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Subject: Willow Rock Energy Storage Center; Docket Number 21-AFC-02; Applicant's Response to CEC Staff's Issues Identification Report and Proposed Schedule; Applicant's Notice Pursuant To 20 CCR § 1716(F) Regarding Staff's Data Requests Set 1

Dear Leonidas Payne:

The California Department of Fish and Wildlife (CDFW) has reviewed the *Applicant's Response to CEC Staff's Issues Identification Report and Proposed Schedule* and the *Applicant's Notice Pursuant To 20 CCR § 1716(F) Regarding Staff's Data Requests Set 1* documents. We appreciate the opportunity to provide comments and recommendations and to coordinate with CEC staff regarding the activities stemming from the Willow Rock Energy Storage Center (WRESC; Project) proposed by Gem A-CAES LLC. The WRESC and related activities may affect California fish and wildlife resources, and CDFW may be required to provide measures to the CEC to incorporate as Conditions of Certification for the Project. We offer our comments as described below as California's Trustee Agency for fish and wildlife.

CDFW is California's Trustee Agency for fish and wildlife resources and holds those resources in trust by statute for all the people of the State (Fish & G. Code, §§ 711.7, subd. (a), 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)).[1] CDFW, in its trustee capacity, has jurisdiction in California over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (Fish & G. Code, § 1802). CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

[1] The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

CDFW has been coordinating with and expects the need to continue its coordination with CEC staff related to its regulatory authority as provided by the Fish and Game Code for the Project. As proposed, the activities associated with Project may be subject to CDFW's lake and streambed alteration regulatory authority (Fish & G. Code, § 1600 et seq.). Likewise, to the extent these activities will result in otherwise prohibited "take" as defined by State law of any species protected under the Fish and Game Code, including under the California Endangered Species Act (CESA) (*Id.*, § 2050 et seq.), related authorization as provided by the Fish and Game Code will be required. (See also *Id.*, §§ 86 (take defined), 2000 (general take prohibition), 2080 (CESA take prohibition), 2085 (candidate species take prohibition).)

Fully Protected Species: CDFW has jurisdiction over species of birds, mammals, amphibians, reptiles, and fish designated by statute as "fully protected" pursuant to Fish and Game Code sections 3511, 4700, 5050, and 5515. Take of any fully protected species is prohibited and CDFW cannot authorize their incidental take.

Protected Furbearing Mammals: CDFW has jurisdiction over furbearing mammals pursuant to Title 14, California Code of Regulations, section 460, which states "Fisher, marten, river otter, desert kit fox, and red fox may not be taken at any time". This regulation is not only limited to take as a result of hunting and trapping as stated in the *Applicant's Notice Pursuant To 20 CCR § 1716(F) Regarding Staff's Data Requests Set 1*. It includes all forms of take as defined in Fish and Game Code section 86. CDFW cannot authorize the take of desert kit fox, which is expected with implementation of the proposed project.

Nesting Birds: CDFW has jurisdiction over actions with potential to result in the disturbance or destruction of active nest sites or the unauthorized take of birds. Fish and Game Code sections that protect birds, their eggs, and nests include 3503 (regarding unlawful take, possession or needless destruction of the nest or eggs of any bird), 3503.5 (regarding the take, possession or destruction of any birds-of-prey or their nests or eggs), and 3513 (regarding unlawful take of any migratory nongame bird).

Unlisted Species: Species of plants and animals need not be officially listed as Endangered, Rare, or Threatened (E, R, or T) on any State or Federal list to be considered E, R, or T under the California Environmental Quality Act (CEQA). If a species can be shown to meet the criteria for E, R, or T, as specified in the CEQA Guidelines section 15380, CDFW recommends it be fully considered in the environmental analysis for the Project. CDFW is a trustee of all fish and wildlife resources, not only those listed as E, R, or T and has provided direction in this role for all species potentially impacted with the implementation of the proposed project.

Water Pollution: Pursuant to Fish and Game Code section 5650, it is unlawful to deposit in, permit to pass into, or place where it can pass into "Waters of the State" any substance or material deleterious to fish, plant life, or bird life, including non-native

species. It is possible that without mitigation measures, implementation of the subsequent development could result in pollution of Waters of the State from storm water runoff or development-related erosion. Potential impacts to the wildlife resources that utilize these watercourses include, but are not limited to, the following: increased sediment input from vegetation removal and ground disturbance causing increased erosion; toxic runoff associated with oil and gas development; temporal or permanent loss of wildlife habitat; and/or impairment of wildlife movement along riparian corridors. The Regional Water Quality Control Board also has jurisdiction regarding discharge and pollution to Waters of the State.

PROJECT DESCRIPTION SUMMARY

Applicant: GEM A-CAES LLC (Gem LLC), a wholly owned subsidiary of Hydrostor, Inc.

Objective: The Applicant proposes to construct, own, and operate the 500-megawatt (MW) WRESC, an Advanced Compressed Air Energy Storage (A-CAES) facility, in Kern County, California. The WRESC will deploy proprietary Hydrostor technology consisting of five (5) 100 MW all-electric air compressor and associated power turbine trains, underground compressed air storage cavern, miscellaneous aboveground support facilities, and a 10.9-mile interconnection to the existing Southern California Edison Whirlwind Substation. WRESC would compress air into the purpose-built underground cavern, and heat from the air compression process would be captured and stored in an aboveground thermal storage system. The compressed air would then be stored in the cavern under the pressure of a hydrostatic head created by an onsite, aboveground water reservoir. When electricity is needed by the grid, the compressed air would be released using the hydrostatic head pressure, re-heated using the stored thermal energy, and directed through the aboveground turbine-generators to produce electricity.

