Task 19: At least once yearly, and as necessary, collect and remove as much trash and repair and rectify vandalism and trespass impacts.**

The Land Manager will collect and remove trash and repair vandalized structures as needed during the management period.

### **Element B.2 Fire Hazard Reduction**

*Objective B.2-1: Maintain the site as required for fire control while limiting impacts to biological values.*

**Task 20: Mow or graze to reduce vegetation in areas required by authority agency(ies), and as approved by the Signatory Agencies, for fire control.**

The Land Manager will reduce vegetation to control fire danger. Use of controlled burning as a management tool will not be used on the mitigation site unless approved by the Service. Success criteria for this task will be further described in the final Service-approved LTMP.

## **C. Infrastructure and Facilities**

*[Fence and gate maintenance and repair frequency will be dependent on trespass and access control issues, as well as whether grazing is utilized as a vegetation management technique and to what extent.]*

### **Element C.1 Fences, Gates, and Roads**

***Objective C.1-1: Monitor and maintain fences and gates to prevent casual trespass, allow administrative access, and [if applicable: facilitate grazing regime and management.]***

#### **Task 21: Inspect and Repair Fencing, Associated Gates, and Access Roads**

The Land Manager will inspect fencing, gates, and roads during the annual walk-through (Task 1), spring biomass estimates and fall RDM surveys (Task 7), and trash removal (Task 19) conducted each year of the management period. If after five years, it is determined that a reduced frequency is more appropriate, then the frequency of visits can be reduced with Service approval. The Land Manager will look for gaps in the barbed wire or downed barbed wire and dislodged or broken fence posts. The Land Manager will also inspect the gates in the fencing to ensure they are functioning correctly. If any of the fencing or gates need to be repaired, the Land Manager will make the repairs, as needed. All fencing will be done in a manner that allows access to and from the site by covered species. The Land Manager will inspect roads for evidence of erosion or other issues to ensure that access roads are suitable for site access and site management. Roads will be maintained and repaired as necessary.

#### **Task 22. Inspect and Repair Livestock Watering Troughs and/or Livestock Improvements**

The Land Manager will inspect livestock management improvements during the annual walk-through (Task 1) to ensure they are in proper working order. If any of the improvements need to be repaired, the Land Manager will make the repairs.

## **D. Reporting and Administration**

**Element D.1 Annual Report**

*Objective D.1-1: Provide annual report on all management tasks conducted and general site conditions to Signatory Agencies and any other appropriate parties.*

**Task 23: Prepare an Annual Report**

The Land Manager will submit an annual report to the Signatory Agencies by February 15, which will include a detailed description of the condition of the Mitigation Site; a description of the results of any monitoring activities completed in the previous calendar year; management actions taken at the Mitigation Site; an accounting of funds expended in the management of the Mitigation Site; and recommendations for adaptive management actions to be undertaken in subsequent years. The annual report will also measure and assess the progress in achieving the goals and objectives specifically detailed in this LTMP. The annual report will describe the methods used to collect and analyze the data, the results of the data analysis, a discussion of the results, and conclusions regarding the present condition of the Mitigation Site. The annual report will include any recommended changes to the management plan or monitoring regime, any remedial actions that are necessary or that were taken, and an analysis of relationships between monitoring results and objectives. Representative photographs will be included.

Specific data to be included and analyzed in this report includes monthly rainfall data; results of the hydrological monitoring (including maximum water depth in late April and May when California red-legged frog and Central California tiger salamander surveys will be conducted); species composition and percent cover of vegetation around the ponds; results of California red-legged frog and Central California tiger salamander larval surveys; any incidental sightings of California red-legged frogs, Central California tiger salamanders, bullfrogs, crayfish, and fish; results of photographic monitoring; and restoration and management recommendations and remediation needs. A summary of grazing indicators (e.g., monitoring of RDM) will be included in the report as appropriate.

The Reviewing Agencies may provide comments on the report and request a meeting to discuss the comments and any changes for the following year. In this case, the Land Manager will schedule a meeting with the interested

parties to review and discuss the recommendations made in the annual report and any agency comments. The meeting will be scheduled within 30 days of the release of the annual report, so that the results and recommendations of the report can be discussed prior to required approvals. The purpose of the annual report and meeting is to evaluate and discuss the efficacy of past management and identify changes to monitoring and/or management strategies for the following year.

## **V. Avoidance and Minimization Measures**

### ***California Tiger Salamander and California Red-legged Frog***

The Land Manager will implement the following AMMs during selected maintenance and management activities, such as pond repair and sediment removal, to address any impacts related to operations and maintenance activities on the mitigation site and with maintenance of California red-legged frog and Central California tiger salamander habitat. All Best Management Practices (BMPs) included below may be modified to accommodate changes to needs and conditions as they are implemented over time.

1. For all activities involving ground disturbance, BMPs designed to prevent activity-related discharge into surface waters will be implemented. BMPs for water quality will be implemented during all activities in upland areas where runoff could transport materials, to minimize mobilization of sediments and other harmful materials into downstream areas. These BMPs must consider not only mobilization of sediments during ground disturbance (which will likely occur primarily in dry conditions), but also the potential for sediments loosened by ground disturbing activities to be moved downstream during the following wet season. These BMPs will address at least the following items: mobilization of sediment due to gravity, erosion, or runoff during ground disturbing activities; potential spills of fuel or other chemicals into aquatic habitats; operation of equipment in flowing water; and stabilization (e.g., with vegetative cover) of any bare soils to prevent erosion and sedimentation. With the exception of sediment removal, berm/dam repair, and outlet repair at ponds, most management and maintenance activities will involve minimal soil disturbance and would therefore have little potential to result in discharge of sediment or other

materials into wetlands and other waters. As a result, BMPs will be tailored to individual activities.