Location: The project will be located on an approximately 71-acre project site consisting of two adjacent parcels, an approximately 10-acre parcel with Assessor's Parcel Number (APN) 315-081-01 and an approximately 61-acre parcel with APN 315-08-09, the latter located at 8684 Sweetser Road in unincorporated Kern County (County), approximately 1 mile northeast of the community of Willow Springs and 7 miles west of Rosamond, California. The site is bounded on the north by Sweetser Road and on the west by Tehachapi Willow Springs Rd (90th Street West) and is approximately 0.25-mile northwest of Willow Springs Butte within Section 8 of Township 9 North, Range 13 West.

General Comments and Recommendations:

CDFW offers the following comments and recommendations to assist the CEC in response to the *Applicant's Response to CEC Staff's Issues Identification Report and Proposed Schedule* and *Applicant's Notice Pursuant To 20 C.C.R. § 1716(F) Regarding*

Staff's Data Requests Set 1. These comments are also offered to assist the CEC in adequately identifying and/or mitigating the significant, or potentially significant, direct, indirect, and cumulative impacts on fish and wildlife (biological) resources.

Lake and Streambed Alteration Authority

There are numerous streams within the Project site and vicinity. Fish and Game Code section 1600 et seq. requires an entity to notify CDFW prior to commencing any activity that may (a) substantially divert or obstruct the natural flow of any river, stream, or lake; (b) substantially change or use any material from the bed, bank, or channel of any river, stream, or lake (including the removal of riparian vegetation); (c) deposit debris, waste or other materials that could pass into any river, stream, or lake. "Any river, stream, or lake" includes those that are ephemeral or intermittent and regardless of whether they are perennial or flow episodically and includes activities that occur within the lateral-most extent of flow at the streams' highest flow levels. Work within stream channels has the potential to result in substantial diversion or obstruction of natural flows; substantial change or use of material from the bed, bank, or channel (including removal of riparian vegetation); deposition of debris, waste, sediment, toxic runoff, or other materials into water causing water pollution and degradation of water quality.

Lake or Streambed Alteration

The proposed WRESC activities may occur within the bed and bank of streams within the Project site. Activities within these features are subject to CDFW's LSA regulatory authority. Construction activities within these features have the potential to impact downstream waters. Although some of the features within the Project area may be only intermittently wetted, studies have shown that biodiversity and habitat values of dryland streams are considerably higher than in the adjacent uplands, transporting and delivering water, and providing linear habitat connectivity and refuge, and concentrating seeds, organic matter and sediment. Moreover, the ecological viability of the dryland environment depends on the sustainability of the physical/hydrological processes that form and maintain episodic streams and the habitat they support (Brady and Vyverberg 2013).

Streams function in the collection of water from rainfall, storage of various amounts of water and sediment, discharge of water as runoff and the transport of sediment, and they provide diverse sites and pathways in which chemical reactions take place and provide habitat and movement corridors for fish and wildlife species. Disruption of stream systems such as these can have significant physical, biological, and chemical impacts that can extend into the adjacent uplands (indirect impacts) adversely effecting not only the fish and wildlife species dependent on the stream itself, but also the flora and fauna dependent on the adjacent upland habitat for feeding, reproduction, and shelter. Water diversions can impact flow regimes. Prolonged low flows can cause streams to become degraded and cause channels to become disconnected from floodplains (Poff et al. 1997).

To evaluate potential impacts to streams associated with Project activities, CDFW recommends conducting the following evaluation of project areas and including the following in subsequent environmental analysis for this Project. Project activities that have the potential to change the bed, bank, and channel of streams on the proposed project site, including but not requiring alterations to riparian vegetation, are subject to CDFW's regulatory authority pursuant to Fish and Game Code section 1600 et seq.; therefore, consultation with CEC staff will be warranted to include appropriate avoidance, minimization, and mitigation measures that are sufficiently protective to fish and/or wildlife resources that may be substantially adversely affected by the Project. In order to assess the Project impacts on the streams within the Project vicinity, CDFW needs a detailed project description and accurate quantification of the impacts to the streams and those resources that occupy the Project area and the immediate adjacent habitat.

Items such as those included in Data Requests 20-24 by CEC staff (i.e., stream delineations and mapping, hydrologic analysis report, grading plan, a post-construction drainage plan, construction designs, hydraulic study, and/or other documentation that evaluates how modifications to the streams during project construction would affect changes upstream, onsite, and in downstream water and sediment flow patterns) are frequently requested to evaluate whether the Project activities may substantially adversely affect fish and/or wildlife resources in the desert environment and always required when a proposed project may affect identified stream resources on site. To develop appropriate avoidance, minimization, and mitigation measures that are sufficiently protective to those fish and/or wildlife resources, CDFW needs a detailed project description and accurate quantification of the impacts to the streams and those resources that occupy the Project area and the immediate adjacent habitat. The items listed above are critical to evaluate impacts resulting from the Project.

Survey Areas

For taxa that do not have a species-specific survey protocol, CDFW concurs with CEC staff that focused surveys include a 1000-foot radius around the Project site and 500 feet on either side of the linear features. Given the potentially significant indirect impacts to biological resources resulting from this project (noise, vibration, lighting, increased traffic, etc.), CDFW agrees that focused surveys at this distance from the Project site are needed to adequately assess and analyze these impacts to biological resources. Surveys for special-status species with potential to occur within the Project vicinity with species-specific protocols should be conducted as specified in the protocol including any distances beyond those stated above.

Artificial Lighting

Installation of outdoor artificial night lighting can disrupt the circadian rhythms of many wildlife species. Many species use photoperiod cues for communication,

determining when to begin foraging, thermoregulation behavior, and migration (Longcore and Rich 2004, Miller 2006, Nightingale et al. 2006, Perry et al. 2008, Stone et al. 2009). Phototaxis, a phenomenon which results in attraction and movement towards light, can disorient, entrap, and temporarily blind wildlife species that experience it (Longcore and Rich 2004). Project activities could result in disruption of wildlife behavior, inadvertent injury, or mortality.

CDFW recommends that the environmental analysis for the Project include an analysis of artificial lighting as it relates to biological resources and incorporate enforceable mitigation measures to decrease the impacts of artificial outdoor lighting on wildlife species. Potentially feasible mitigation measures include: motion sensitive lighting; mounting light fixtures as low as possible to minimize light trespass; use of light fittings that direct and confine the spread of light downward; and use of long-wavelength light sources. In addition, CDFW recommends that lighting is not installed in ecologically sensitive areas (e.g., streams, wetlands, and habitat used by special-status species, such as nesting/roosting sites and riparian corridors) and the use of the white/blue wavelengths of the light spectrum be avoided.

Noise/Vibration

Project activities, as described, are likely to result in a substantial amount of noise and vibration during both construction and operations of the proposed project through road use, power-generating equipment, cavern excavation, use of pumps during compression cycles of air in the excavated cavern during operations, and other project-related activities. This may adversely affect wildlife species in several ways both temporarily and permanently as wildlife responses to noise can occur at exposure levels of only 55-60 decibels (dB) (Barber et al. 2009). Anthropogenic noise can disrupt the communication and mate selection of many wildlife species including frogs, birds, and bats (Sun and Narins 2005, Patricelli and Blickley 2006, Gillam and McCracken 2007, Slabbekoorn and Ripmeester 2008). Noise can also affect predator-prey relationships as many nocturnal animals such as bats and owls primarily use auditory cues (i.e., hearing) to hunt. Additionally, many prey species increase their vigilance behavior when exposed to noise because they need to rely more on visual detection of predators when auditory cues may be masked by noise (Rabin et al. 2006, Quinn et al. 2017). Noise has also been shown to reduce the density of nesting birds (Francis et al. 2009) and cause increased stress that results in decreased immune responses (Kight and Swaddle 2011). These effects from the proposed project may be direct, indirect, and contribute to cumulative impacts to biological resources and must be evaluated. The data requested is necessary to adequately perform these analyses required per CEQA.

CDFW recommends that the environmental analysis for the Project include an analysis of noise and vibration as it relates to biological resources and incorporate enforceable mitigation measures to decrease the impacts of noise and vibration on wildlife species. Potentially feasible mitigation measures include restricting the use

of high-dB equipment to hours least likely to disrupt wildlife (e.g., not at night or in early morning) and the use of noise suppression devices so that sounds generated from any means are below the 55-60 dB range within 50-feet from the source.

Wildlife Movement and Connectivity

The Project area supports significant biological resources and contains habitat connections and supports movement across the broader landscape, sustaining both transitory and permanent wildlife populations. On-site features that contribute to habitat connectivity should be evaluated and maintained. Aspects of the Project that could create physical barriers to wildlife movement, including direct or indirect project-related activities, should be identified, and addressed in the environmental analysis. Indirect impacts from lighting, noise, dust, and increased human activity may displace wildlife in the general Project area.

Biological Direct, Indirect, and Cumulative Impacts

To provide a thorough discussion of direct, indirect, and cumulative impacts expected to adversely affect biological resources, with specific measures to offset such impacts, the following should be addressed in the environmental analysis:

- A discussion of potential adverse impacts from lighting, noise, vibration, human activity, non-native species, and drainage. The latter subject should be included in the items requested above in the Lake and Streambed Alteration Authority section (i.e., Project-related changes on drainage patterns and downstream of the project site; the volume, velocity, and frequency of existing and post-Project surface flows; polluted runoff; soil erosion and/or sedimentation in streams and water bodies; and post-Project fate of runoff from the Project site). Mitigation measures proposed to alleviate such Project impacts should be included in the environmental analysis;
- A discussion should be included in the environmental analysis for the Project regarding indirect Project impacts on biological resources, including resources within nearby public lands, open space, adjacent natural habitats, stream and riparian ecosystems, and any designated and/or proposed or existing reserve lands (e.g., preserve lands associated with an Natural Communities Conservation Plan, Fish & G. Code, § 2800 et. seq.). Impacts on, and maintenance of, wildlife corridor/movement areas, including access to undisturbed habitats in adjacent areas, should be fully evaluated in the environmental analysis;
- An analysis of impacts from land use designations and zoning located nearby or adjacent to natural areas that may inadvertently contribute to wildlife-human interactions. A discussion of possible conflicts and mitigation measures to reduce these conflicts should be included in the environmental analysis; and
- A cumulative effects analysis, as described under CEQA Guidelines section 15130. CDFW recommends that a cumulative impact analysis be

conducted for all biological resources that will either be significantly or potentially significantly impacted by implementation of the project, including those whose impacts are determined to be less than significant with mitigation incorporated or for those resources that are rare or in poor or declining health and will be impacted by the project, even if those impacts are relatively small (i.e., less than significant). Cumulative impacts should be analyzed using an acceptable methodology to evaluate the impacts of past, present, and reasonably foreseeable future projects on resources and should be focused specifically on the resource, not the project. An appropriate resource study area should be identified and utilized for this analysis. CDFW staff are available for consultation in support of cumulative impacts analyses as a trustee agency under CEQA.