2. Areas that are temporarily affected by ground disturbing activities will be restored to pre-existing or better condition upon completion of work (e.g., by seeding with an appropriate herbaceous seed mix to inhibit colonization of disturbed areas by invasive plants).
3. On-site monitoring by a FWS- and CDFW- approved biologist will be performed throughout the proposed work to ensure compliance with work limits, BMPs, and wildlife associated restrictions.
  - a. Prior to any ground disturbance, an FWS- and CDFW-approved biologist will survey the action area for listed species and will subsequently monitor work activities. This survey will permit the biologist the opportunity to observe whether there are any listed animal or plant species that may be salvaged before or during ground-disturbing activities.
  - b. During ground-disturbing activities, the FWS- and CDFW-approved biologist will be as close to the excavation as safety protocols will permit to observe whether there are any listed animal or plant species that may be salvaged before or during ground-disturbing activities. The distance at which observations will occur will be determined based on coordination between the biologist and the site safety officer.
  - c. The FWS- and CDFW-approved biologist will keep daily field logs and take photographs to document how the observations were performed.
4. The names and credentials of biologists specified for this project will be submitted to the Service. Credentials shall include species-specific training hours, Protocol-level survey hours, life-stages observed and handled. The biologist will be approved by the Service to handle the species of question at the site.
5. Any biologist performing pre-activity surveys, monitoring during management, maintenance, and operation activities, or relocation of Covered Species will have been approved by the Service in advance. The approved biologist shall be given the authority to stop any work that may result in the take of listed species. If the approved biologist exercises this authority, the Reviewing Agencies shall be notified by telephone and electronic mail within one (1) working day. The approved biologist will be the contact for any employee or contractor who might

inadvertently kill or injure a Covered Species or anyone who finds a dead, injured, or entrapped individual of these species. The approved biologist shall possess a working cellular telephone whose number shall be provided to the Service. If a species is only injured it should be taken to the Lindsay Wildlife Rehabilitation Hospital or another Service-approved facility. Equipment intended to be used for project activities will be inspected by a FWS- and CDFW-approved biologist for the presence of invasive weed species before it is mobilized into the project area. If weed species are observed or expected, the equipment will be cleaned prior to mobilization into the project area.

6. Project personnel will immediately report any observed mortality of Covered species to the on-site Service-approved biologist. The Service approved biologist will then identify the carcass. If the carcass is that of a listed species, the approved biologist will report it to the Service within 24 hours.
7. A Worker Environmental Awareness Program (WEAP) will be given to all personnel before the commencement of any vegetation clearing or ground-disturbing activities. An approved biologist will explain to construction workers how best to avoid the accidental take of Covered Species. This training session will be required as a mandatory informational field meeting for contractors and all construction personnel. Interpretation will be provided for non-English speaking workers. The field meeting will include information on species identification, life history, descriptions, and habitat requirements during various life stages. Emphasis will be placed on the importance of the habitat and life stage requirements within the context of relevant AMMs. Handouts, illustrations, photographs, and maps showing areas where minimization and avoidance measures must be implemented will be included as part of this education program. The WEAP will increase the awareness of the contractors and construction workers about existing federal and state laws regarding endangered species, as well as increase their compliance with all local, state, and federal permit conditions. When new personnel are added to the project, they will receive the mandatory training before starting work. Proof of worker attendance will be kept on file by the Land Manager.
8. Relocation of any Covered Species will occur according to the relocation plan approved by the Service. The plan identifies appropriate relocation methods and sites for any adult, juvenile, or larval Central

California tiger salamander or California red-legged frog that may be observed during the pre-activity surveys or during biological monitoring and that may need to be relocated. The Reviewing Agencies will approve this relocation plan by virtue of approving this LTMP.

9. Ground-disturbing activities, including vegetation removal that results in soil disturbance, will be performed between 30 April and October 15 (or the first measurable fall rain of 1 centimeter) to minimize the potential for impacts on California red-legged frogs and Central California tiger salamanders moving aboveground. Ground-disturbing activities may occur outside this work window only with the Service approval. Planting may continue during the wet season within established work areas without the need for additional approval by the Service. No work will be scheduled during or within 24 hours after a forecasted rain event, to the extent possible. Before work resumes after a rain event and before project ground-disturbing activities continue, an Service-approved biologist will inspect the work area for the presence of CTSs. If either species are located during these surveys, they will be relocated as instructed by the FWS. Decontamination of excavation equipment will be in accordance with an approved sampling and analysis plan (SAP).
10. Activities involving large amounts of ground disturbance (sediment removal or berm/dam repair) and that directly impact habitat that is ponded at the time of construction (i.e., ponds or pools within creeks) shall occur during the July–October period to avoid the period when California red-legged frog and Central California tiger salamander larvae are most likely to be present. In-water work will take place as late as feasible within this work window. For seasonal waterbodies that are dry (i.e., that have no surface water) when the activity occurs, the upland work window described in the preceding bullet shall apply.
11. All vehicles will observe a 20 mile-per-hour speed limit within the Mitigation Area (this does not apply on City and County roads and State highways).
12. Work within the Mitigation Site will be limited to daylight hours from 30 minutes after sunrise until 30 minutes before sunset unless the Reviewing Agencies provide written approval, on a site-by-site or activity-by-activity basis, for performance of work during other times. The Reviewing Agencies may require the implementation of additional

avoidance measures (i.e., restrictions on lighting or on work during rain events) for night work.

13. California red-legged frogs and Central California tiger salamanders are attracted to structures providing cavities such as pipes, and they may enter stored pipes and become trapped. All pipes, culverts, or similar structures that are stored at ground level in a work area for one or more overnight periods will be either securely capped prior to storage or thoroughly inspected by the approved biologist for these animals before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a Central California tiger salamander or California red-legged frog is discovered inside a pipe, the approved biologist will move the animal to a safe nearby location in accordance with the species relocation plan.
14. To eliminate an attraction to the predators of the Covered Species all food-related trash items such as wrappers, cans, bottles, and food scraps will be disposed of in solid, closed containers (trash cans) and removed from any work site daily.
15. Any contractor, employee, or agency personnel who inadvertently kills or injures a Covered Species during management, maintenance, or operations activities will immediately report the incident to an approved biologist. The biologist will contact the Reviewing Agencies to report the dead or injured animal via electronic mail and telephone within one working day. In addition, any incidental take of listed species in the form of death or injury will be tracked and, within five days, reported to the Reviewing Agencies along with a summary of the cumulative take of individuals to date.
16. All vehicles and equipment refueling will occur at least 200 feet from wetlands. An exception is provided if a bermed and impermeable fabric-lined fueling area is constructed, and a spill kit is located at the fueling station
17. If erosion control materials are used for any management or maintenance activity, tightly woven fiber netting or similar material will be used for erosion control or other purposes to ensure that individuals are not trapped. Plastic monofilament netting (erosion control matting) or similar material will not be used because California red-legged frogs and Central California tiger salamanders may become entangled or trapped in it.

18. To prevent inadvertent entrapment of individuals during ground disturbance activities, the on-site biologist and/or construction foreman/manager will ensure all excavated, steep-walled holes or trenches more than 1-foot deep, are completely covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks and inspected by the approved biologist. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals by the approved biologist and/or designated construction monitor. If at any time a trapped Central California tiger salamander or California red-legged frog is discovered, the approved biologist will move the animal in accordance with the relocation plan.
19. An approved biologist will be present to monitor all ground-disturbing management and maintenance activities within the Mitigation Site that may result in take of the Covered Species. If one of the Covered Species is observed in a work area, all work that could potentially harm the individual will be stopped until the approved biologist has moved the individual out of the work area in accordance with the approved species relocation plan.
20. To protect amphibians from mowers that may be used to clear grass prior to project implementation, mower blades will be adjusted to a height of 125–150 mm to allow clearance of amphibians that may be sheltering in the grass.
21. When practicable, holes and trenches will be backfilled at the end of each day, or wildlife-compatible ramps created, to prevent wildlife entrapment.
22. Where possible, ground-disturbing activities will avoid burrows and burrow complexes.
23. Prior to stepping in ponds on the mitigation site, all workers will spray bleach solution for decontamination procedures. Boots should be decontaminated appropriately before stepping onto the mitigation site.
24. An approved biologist will monitor berm/dam repair and sediment/vegetation removal, activities that have the greatest potential for resulting in injury or mortality of California red-legged frogs or California tiger salamanders. The approved biologist will monitor ensuring the following avoidance and minimization measures are implemented during habitat management activities.
  - Repair of failing berms/dams or removal of sediment/vegetation

from ponds will occur between September 1 and October 15 unless the pond is otherwise dry.

- Unless off-road travel is required to access ponds, vehicles will be restricted to roads. If off-road travel is needed to deliver supplies to the ponds the Land Manager will avoid wetlands, sensitive habitats, and ground squirrel burrows, to the extent feasible.
- Within 7 days prior to berm/dam repair or removal of silt, the work site will be surveyed by an authorized biologist for the presence of individuals of California red-legged frogs or California tiger salamanders. If water is present in the pond, the survey will involve using a dip net or seine to sample the ponded water for larval individuals.
- If the biologist detects individuals of any life stage of the covered species and determines that they are in harm's way, the biologist will capture and relocate these individuals to nearby appropriate aquatic or upland habitat as outlined in a relocation plan.
- The biologist will monitor the repair activity and will be the contact for any worker who finds a dead, injured, or entrapped individual of California red-legged frog or California tiger salamander.

25. If drawdown of a pond is necessary to control nonnative animals or repair failing berms/dams or to remove sediment/vegetation from ponds, the Land Manager will draw down the pond in which nonnatives need to be controlled in September or October, after larvae of the California red-legged frog and California tiger salamander have metamorphosed, leaving bullfrog tadpoles (which typically require two seasons to develop and metamorphose), crayfish, and/or fish in the pond.

- a. If a pump is used to draw down the pond, measures will be implemented to prevent aquatic organisms from being drawn in.
- b. An approved biologist will monitor the drawdown to ensure that California red-legged frogs and California tiger salamanders are not harmed by the drawdown activity.
- c. If larvae are detected, the biologist will capture and relocate these larvae to nearby appropriate aquatic habitat per an approved relocation plan.
- d. All individuals working in aquatic habitat will adhere to *the Equipment Decontamination Protocol for Field Staff in Sequoia and Kings Canyon National Parks*

([https://www.fws.gov/sacramento/es/Survey-Protocols-Guidelines/Documents/SEKI\\_DecontaminationProtocol\\_2014.pdf](https://www.fws.gov/sacramento/es/Survey-Protocols-Guidelines/Documents/SEKI_DecontaminationProtocol_2014.pdf)) or other current USFWS protocol for decontamination to prevent the spread of Amphibian diseases (e.g. boots and waders should be decontaminated appropriately).

- e. The biologist will dispatch any bullfrog larvae, fish, or crayfish detected during the drawdown and pond will be kept dry long enough to ensure that any remaining individuals have died.

### ***San Joaquin Kit Fox***

The following measures will be incorporated during management and monitoring activities at the mitigation site to avoid and minimize effects on San Joaquin kit fox.

26. The guidelines described in U.S. Fish and Wildlife Service 2011, or the most recent version of these guidelines will be implemented, except as modified by other measures below. The applicant will inquire with the Service yearly to obtain the most recent guidelines.
27. If it is determined that management and monitoring activities could disturb denning kit fox, pre-work surveys shall be conducted no less than 14 days and no more than 30 days before the beginning of ground disturbance, or any activity likely to affect San Joaquin kit fox. The biologists shall conduct den searches by systematically walking transects through the project site and a buffer area to be determined in coordination with the Service. Transect distance will be based on the height of vegetation such that 100% visual coverage of the project site is achieved. If a potential or known den is found during the survey, the biologist will measure the size of the den, evaluate the shape of the den entrances, and note tracks, scat, prey remains, and recent excavations at the den site. Dens will be classified into the den status categories defined by the Service (Service 2011). A report of the preconstruction survey shall be submitted to the Service for review and approval.
28. If potential den sites are located they shall be monitored by a biologist approved by the Service. The biologist will use an infrared beam camera and track plates or powder, to determine if the den is currently being used. The camera and track plates will be placed at the burrow for a minimum of 5 consecutive days. Other signs of occupancy (e.g., scat, fur) will be

searched for in and around the burrow and, if found, documented with photographs.

29. San Joaquin kit fox are attracted to den-like structures such as stored pipes. All construction pipes, culverts, or similar structures with a 4-inch or greater diameter that are stored at the construction site for one or more overnight periods shall be closed off at both ends and thoroughly inspected before they are buried, capped, or otherwise used or moved in any way. If a kit fox is discovered in a pipe, that section of pipe shall not be moved until the kit fox is allowed to leave unimpeded or the Service have been consulted.

All materials staged on the project site, and especially in staging areas, shall be spaced so as to not provide areas suitable for Covered Species to seek shelter. At no time shall materials be haphazardly piled on the project sites. All materials shall be inspected thoroughly by the biological monitor prior to being moved.

30. Construction activities shall be prohibited within exclusion zones around suitable burrows, based on their type. If any San Joaquin kit fox dens or potential dens are found during preconstruction surveys, the status of the dens shall be evaluated prior to project ground disturbance. The configuration of exclusion zones around San Joaquin kit fox dens should have the radius measured outward from the entrance or cluster of entrances, as follows.
- *Potential den*: a 50-foot avoidance buffer will be used when kit fox occupation is expected but not confirmed.
  - *Known den*: a 100-foot avoidance buffer will be used if kit fox activity is observed.
  - *Natal/pupping den*: the Wildlife Agencies must be contacted.
31. Rodenticide, herbicide, and pesticide use is prohibited on the mitigation site unless approved by the Service for specific use.