Revegetation/Restoration Plan

Any plans developed for restoration and revegetation should be prepared by persons with expertise in Mojave desert ecosystems and native plant restoration techniques. Plans should identify the assumptions used to develop the proposed restoration strategy. Each plan should include, at a minimum: (a) the location of restoration sites and assessment of appropriate reference sites; (b) the plant species to be used, sources of local propagules; (c) a schematic depicting the mitigation area; (d) a local seed, cuttings, and/or planting schedule; (e) a description of the irrigation methodology; (f) measures to control non-native vegetation on-site; (g) specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; and (j) identification of the party responsible for meeting the success criteria and providing for conservation of the mitigation site in perpetuity. Additional components that should be incorporated into the Revegetation and Restoration Plans, respectively, are provided below:

- CDFW recommends that local on-site propagules from the Project area and from the nearby vicinity be collected and used for restoration purposes. On-site seed collection should be initiated to accumulate sufficient propagule material for subsequent use in future years. On-site vegetation mapping at the alliance and/or association level should be used to develop appropriate restoration goals and local plant palettes. Reference areas should be identified to help guide restoration efforts. Specific restoration plans should be developed for various Project components as appropriate
- Restoration objectives should include providing special habitat elements where feasible to benefit key wildlife species. These physical and biological features can include, for example, retention of woody material, logs, snags, rocks, and brush piles.
- Monitoring of restoration areas should extend across a sufficient timeframe to ensure that the new habitat is established, self-sustaining without supplemental watering, and capable of surviving drought.

Compensatory Mitigation

CDFW recommends that the approval for this Project include mitigation measures for adverse Project-related impacts to sensitive plants, animals, and habitats. Mitigation measures should emphasize avoidance and reduction of Project impacts. For unavoidable impacts, on-site habitat restoration or enhancement should be discussed in detail. If on-site mitigation is not feasible or would not be biologically viable and therefore not adequately mitigate the loss of biological functions and values, off-site mitigation at a minimum ratio of 3:1 through occupied habitat acquisition and preservation in perpetuity should be addressed. Areas proposed as mitigation lands should be protected in perpetuity with a conservation easement, financial assurance and dedicated to a qualified entity for long-term management and monitoring. Under Government Code section 65967, the CEC must exercise due diligence in reviewing the qualifications of a governmental entity, special district, or nonprofit organization to effectively manage and steward land, water, or natural resources on mitigation lands it approves.

For proposed preservation and/or restoration, Project approval should include measures to protect the targeted habitat values from direct and indirect negative impacts in perpetuity. The objective should be to offset the Project-induced qualitative and quantitative losses of wildlife habitat values. Issues that should be addressed include (but are not limited to) restrictions on access, proposed land dedications, monitoring and management programs, control of illegal dumping, water pollution, and increased human intrusion. An appropriate non-wasting endowment should be set aside to provide for long-term management of mitigation lands.

Specific Special-Status Species Comments:

CDFW is concerned regarding potential impacts to special-status species, including but not limited to, the State and Federally threatened desert tortoise (*Gopherus agassizii*), the State threatened Swainson's hawk (*Buteo swainsonii*) and Mohave ground squirrel (*Xerospermophilus mohavensis*), the fully protected and State and federally endangered California condor (*Gymnogyps californianus*), the fully protected golden eagle (*Aquila chrysaetos*), American peregrine falcon (*Falco peregrinus anatum*), and white-tailed kite (*Elanus leucurus*), the State candidate for listing western Joshua tree (*Yucca brevifolia*), the protected furbearing mammal desert kit fox (*Vulpes macrotis arsipus*), the State species of special concern (SSC) burrowing owl (*Athene cunicularia*), American badger (*Taxidea taxus*), western mastiff bat (*Eumops perotis californicus*), pallid bat *(Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), spotted bat (*Euderma maculatum*), Tehachapi pocket mouse (*Perognathus alticola inexpectatus*), Tulare grasshopper mouse (*Onychomys torridus tularensis*), LeConte's thrasher (*Toxostoma lecontei*), loggerhead shrike (*Lanius ludovicianus*), long-eared owl (*Asio otus*), mountain plover (*Charadrius montanus*), coast horned lizard (*Phrynosoma blainvillii*), California legless lizard (*Anniella pulchra*), the Watch List (WL) species ferruginous hawk (*Buteo regalis*), California horned lark (*Eremophila alpestris actia*), merlin (*Falco columbarius*),

and prairie falcon (*Falco mexicanus*), the California Terrestrial Invertebrate of Conservation Concern Crotch bumblebee (*Bombus crotchii*), the California Rare Plant Rank (CRPR) 1B.1 Horn's milk-vetch (*Astragalus hornii* var. *hornii*), CRPR 1B.2 alkali mariposa-lily (*Calochortus striatus*), CRPR 1B.2 recurved larkspur (*Delphinium recurvatum*), CRPR 1B.1 Rosamond eriastrum (*Eriastrum rosamondense),* CRPR 2B.2 sagebrush loeflingia (*Loeflingia squarrosa* var. *artemisiarum*), CRPR 1B.3 southern Sierra monardella (*Monardella linoides* ssp. *anemonoides*), CRPR 1B.3 Tehachapi monardella (*Monardella linoides* ssp. *oblonga*), and CRPR 1B.2 Latimer's woodland-gilia (*Saltugilia latimeri*) as well as impacts to birds, other non-listed plants and animals, and streams.