## **VI. Adaptive Management**

Adaptive management means an approach to natural resource management which incorporates changes to management practices, including corrective actions as determined to be appropriate by the Signatory Agencies in discussion with the land manager. Adaptive management includes those activities necessary to address the effects of climate change, fire, flood, or other natural events,

force majeure, etc. Before considering any adaptive management changes to the long-term management plan, the Signatory Agencies will consider whether such actions will help ensure the continued viability of the Mitigation Site's biological resources.

The management tasks described in this LTMP and the monitoring required to ensure the performance goals are being met are based on existing conditions, experience managing habitat for the target species and experience monitoring ponds for California red-legged frog and California tiger salamander. While monitoring and conducting management activities within the Mitigation Site, modifications to plan requirements or new actions to improve land management may be identified. The most likely area of possible adaptations will be in grazing management. All proposed adaptations will first be proposed for approval in an annual report to the Signatory Agencies. Once approved, adaptations will be incorporated into the LTMP requirements.

## **VII. Transfer, Replacement, Amendments, and Notices**

### **A. Transfer**

Any subsequent transfer of responsibilities under this long-term management plan to a different land manager shall be requested by the land manager in writing to the Signatory Agencies, shall require written approval by the Signatory Agencies, and shall be incorporated into this long-term management plan by amendment. Any subsequent Property Owner assumes land manager responsibilities described in this long-term management plan and as required in the Conservation Easement, unless otherwise amended in writing by the Signatory Agencies.

### **B. Replacement**

If the land manager fails to implement the tasks described in this long-term management plan and is notified of such failure in writing by any of the Signatory Agencies or the conservation easement grantee, land manager shall have 90 days to cure such failure. If failure is not cured within 90 days, land manager may request a meeting with the Signatory Agencies to resolve the failure. Such meeting shall occur within 30 days or a longer period if approved by the Signatory Agencies. Based on the outcome of the meeting, or if no meeting is requested, the Signatory Agencies may designate a replacement land manager in writing by amendment of this long-term management plan. If land manager fails to designate a replacement land manager, then such public or private land or resource management organization acceptable to and as directed by the Signatory Agencies may enter onto the Mitigation Site property in order to fulfill the purposes of this long-term management plan.

### **C. Amendments**

The land manager, property owner, and the Signatory Agencies may meet and confer from time to time, upon the request of any one of them, to revise the long-term management plan to better meet management objectives and preserve the habitat and conservation values of the Mitigation Site. Any proposed changes to the long-term management plan shall be discussed with the Signatory Agencies and the land manager. Any proposed changes will be designed with input from all parties. Amendments to the long-term management plan shall be approved by the Signatory Agencies in writing. Plan amendments shall be required management components and shall be implemented by the land manager.

If the CDFW or USFWS determine, in writing, that continued implementation of the long-term management plan would jeopardize the continued existence of a state or federally listed species, any written amendment to this long-term management plan, determined by either the CDFW or USFWS as necessary to avoid jeopardy, shall be a required management component and shall be implemented by the land manager.

**D. Notices**

Any notices regarding this long-term management plan shall be directed as follows:

Land Manager (name, address, telephone and FAX)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Property Owner (name, address, telephone and FAX)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Conservation Easement Holder (name, address, telephone and FAX)

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Signatory Agencies:

U.S. Fish and Wildlife Service  
Sacramento Office  
2800 Cottage Way, Room W-2605  
Sacramento, CA 95825  
Attn: Field Supervisor  
Telephone: 916-414-6600  
Fax: 916-414-6710

California Department of Fish and Wildlife  
Bay Delta Region  
2825 Cordelia Road, Suite 100  
Fairfield, CA 94534  
Attn: Regional Manager  
Telephone:  
Fax:

California Department of Fish and Wildlife  
Habitat Conservation Branch  
1416 Ninth Street, 12th Floor  
Sacramento, CA 95814

Attn: Branch Chief  
 Telephone: 916-653-4875  
 Fax: 916-653-2588

## **VIII. Funding and Task Prioritization**

### **A. Funding**

*[The list of tasks in Table 2 is not meant to be exhaustive and some potential mitigation sites may have more elements to consider and some may have fewer depending on the attributes of the Mitigation Site chosen.]*

Table 2 summarizes the anticipated costs of long-term management for the Mitigation Site. These costs include estimates of time and funding needed to conduct the basic long term monitoring and management actions described here and listed in Table 1 above.

The total annual funding anticipated is approximately \$\_\_\_\_\_ for long-term management, therefore, with the current annual estimated capitalization rate of,\_\_\_\_ the total endowment amount required for long-term management and monitoring activities on the Mitigation Site in a manner consistent with this long-term management Plan will be \$\_\_\_\_\_.

A qualified, USFWS-approved, non-profit organization or government agency shall hold the endowment principal and interest monies as required by law in the Special Deposit Fund, or a subsequent state authorized trustee fund, which consists of monies that are paid into it in trust pursuant to law, and is appropriated to fulfill the purposes for which payments into it are made. These interest monies will fund the long-term management, enhancement, and monitoring activities on habitat lands in a manner consistent with this long-term management plan.

Land manager shall consult with the conservation easement holder on a year to year basis to determine the amount of funding available for management and monitoring activities. Following annual management activities, land manager may invoice the conservation easement holder for management activities following the invoicing instructions provided by the conservation easement holder.]

### **B. Task Prioritization**

Due to unforeseen circumstances, prioritization of tasks, including tasks resulting from new requirements, may be necessary if insufficient funding is available to accomplish all tasks. The land manager and the Signatory Agencies shall discuss task priorities and funding availability to

determine which tasks will be implemented. In general, tasks are prioritized in this order: 1) required by a local, state, or federal agency; 2) tasks necessary to maintain or remediate habitat quality; and 3) tasks that monitor resources, particularly if past monitoring has not shown downward trends. Equipment and materials necessary to implement priority tasks will also be considered priorities. Final determination of task priorities in any given year of insufficient funding will be determined in consultation with the Signatory Agencies and as authorized by the Signatory Agencies in writing.