To adequately assess any potential impact to biological resources, focused biological surveys should be conducted by a qualified wildlife biologist and/or botanist during the appropriate survey period(s) in order to determine whether any special-status species may be present within the Project area. Properly conducted biological surveys, and the information assembled from them, are essential to identify any mitigation, minimization, and avoidance measures and/or the need for additional or protocol-level surveys, and to identify any Project-related impacts under CESA and other species of concern. These resources may need to be evaluated and addressed prior to any approvals that would allow ground-disturbing activities or land use changes.

The lack of a species-specific survey protocol does not exempt focused surveys for a particular species from being conducted. There are several special-status species throughout California for which there is no established protocol. However, CDFW still recommends surveys be conducted by a qualified biologist with experience conducting focused surveys for those species, their requisite habitat features, and species' sign to evaluate potential impacts resulting from ground- and vegetation-disturbance.

Desert Tortoise

CNDDB records show that desert tortoise sightings have occurred near the Project area (CDFW 2021). Based on aerial imagery, the Project site contains annual grasslands and desert scrubs communities which have the potential to support desert tortoise. Therefore, desert tortoise has the potential to occur in the Project area and within the Project site. Potentially significant impacts that may result from Project-related activities include loss of foraging habitat, habitat degradation and fragmentation, burrow destruction, and direct mortality.

Human impacts to desert tortoise include habitat conversion to agriculture and urban lands, degradation of habitat by off-highway vehicles (OHV), intentional killing of tortoises, and killing by cars and OHV (Doak et al. 1994). Habitat conversion to agriculture results in the loss of habitat and may lead to an increase in the predator raven population, drawdown of water table, introduction of pesticides and other toxic chemicals, and the potential introduction of invasive plants (Boarman 2002). Project activities may result in the loss of potential desert tortoise habitat through

conversion, may increase habitat fragmentation, and expand urbanization into the area.

To evaluate potential impacts to desert tortoise associated with Project activities, CDFW recommends conducting the following evaluation of project areas, including the measures in subsequent environmental analysis and that these measures be included in future approval of the Project.

Desert Tortoise Surveys
CDFW advises surveys for desert tortoise be conducted by a qualified wildlife biologist who understands the pre-project survey protocol as outlined in "Preparing for any action that may occur within the range of the desert tortoise (*Gopherus agassizii*)" (USFWS 2019) and has previous experience surveying for desert tortoise. Because these project types (Small Projects and Linear Projects as defined by the USFWS 2019 protocol) are less likely to include the entire home ranges of desert tortoises, the primary purpose will be to provide information on whether desert tortoises are likely to be present based primarily on sign (rather than live animals). This requires that biologists are diligent in observing and describing sign throughout the entire survey area. Using surveyors with appropriate qualifications and that have previous experience surveying for desert tortoise will improve CDFW's confidence in the survey results. Survey results are advised to be submitted to both CDFW and the United States Fish and Wildlife Service (USFWS). Please note desert tortoise surveys are valid for one year and should be conducted within a year of the start of Project implementation. If conducting surveys is not feasible, the applicant can assume presence and acquire a State Incidental Take Permit (ITP) pursuant Fish and Game Code section 2081 subdivision (b) prior to initiating any vegetation- or ground-disturbing activities as described below.

Desert Tortoise Take Authorization
If desert tortoise are found within the Project area during surveys or construction activities, consultation with CDFW is advised to discuss how to implement the Project and avoid take; or if avoidance is not feasible, to acquire a State ITP prior to any vegetation- or ground-disturbing activities. Any take of desert tortoise without obtaining prior take authorization would be a violation of Fish and Game Code section 2080.

Swainson's Hawk (SWHA)

SWHA have been documented and are known to occur within the Project vicinity (CDFW 2022a). Without appropriate avoidance and minimization measures, potential significant impacts that may result from Project activities include nest abandonment, loss of nest trees and habitat, loss of foraging habitat that would reduce nesting success (loss or reduced health or vigor of eggs or young), displacement caused by human activity, and direct mortality. Approval of the Project will lead to direct loss of foraging habitat and ground-disturbing activities that will

involve noise, groundwork, increased traffic, and movement of workers that could have the potential to result in disturbances to foraging behavior, significantly impacting local SWHA.

To evaluate potential impacts to SWHA associated with Project activities, CDFW recommends conducting the following evaluation of project areas, including the measures in subsequent environmental analysis and that these measures be included in future approval of the Project.

SWHA Surveys
To evaluate potential impacts, CDFW recommends that a qualified wildlife biologist conduct surveys for nesting SWHA following the survey methods described in the Swainson's Hawk Survey Protocols, Impact Avoidance, and Minimization Measures for Renewable Energy Projects in the Antelope Valley of Los Angeles and Kern Counties, California (CEC and CDFG 2010) prior to project implementation. In addition to identifying potential SWHA nests, this survey will identify if the Project site has the potential to impact SWHA nests and inform their consideration as SWHA foraging habitat. If conducting surveys is not feasible, the applicant can assume presence and acquire a State ITP pursuant Fish and Game Code section 2081 subdivision (b) prior to initiating any vegetation- or ground-disturbing activities as described below.

SWHA No-disturbance Buffer
If ground-disturbing activities are to take place during the bird breeding season (March 1 through September 15), CDFW recommends additional pre-activity surveys for active nests be conducted by a qualified biologist no more than 10 days prior to the start of Project implementation. CDFW recommends a minimum no-disturbance buffer of ½ mile be delineated around active nests until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival.

SWHA Foraging Habitat
CDFW recommends compensation for the loss of SWHA foraging habitat to reduce impacts to SWHA foraging habitat to less than significant following the guidance provided in the CEC and CDFW's Swainson's Hawk Survey Protocols, Impact Avoidance, and Minimization Measures for Renewable Energy Projects in the Antelope Valley of Los Angeles and Kern Counties, California (2010).

SWHA Take Authorization
Detection of an active SWHA nest warrants consultation with CDFW to discuss how to avoid take, or if avoidance is not feasible, to discuss how to acquire an ITP prior to project implementation, pursuant to Fish and Game Code section 2081 subdivision (b).

Mohave Ground Squirrel (MGS)

CDFW acknowledges that the Project site is near the edge of the known geographic range of MGS (CDFG 2003, CDFW 2019a), however, after reviewing aerial imagery, the Project site appears to contain suitable habitat for MGS (i.e., desert shrub habitat) (CDFW 2019b). The Project can result in the loss of MGS habitat through removal of vegetation and removal, or erosion of soils used for burrows. Off-road travel, drilling associated with mining exploration, and access road construction can also result in impacts to habitat (CDFW 2019b). Without appropriate avoidance and minimization measure for MGS, potential significant impacts associated with the Project's construction include burrow collapse, inadvertent entrapment, reduced reproductive success, and mortality of individuals.

Major threats to MGS are drought, habitat destruction, habitat fragmentation, and habitat degradation (Gustafson 1993, CDFW 2019b). MGS is restricted to a small geographic range and the greatest habitat loss has occurred near desert towns (Gustafson 1993). Natural cycling is anticipated in MGS populations therefore the true indicators of the status of the species are the quantity, pattern of distribution, and quality of habitat (Gustafson 1993, CDFW 2019b). Project activities may result in the loss of potential MGS habitat through conversion, may increase habitat fragmentation, and expand urbanization into the area.

To evaluate potential impacts to MGS associated with Project activities, CDFW recommends conducting the following evaluation of project areas, including the measures in subsequent environmental analysis and that these measures be included in future approval of the Project.

MGS Surveys

CDFW recommends that a qualified biologist, with appropriate permits, conduct protocol surveys for MGS following the methods described in the "Mohave Ground Squirrel Survey Guidelines" (CDFG 2010) during the appropriate survey season prior to Project implementation. Survey methods include trapping by a qualified biologist up to three times per trapping season. CDFW *may* consider a hybrid survey methodology incorporating camera trapping into the standard survey methodology described in the CDFW 2010 Mohave Ground Squirrel Survey Guidelines for increased detectability at the Project site; however, CDFW will need to review and approve any hybrid (camera/live-trapping) survey methodology prior to conducting the survey so CDFW can concur with the results.

Results of the MGS surveys are advised to be submitted to the CDFW. Please note, MGS surveys are only valid for one year and should be conducted within a year of the start of ground-disturbing activities. If conducting surveys is not feasible, the applicant can assume presence and acquire a State ITP pursuant Fish and Game Code section 2081 subdivision (b) prior to initiating any vegetation- or ground-disturbing activities as described below.

MGS Avoidance

If protocol surveys will not be conducted or if surveys detect MGS, in order to implement full avoidance for MGS, CDFW recommends a 50-foot no disturbance buffer be employed around all burrows that could be used by MGS and that all suitable burrows and burrow complexes maintain habitat connectivity with suitable habitat features outside the Project site.

MGS Take Authorization

If MGS are found within the Project area during protocol surveys, preconstruction surveys, or construction activities, consultation with CDFW is recommended to discuss how to implement the Project and avoid take; or if avoidance is not feasible, to acquire an ITP prior to any ground-disturbing activities, pursuant Fish and Game Code section 2081 subsection (b). Any take of MGS without take authorization would be a violation of Fish and Game Code section 2080.

Fully Protected Raptors

The fully protected California condor, golden eagle, American peregrine falcon, and white-tailed kite have the potential to nest and/or forage in the Project vicinity or along the 10.9-mile powerline interconnection to the existing Southern California Edison Whirlwind Substation (CDFW 2022a). Without appropriate mitigation measures, Project activities conducted within occupied territories have the potential to significantly impact these species. Potentially significant impacts that may result from Project activities include nest abandonment, loss of nest opportunities, and/or loss of foraging habitat that would reduce nesting success (loss or reduced health or vigor of eggs or young), displacement caused by human activity, and direct mortality. The Project will involve noise, ground disturbance, and movement of workers that may occur directly adjacent to habitat features with potential to serve as nest sites have the potential to significantly impact fully protected raptor populations.

To evaluate potential impacts to fully protected raptors associated with Project activities, CDFW recommends conducting the following evaluation of project areas, including the measures in subsequent environmental analysis and that these measures be included in future approval of the Project.

Fully Protected Raptor Habitat Assessment

CDFW recommends that a qualified biologist conduct a habitat assessment in advance of any subsequent environmental analysis to determine if the Project site or its vicinity (within ½ mile) contains suitable habitat features for fully protected raptors.

Fully Protected Raptor Surveys

CDFW recommends that focused surveys be conducted by experienced raptor biologists at the Project site prior to Project implementation. To avoid impacts to these species, CDFW recommends conducting these surveys in accordance with

any appropriate species-specific protocols developed for these species (e.g., USFWS 2010, Driscoll 2010). If Project activities are to take place during the breeding season for these raptors, CDFW recommends that additional pre-activity surveys for active nests be conducted by a qualified biologist no more than 10 days prior to the start of Project activity.