Appendix E  
**Endowment Cost Estimate**

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**Table E.1. Conservation Easement Management and Monitoring Cost Estimate**

Task List	Description	Unit	Level of Effort <sup>1</sup> Lead Mgr Hr	\$175 Sr. Tech			\$120 Tech			\$90 Field Crew			\$75 Admin Staff		Materials		Miles	Mileage Cost		Total	Frequency (years)	Frequency <sup>2</sup>	Cost Per Year	Stewardship Endowment	Assumptions							
				Cost	Cost	Cost	Cost	Cost	Cost	Cost	Qty	0.58 current IRS rate	Qty																			
<b>I. Introduction (No Action)</b>																																
<b>II. Property Description (No Action)</b>																																
<b>III. Habitat and Species Description (No Action)</b>																																
<b>IV. Management and Monitoring (Actions under Individual Elements)</b>																																
<b>Element A1. Waters of the US and Wetlands</b>																																
Task 1. Annual walk-through		Hours															100	\$58	1	\$1,258	1	1	\$1,258	\$35,943	Materials cost is 100 mile round trip x 0.58/mile							
Task 2. Reference photos		Hours																							Done at the same time as baseline survey tasks, no additional field work cost included on this line.							
	Establish reference photos and prepare a site map (once)	Hours		\$0	0	\$0	\$0	\$0	\$0					2	\$150										NA	Assumes one pond needs a gauge. Cost of gauge is \$50 plus 100 mile round trip.						
	Monitor reference photos (assumed every 5 years)	Hours		\$0	0	\$0	\$0	\$0	\$0																NA	Done at the same time as task 1, no additional cost included on this line.						
<b>Element A2. Covered Habitat</b>																																
Task 3. Install and Repair Staff Gauges		Hours																								Up to 8 visits per year conducted mostly concurrently with Tasks 1, 7 (2 visits under Task 7), 8, 10, 12, and 19, plus another staff day for a winter visit.						
	Baseline Pond Inspection (first three years)	Hours		\$0		\$0	8	\$720	\$0	\$0																Assumes one pond needs a gauge. Cost of gauge is \$50 plus 100 mile round trip.						
	Install staff gauge (once)	Hours		\$0		\$0	8	\$720	\$0	\$0																Assumes one pond needs a gauge. Cost of gauge is \$50 plus 100 mile round trip.						
	Replace Gauge (assumed every 28.5 years)	Hours		\$0		\$0	8	\$720	\$0	\$0																Assumes one pond needs a gauge. Cost of gauge is \$50 plus 100 mile round trip.						
Task 4. Inspect ponds and repair, inspection hydroperiod		Hours																								Done at the same time as task 1, no additional cost included on this line.						
	Visual Monitoring of Ponds (annually)	Hours		\$0		\$0	8	\$720	\$0	\$0																Up to 8 visits per 5 year survey conducted mostly concurrently with Tasks 1, 7 (2 visits under Task 7), 9, 11, 13, and 19, plus another staff day for a winter visit.						
	Inspect Pond hydrology and habitat suitability (every 5 years)	Hours		\$0		\$0	8	\$720	\$0	\$0																Assumes one day and one piece of equipment to remove sediment each visit. Equipment cost of \$500 and \$6,309 100 miles.						
	Repair Ponds (assumed every 10 years)	Hours		\$0		\$0	10	\$900	10	\$750																Assumes one day and one piece of equipment to remove sediment each visit. Equipment cost of \$500 and \$6,309 100 miles.						
Task 5. Remove sediment from ponds (assumed every 10 years)		Hours		\$0		\$0	10	\$900	10	\$750																One person for one day. Plus 100 miles.						
Task 6. Baseline Upland Surveys		Hours																								Done at the same time as Task 9 and 11, no addition field work cost included on this line.						
	Establish biomass estimate and RDM monitoring sites (once)	Hours		\$0		8	\$960	\$0	\$0	\$0																Assumes one day and one piece of equipment to remove sediment each visit. Equipment cost of \$500 and \$6,309 100 miles.						
	Ground Squirrel Burrow Mapping (once)	Hours		\$0		8	\$960	\$0	\$0	\$0																Assumes one day and one piece of equipment to remove sediment each visit. Equipment cost of \$500 and \$6,309 100 miles.						
	Ground Squirrel Burrow Surveys (every five years concurrent with species surveys)	Hours		\$0		\$0	\$0	\$0	\$0	\$0																Assumes one day and one piece of equipment to remove sediment each visit. Equipment cost of \$500 and \$6,309 100 miles.						
Task 7. Spring Biomass Estimates and Fall RDM Measurements		Hours																								Assumes one day and one piece of equipment to remove sediment each visit. Equipment cost of \$500 and \$6,309 100 miles.						
	Spring Biomass estimates (annually in the spring)	Hours		\$0		\$0	10	\$750	\$0	\$500																Assumes one day and one piece of equipment to remove sediment each visit. Equipment cost of \$500 and \$6,309 100 miles.						
	RDM Survey (annually in the fall)	Hours		\$0		\$0	10	\$750	\$0	\$500																Assumes one day and one piece of equipment to remove sediment each visit. Equipment cost of \$500 and \$6,309 100 miles.						
<b>Element A3. T&amp;E Wildlife</b>																																
Task 8. Baseline CRLF survey (first three years)		Hours		\$0	30	\$3,600	\$0	\$0	\$0	\$0																Tasks 8, 10, and 12 would be conducted concurrently each year and a total 3 biologist days is available each year for surveys. Also includes 100 mile round trip each year.						
Task 9. CRLF survey (every 5 years)		Hours		\$0	10	\$1,200	\$0	\$0	\$0	\$0																Tasks 9, 11, and 13 would be conducted concurrently each 5 year survey and a total 3 biologist days is available each 5 year survey. Also includes 100 mile round trip each 5 year survey.						
Task 10. Baseline CTS survey (first three years)		Hours		\$0	30	\$3,600	\$0	\$0	\$0	\$0																Tasks 8, 10, and 12 would be conducted concurrently each year and a total 3 biologist days is available each year for surveys. Also includes 100 mile round trip each year.						
Task 11. CTS survey (every 5 years)		Hours		\$0	10	\$1,200	\$0	\$0	\$0	\$0																Tasks 9, 11, and 13 would be conducted concurrently each 5 year survey and a total 3 biologist days is available each 5 year survey. Also includes 100 mile round trip each 5 year survey.						
Task 12. Baseline SJKF survey (first three years)		Hours		\$0	30	\$3,600	\$0	\$0	\$0	\$0																Tasks 8, 10, and 12 would be conducted concurrently each year and a total 3 biologist days is available each year for surveys. Also includes 100 mile round trip each year.						
Task 13. SJKF dispersal habitat survey (every 5 years)		Hours		\$0	10	\$1,200	\$0	\$0	\$0	\$0																Tasks 9, 11, and 13 would be conducted concurrently each 5 year survey and a total 3 biologist days is available each 5 year survey. Also includes 100 mile round trip each 5 year survey.						