Fully Protected Raptor Avoidance
If a fully protected raptor species is found within ½ mile of the Project site, CDFW recommends that a ½-mile no-disturbance buffer be implemented and that a qualified wildlife biologist be on-site during all Project-related activities. If the ½-mile no-disturbance buffer cannot feasibly be implemented, contacting CDFW to assist with providing and implementing additional avoidance measures is recommended.

Western Joshua Tree

Based upon available aerial photography, western Joshua tree may occur on the Project site. Western Joshua tree is a candidate species pursuant to CESA. During the candidacy period, consistent with CEQA Guidelines section 15380, the status of the western Joshua tree as a candidate species under CESA (Fish & G. Code, § 2050 et seq.) qualifies it as an endangered, rare, or threatened species under CEQA. Project activities have the potential to impact western Joshua tree, including its seed bank. Without appropriate avoidance and minimization measures, potential impacts to western Joshua tree include inability to reproduce and direct mortality.

While climate change poses the greatest threat to western Joshua tree, invasive species and habitat loss from human development and land conversion, as well as increased risk of wildfire and predation are significant contributing factors that collectively threaten the continued viability of this species, all of which may be unintended impacts of the Project. Therefore, the Project has the potential to significantly impact populations of western Joshua tree.

To evaluate potential impacts to western Joshua tree associated with Project activities, CDFW recommends conducting the following evaluation of project areas, including the measures in subsequent environmental analysis and that these measures be included in future approval of the Project.

Western Joshua Tree Survey
CDFW recommends that a qualified botanist identify the number and size class (less than 1-meter in height, 1-meter or greater but less than 4-meters, and 4-meters or greater in height) of all western Joshua trees on and within 290-feet of the Project site and linear features. This information is used to inform the location of no-disturbance buffers, and if necessary, the amount of habitat compensation required to reduce impacts to less than significant.

Western Joshua Tree Avoidance

CDFW recommends a no-disturbance buffer for individual western Joshua trees of 290 feet. A 290-foot buffer is warranted to not only avoid impacts to individual trees, but potential impacts to the seed bank as well. Vander Wall et al. (2006) documented 290 feet as a maximum distance of seeds dispersed carried by rodents. If a 290-foot buffer cannot be maintained, then consultation with CDFW is warranted to determine if the Project can avoid take or if take authorization is necessary as described below.

Western Joshua Take Authorization

As stated above, western Joshua tree appears to occur in the Project area based upon available aerial photography and consultation with CDFW is likely warranted to discuss the need for take authorization. If take cannot be avoided, take authorization would need to occur through issuance of an ITP by CDFW to comply with CESA and/or Fish and Game Code section 1900 and California Code of Regulations, title 14, section 786.9, subdivision (b).

Desert Kit Fox

As mentioned above, desert kit fox is protected under the California Code of Regulations, Title 14, Section 460, which prohibits take of the species for any reason. The proposed Project site is within desert kit fox range and has potential habitat for the species; as such, the Project has the potential to impact this species through direct take and/or destruction of dens. Desert kit fox populations are known to fluctuate over years and a negative finding from biological surveys in any one year does not necessarily depict absence of desert kit fox on a site. It is important to note that desert kit fox may also be attracted to a construction area due to the type and level of activity (pipes, excavation, etc.) and the loose, friable soils that are created as a result of intensive ground disturbance.

Desert Kit Fox Surveys/Avoidance

CDFW recommends that the den surveys and avoidance measures within the USFWS “Standardized recommendations for protection of the San Joaquin kit fox prior to or during ground disturbance” (2011) be followed and that surveys be conducted accordingly prior to commencing any Project-related ground-disturbing activities, including temporary use activities.

If any active or potential desert kit fox dens are found on the Project site during these surveys, consultation with CDFW would be warranted for guidance on take avoidance measures for the desert kit fox. CDFW also recommends that no den excavation occur during the pupping season. Kit fox are known to use multiple dens during this time and vacant dens may be needed when foxes relocate their pups.

Burrowing Owl (BUOW)

BUOW have been documented to occur within the Project vicinity (CDFW 2022a). BUOW inhabit open grasslands and desert scrublands containing small mammal burrows, a requisite habitat feature used by BUOW for nesting and cover. The Project area supports these habitat types and features, therefore, there is potential for BUOW to occur within or colonize the Project area. Potentially significant direct impacts associated with Project construction include burrow collapse, inadvertent entrapment, nest abandonment, reduced reproductive success, reduction in health and vigor of eggs and/or young, and direct mortality of individuals.

BUOW rely on burrow habitat year-round for their survival and reproduction. Habitat loss and degradation are considered the greatest threats to BUOW in California's Central Valley (Gervais et al. 2008). Therefore, subsequent ground-disturbing activities associated with the Project have the potential to significantly impact local BUOW populations. In addition, and as described in CDFW's "Staff Report on Burrowing Owl Mitigation" (CDFG 2012), excluding and/or evicting BUOW from their burrows is considered a potentially significant impact under CEQA.

To evaluate potential impacts to BUOW associated with Project activities, CDFW recommends conducting the following evaluation of project areas, including the measures in subsequent environmental analysis and that these measures be included in future approval of the Project.

BUOW Surveys
CDFW recommends assessing presence/absence of BUOW by having a qualified biologist conduct surveys following the California Burrowing Owl Consortium's (CBOC) "Burrowing Owl Survey Protocol and Mitigation Guidelines" (CBOC 1993) and CDFW's "Staff Report on Burrowing Owl Mitigation" (CDFG 2012). Specifically, CBOC and CDFW's Staff Report suggest three or more surveillance surveys conducted during daylight with each visit occurring at least three weeks apart during the peak breeding season (April 15 to July 15), when BUOW are most detectable. In addition, CDFW advises that surveys include a 500-foot buffer around the project area.