<b>Element A4. Invasive Species</b>																																
Task 14. Conduct surveys for invasive plants (annually)		Hours		\$0	0	\$0	0	\$0	\$0	\$0																Done at the same time as task 7, no additional cost included on this line.						
Task 15. Prioritize and Treat Invasive Plants (assumed every 5 years)		Hours																								Assumes one staff to treat invasives. Plus \$500 in equipment or herbicide and 100 mile round trip.						
	Herbicide Application Plan Preparation and Approval	Hours		\$0		\$0	10	\$750	\$0	\$500																Assumes one staff to treat invasives. Plus \$500 in equipment or herbicide and 100 mile round trip.						
	Treatment	Hours		\$0		\$0	10	\$750	\$0	\$500																Assumes one staff to treat invasives. Plus \$500 in equipment or herbicide and 100 mile round trip.						
Task 16. Conduct observations of nonnative animals (annually)		Hours		\$0		\$0	0	\$0	\$0	\$0																Assumes one staff to treat invasives. Plus \$500 in equipment or herbicide and 100 mile round trip.						
Task 17. Perform nonnative animal management (assumed every 5 years)		Hours		\$0		\$0	10	\$900	\$0	\$600																Assumes one staff to treat invasives. Plus \$500 in equipment or herbicide and 100 mile round trip.						
<b>Element B1. Trash and Trespass</b>																																
Task 18. Trash, vandalism, and trespass monitoring (annually during each site visit)		Hours		\$0		\$0	0	\$0	\$0	\$0																Assumes one staff to treat invasives. Plus \$500 in equipment or herbicide and 100 mile round trip.						
Task 19. Trash and vandalism removal and cleanup (annually)		Hours		\$0		\$0	10	\$750	\$0	\$100																Assumes one staff to treat invasives. Plus \$500 in equipment or herbicide and 100 mile round trip.						
<b>Element B2. Fire Hazard Reduction</b>																																
Task 20.1 Reduce vegetation for fire control (assumed every 5 years)		Hours		\$0		\$0	0	\$0	10	\$750																Assumes mowing event is required every 5 years. Grazing is typically sufficient to control vegetation on an annual basis.						
<b>Element C1. Fences and Gates</b>																																
Task 21. Inspect and Repair Fencing, Associated Gates, and Access Roads		Hours																								Assumes mowing event is required every 5 years. Grazing is typically sufficient to control vegetation on an annual basis.						
	Inspect fence, gates, and roads (annually during each site visit)	Hours		\$0		\$0	0	\$0	\$0	\$0																Assumes mowing event is required every 5 years. Grazing is typically sufficient to control vegetation on an annual basis.						
Task 22. Inspect and Repair Livestock Improvements		Hours																								Assumes mowing event is required every 5 years. Grazing is typically sufficient to control vegetation on an annual basis.						
	Repair of fencing, gates, and roads (assumed every 5 years)	Hours		\$0		\$0	0	\$0	10	\$750																Assumes mowing event is required every 5 years. Grazing is typically sufficient to control vegetation on an annual basis.						
	Inspect Livestock Improvements (annually)	Hours		\$0		\$0	0	\$0	0	\$0																Assumes mowing event is required every 5 years. Grazing is typically sufficient to control vegetation on an annual basis.						
	Repair Livestock Improvements (assumed every 10 years)	Hours		\$0		\$0	0	\$600	\$0	\$0																Assumes mowing event is required every 5 years. Grazing is typically sufficient to control vegetation on an annual basis.						
<b>Element D1. Annual Report</b>																																
Task 23. Prepare annual report (including meeting with agencies)		Hours		4	\$700	8	\$960	8	\$720	10	\$750															Assumes prep of report and one meeting with agencies (if needed) by individual elements above.						
<b>V. Avoidance and Minimization Measures (Actions would be triggered by individual elements above)</b>																																
<b>Biological monitoring and implementation of AMM's</b>																																
Task 24. Biological monitoring and implementation of AMM's		Hours		0	\$0	12	\$1,440	2	\$180	0	\$0															Assumes prep of report and one meeting with agencies (if needed) by individual elements above.						
<b>VI. Adaptive Management (Actions would occur under individual elements above)</b>																																
<b>VII. Transfer, Replacement, Amendments and Notices (No Action)</b>																																
<b>VIII. Funding and Task Prioritization (No Action)</b>																																
<b>Administration and Operations<sup>3</sup></b>																																
Admin Operations (invoicing, oversight, management)		Hours		4	\$700	4	\$480	\$0	\$0	12	\$900															Assumes prep of report and one meeting with agencies (if needed) by individual elements above.						
Meetings (additional with agencies or landowners)		Hours		8	\$1,400	4	\$480	\$0	\$0	\$0																Assumes prep of report and one meeting with agencies (if needed) by individual elements above.						
<b>Changed Circumstances<sup>4</sup></b>																																
Non-native management response		Hours		8	\$1,400	8	\$960	\$0	10	\$750																Assumes prep of report and one meeting with agencies (if needed) by individual elements above.						
Wildfire response		Hours		8	\$1,400	\$0	\$0	10	\$750	\$0	\$500															Assumes prep of report and one meeting with agencies (if needed) by individual elements above.						
Earthquake response		Hours		8	\$1,400	8	\$960	\$0	10	\$750																Assumes prep of report and one meeting with agencies (if needed) by individual elements above.						
Drought response		Hours		8	\$1,400	8	\$960	\$0	10	\$750																Assumes prep of report and one meeting with agencies (if needed) by individual elements above.						
Subtotal <sup>5</sup>																										Assumes prep of report and one meeting with agencies (if needed) by individual elements above.						
<b>Contingency (1.5%)</b>																																
<b>Subtotal with Contingency</b>																																
<b>Capitalization (SPEND) Rate</b>																																
<b>One-time costs (Baseline tasks completed once early in the management period)</b>																																
<b>Total Endowment Amount</b>																																
																								1.50%			\$15,376			Initial costs for one time management actions before long-term management begins.		
																											\$478,049					

<sup>1</sup> The level of effort assumes tasks would be completed by staff with different levels of education and experience depending on the task. A higher cost rate corresponds with higher levels of education and/or experience.

<sup>2</sup> Frequency Definitions

One time	0
Every year	1
Every other year	0.5
Every 3 years	0.3
Every 5 years	0.2
Every 10 years	0.1
Every 20 years	0.05
Every 28.5 years	0.035

<sup>3</sup> These line items are not sections of the LTMP, but are included in the HCP and planned for here.

<sup>4</sup> The total endowment cost excludes rows 68-71. These amounts are shown for informational purposes to demonstrate that their sum is less than the contingency amount.

**Section 7 Compensation Site Review Criteria**

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# Appendix F

## Section 7 Compensation Site Review Criteria

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### Sacramento Fish and Wildlife Office Review Criteria for Section 7 Compensation

Revised January 30, 2014

#### **Property Assurances and Conservation Easement**

- Title Report [*preliminary at proposal, and Final Title Insurance at recordation*]; no older than six months;
- Property Assessment and Warranty;
- Subordination Agreement [*include if any outstanding debts or liens on the property; may be needed for existing easements*];
- Legal Description and Parcel Map;
- Conservation Easement [*use the current SFWO standardized CE template*]; or
- Non-Template Conservation Easement [*this requires additional review*]

#### **Site Assessment and Development**

- Phase I Environmental Site Assessment;
- Habitat Development Plan [*include if habitat will be constructed, restored, or enhanced*];
- Construction Security Analysis [*applicable if habitat is being constructed/enhanced/restored*];
- Performance Security Analysis [*applicable if there are performance standards*];

#### **Site Management**

- Interim Management Plan;
- Interim Management Security Analysis and Schedule;
- Long-Term Management Plan;
- Endowment Fund Analysis and Schedule;

- Endowment Funding Agreement or Trust Agreement or Declaration of Trust  
[DFW calls this a “mitigation agreement”]

## **Guidelines**

### **Real Estate Assurances and Conservation Easement (CE)**

#### Title Report

1. Who holds fee title to property?
2. Exceptions to title. Are there any liens or encumbrances (existing debts, leases, or easements) on the property? Note that any existing exceptions to title will have priority over a conservation easement for the mitigation project.
  - a. Review Preliminary Title Report to evaluate liens and encumbrances (see Property Assessment and Warranty, below).
  - b. Could any of these exceptions to title potentially interfere with either biological habitat values or ownership? If existing easements can potentially interfere with the conservation values/habitat of the property, those portions of the land should be deducted from the total compensation acreage available on the site.
  - c. Split estates. Have the water or mineral rights been severed from title? If so, property owner should be encouraged to re-acquire those rights, or at least to acquire the surface-entry rights to remove or limit access for mineral exploration/development.

#### Property Assessment and Warranty

1. Property owner should submit a Property Assessment and Warranty, which discusses every exception to title listed on the Preliminary Title Report and Final Title Insurance Policy, evaluating any potential impacts to the conservation values that could result from the exceptions to title (see below).
2. The Property Assessment and Warranty should include a summary and full explanation of all exceptions remaining on the title, with a statement that the owner/Grantor accepts responsibility for all lands being placed under the CE as available for the primary purposes of the easement, as stated in the easement, and assures that these lands have a free and clear title and are available to be placed under the CE.

#### Subordination Agreement

1. A Subordination Agreement is necessary if there is any outstanding debt on the property; it could also be used to subordinate liens or easements. Review Subordination Agreement language for adequacy—the lending bank or other lien or rights holder must agree to fully subordinate each lien, encumbrance, or easement under the CE.

#### Legal Description and Parcel Map

1. Ensure accuracy of map, and location and acreage protected under the CE.
2. Both the map and the legal description should explain the boundaries of the individual project compensation site. The site should *not* have ‘leftover’ areas for later use.

3. Ask for an easement map to be prepared (if applicable), showing all easements on the property.

### Conservation Easement from Template

1. Who will hold the easement?
  - a. Conservation easements require third-party oversight by a qualified non-profit or government agency (=easement holder or Grantee). Minimum qualifications for an easement holder include:
    - i. Maintaining accreditation by the Land Trust Accreditation Commission  
<http://www.landtrustaccreditation.org/home>.
    - ii. Organized under IRS 501(c)(3);
    - iii. Qualified under CA Civil Code § 815;
    - iv. Bylaws, Articles of Incorporation, and biographies of Boards of Directors on file at;
      1. Must meet requirements of SFWO, including 51% disinterested parties on the Board of Directors;
    - v. Approved by SFWO
2. Project Applicant should submit a redline version showing all of their proposed revisions in track changes or other editable electronic format, along with an explanation of all deviations from the template.

#### 10.2.1 Non-Template Conservation Easement

1. If not using the CE template, the Project Applicant should specify objections they have to the template. This may substantially delay processing as the non-template CE will require review by the Solicitor's Office. Alternate CEs are subject to SFWO approval prior to being granted and recorded.
2. The Project Applicant must either 1) add SFWO as a third-party beneficiary, or 2) add language throughout the document, in all appropriate places, that will assure SFWO the right to enforce, inspect, and approve any and all uses and/or changes under the CE prior to occurrence (including land use, biological management or ownership).
3. Include, at a minimum, language to:
  - a. Reserve all mineral, air, and water rights under the CE as necessary to maintain and operate the site in perpetuity;
  - b. Ensure all future development rights are forfeited;
  - c. Ensure all prohibited uses contained in the CE template are addressed; and
  - d. Link the CE, Management Plan, and the Endowment Fund within the document (e.g., note that each exists to support the others, and where each of the documents can be located if a copy is required).
4. Insert necessary language, particularly, but not exclusively, per: (can compare to CE template):
  - a. Rights of Grantee
  - b. Grantee's Duties
  - c. Reserved Rights
  - d. Enforcement
  - e. Remedies
  - f. Access
  - g. Costs and Liabilities

- h. Assignment and Transfer
  - i. Merger
  - j. Notices
5. Include a signature block for USFWS to sign “approved as to form”.

## **Site Assessment and Development**

### Phase I Environmental Site Assessment

1. The Phase I ESA must show that the compensation site is not subject to any recognized environmental conditions as defined by the American Society for Testing and Materials (ASTM) Standard E1527-05 “Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, available at <http://www.astm.org/Standards/E1527.htm>, (i.e., the presence or likely presence of any Hazardous Substances or petroleum products).
2. If the Phase I ESA identifies any recognized environmental conditions, the Project Applicant must represent and warrant to the SFWO that all appropriate assessment, clean-up, remediation, or removal action has been completed.
3. If the Phase I ESA identifies any recognized environmental conditions, a Phase II ESA may be needed for sampling and laboratory analysis.

### Restoration or Habitat Development Plan [not required if the site is preservation only]

1. The overall plan governing construction and habitat establishment activities required to be conducted on the Property, including, without limitation, creation, restoration, and enhancement of habitat.
  - a. This plan should include the baseline conditions of the Property including biological resources, geographic location and features, topography, hydrology, vegetation, past, present, and adjacent land uses, species and habitats occurring on the property, a description of the activities and methodologies for creating, restoring, or enhancing habitat types, a map of the approved modifications, overall habitat establishment goals, objectives and Performance Standards, monitoring methodologies required to evaluate and meet the Performance Standards, an approved schedule for reporting monitoring results, a discussion of possible remedial actions, and any other information deemed necessary by the SFWO.
2. Any permits and other authorizations needed to construct and maintain the site shall be included and in place prior to the start of construction of the habitat.
3. Full construction plans for any habitat construction are subject to SFWO approval and must be *SFWO-approved* prior to the start of construction of the habitat.

### Construction Security

1. Construction Security in the amount of 100% of a reasonable third party estimate or contract to create, restore, or enhance habitats on the property in accordance with the Restoration or Habitat Development Plan.
2. Construction Security can be drawn on should the project proponent default.
3. The Construction Security should be in the form of an irrevocable standby letter of credit or a cashier’s check.

- a. LOC: issued for a period of at least one year, and provide that the expiration date will be automatically extended for at least one year on each successive expiration date unless, until extension is no longer necessary.
- b. Beneficiary: a third party subject to approval by the SFWO.
- c. Language in a draft letter of credit subject to approval by the SFWO.

Performance Security [only necessary if habitat performance standards have been identified]

1. Performance Security in the amount of 20% of the Construction Security.
2. Performance Security can be drawn on should the Performance Standards not be met, if remedial action becomes necessary.
3. The Performance Security in the form of an irrevocable standby letter of credit or a cashier's check.
  - a. LOC: issued for a period of at least one year, and provide that the expiration date will be automatically extended for at least one year on each successive expiration date unless, until extension is no longer necessary.
  - b. Beneficiary: a third party who is subject to approval by the SFWO.
  - c. Language in a draft letter of credit is subject to SFWO approval.

## Site Management

Interim Management Plan

1. The Interim Management Plan should identify the short-term management, monitoring, and reporting activities to be conducted from the time construction ends until the Endowment Fund has been fully funded for three years and all the Performance Standards in the Development Plan have been met. This may be the same as the Long-term Management Plan.

Interim Management Security Analysis and Schedule

*The purpose of the Interim Management Security is to allow the endowment to grow for at least three years without any disbursements, and is a safeguard to ensure that there will be enough funds in the endowment to pay for future management costs. The period can be longer than three years; a 5 year period is recommended by many land trusts.*

1. Interim Management Security (in the form of a standby letter of credit) in the amount equal to the estimated cost to implement the Interim Management Plan during the first three years of the Interim Management Period, as set for in the Interim Management Security Analysis and Schedule.
2. The Interim Management Security Analysis and Schedule should be in the form of a table and/or spreadsheet that shows all of the tasks (management, monitoring, reporting), task descriptions, labor (hours), cost per unit, cost frequency, timing or scheduling of the tasks, the total annual funding necessary for each task, and any associated assumptions for each task required by the Interim Management Plan. The total annual expenses should include administration and contingency costs.
3. The Interim Management Security:

- a. Held by a qualified, non-profit organization or government agency, subject to SFWO approval [see requirements under CE above], and
- b. Held according to minimum standards for assuring maximum success in earning potential, and will include assurances to safeguard against loss of principle.
- c. Instructions for disbursements or releases from the fund must be outlined in the Endowment Management Agreement/Trust Agreement/Declaration of Trust.

### Long-Term Management Plan (LTMP)

1. The LTMP template identifies the long-term management, monitoring and reporting activities to be conducted.
2. The LTMP should include at minimum:
  - a. Purpose of the Project and purpose of the LTMP;
  - b. A baseline description of the setting, location, history, and types of land use activities, geology, soils, climate, hydrology, habitats present (once project meets Performance Standards), and species descriptions;
  - c. Overall management, maintenance and monitoring goals; specific tasks and timing of implementation; and discussion of any constraints, which may affect goals;
  - d. The Endowment Fund Analysis and Schedule (see below);
  - e. Discussion of Adaptive Management actions for reasonably foreseeable events and possible thresholds for evaluating and implementing Adaptive Management;
  - f. Rights of access to the Property and prohibited uses of the Property as provided in the CE; and
  - g. Procedures for Property transfer, land manager replacement, amendments, and notices.
3. The LTMP must be incorporated by reference in the CE.
4. The LTMP is considered a living document and may be revised as necessary upon agreement of the land manager, easement holder, and SFWO.

### Endowment Fund Analysis and Schedule

1. Can use a PAR or PAR-like analysis and must be based upon the final LTMP, subject to SFWO approval.
  - The analysis should be developed with input by the land manager and conservation easement holder.
2. The analysis and schedule should be in the form of a table and/or spreadsheet that shows, at a minimum:
  - all of the tasks (management, monitoring, reporting)
  - task descriptions, with tasks numbers cross-referenced in management plan(s)
  - labor (hours)
  - materials
  - cost per unit (hr., linear ft., each, etc.).
  - cost frequency
  - timing or scheduling of the tasks,
  - the total annual funding necessary for each task, and
  - the assumptions required for each task by the Management Plan.
3. The total annual expenses should include administration and contingency costs (contingency can be included on each line item – identify the percentage). Unless there

is a separate endowment for the purpose of monitoring and reporting on the CE conditions, then, the analysis should also include costs of

- Monitoring and reporting CE conditions;
  - Defending the CE; and
  - Liability insurance.
4. The Endowment Fund::
- Held by a qualified, SFWO-approved, non-profit organization or government agency [see requirements under CE above],
  - Held according to minimum standards for assuring maximum success in earning potential, and should include assurances for no loss of principle.
  - Disbursements or releases from the fund must be for documented expenditures, as they occur.

### Endowment Funding Agreement

1. This is the agreement between the endowment holder and the Project Applicant, as to how the endowment is to be funded, held and disbursed;
2. USFWS is not signatory to this agreement, but there should be a signature block on the agreement for SFWO to sign “approved as to form”;
3. USFWS has approval authority over the language in the document, and it must state that modifications or transfer of the endowment to another holder are subject to USFWS approval;
4. This agreement can also be called: “Trust Agreement”, “Declaration of Trust”
5. When the CA Dept. of Fish and Wildlife is involved, this is called “Mitigation Agreement”.