BUOW Avoidance
Should a BUOW be detected, CDFW recommends no-disturbance buffers, as outlined in the "Staff Report on Burrowing Owl Mitigation" (CDFG 2012), be implemented prior to and during any ground-disturbing activities. Specifically, CDFW's Staff Report recommends that impacts to occupied burrows be avoided in accordance with the following table unless a qualified biologist approved by CDFW verifies through non-invasive methods that either: 1) the birds have not begun egg laying and incubation; or 2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.

Location	Time of Year	Level of Disturbance		
		Low	Med	High
Nesting sites	April 1-Aug 15	200 m*	500 m	500 m
Nesting sites	Aug 16-Oct 15	200 m	200 m	500 m
Nesting sites	Oct 16-Mar 31	50 m	100 m	500 m

* meters (m)

BUOW Passive Relocation and Mitigation

If BUOW are found within these recommended buffers and avoidance is not possible, it is important to note that according to the Staff Report (CDFG 2012), exclusion is not a take avoidance, minimization, or mitigation method and is considered a potentially significant impact under CEQA. However, if necessary, CDFW recommends that burrow exclusion be conducted by qualified biologists and only during the non-breeding season, before breeding behavior is exhibited and after the burrow is confirmed empty through non-invasive methods, such as surveillance. CDFW recommends replacement of occupied burrows with artificial burrows at a ratio of 1 burrow collapsed to 3 artificial burrows constructed (3:1) as mitigation for the potentially significant impact of evicting BUOW. Because BUOW may attempt to colonize or re-colonize an area that will be impacted, CDFW recommends ongoing surveillance at a rate that is sufficient to detect BUOW if they return.

American Badger

American badger are known to occur in the Project vicinity (CDFW 2022a). Badgers occupy sparsely vegetated land cover with dry, friable soils to excavate dens, which they use for cover, and that support fossorial rodent prey populations (i.e., ground squirrels, pocket gophers, etc.) (Zeiner et al. 1990). The Project site may support these requisite habitat features. Therefore, the Project has the potential to impact American badger. Without appropriate avoidance and minimization measures for American badger, potentially significant impacts associated with ground disturbance include direct mortality and natal den abandonment, which may result in reduced health or vigor of young. Habitat loss is a primary threat to American badger (Gittleman et al. 2001). As a result, ground-disturbing activities have the potential to significantly impact local populations of American badger.

To evaluate potential impacts to American badger associated with Project activities, CDFW recommends conducting the following evaluation of project areas, including the measures in subsequent environmental analysis and that these measures be included in future approval of the Project.

American Badger Surveys

If suitable habitat is present, CDFW recommends that a qualified biologist conduct focused surveys for American badger and their requisite habitat features (dens) to evaluate potential impacts resulting from ground- and vegetation-disturbance.

American Badger Avoidance
Avoidance whenever possible is encouraged via delineation and observation of a 50-foot no-disturbance buffer around occupied dens and a 250-foot no-disturbance buffer around natal dens until it is determined through non-invasive means that individuals occupying the den have dispersed.

Special-Status Plant Species

Plants listed pursuant to the federal Endangered Species Act, CESA, the Native Plant Protection Act, and the California Desert Native Plants Act as well as the California Rare Plant Rank (CRPR) species listed above may also occur in the Project area. Without appropriate avoidance and minimization measures for special-status plant species, potential significant impacts associated with subsequent construction include loss of habitat, loss or reduction of productivity, and direct mortality. Special-status plant species are threatened by habitat loss, development, vehicles, foot traffic, recreational activities, grazing, invasive, non-native plants, herbicides, and road creation and maintenance (CNPS 2022). Many of these threats have the potential to occur as a result of the Project activities.

To evaluate potential impacts to special-status plant species associated with Project activities, CDFW recommends conducting the following evaluation of project areas, including the measures in subsequent environmental analysis and that these measures be included in future approval of the Project.

Special-Status Plant Habitat Assessment
CDFW recommends that a qualified botanist conduct a habitat assessment in advance of any subsequent environmental analysis to determine if individual Project sites or their immediate vicinity contain suitable habitat for special-status plant species.

Focused Botanical Surveys
CDFW recommends that the Project site(s) be surveyed for special-status plants by a qualified botanist following the “Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities” (CDFW 2018). This protocol, which is intended to maximize detectability, includes the identification of reference populations to facilitate the likelihood of field investigations occurring during the appropriate floristic period.

Special Status Plant Avoidance
CDFW recommends special-status plant species be avoided whenever possible by delineating and observing a no-disturbance buffer of at least 50 feet from the outer edge of the plant population(s) or specific habitat type(s) required by special-status plant species. If buffers cannot be maintained, then consultation with CDFW is warranted to determine appropriate minimization and mitigation measures for impacts to special-status plant species.

State-listed Plant Take Authorization
If a plant species listed pursuant to CESA or the Native Plant Protection Act is identified during botanical surveys, consultation with CDFW is warranted to determine if the Project can avoid take. If take cannot be avoided, take authorization prior to any ground-disturbing activities may be warranted. Take authorization would occur through issuance of an ITP by CDFW, pursuant to Fish and Game Code section 2081 subdivision (b).

Crotch Bumble Bee (CBB)

CBB is a California terrestrial invertebrate of conservation priority, so it should be treated as an endangered, rare, or threatened species consistent with CEQA Guidelines, section 15380 and should be evaluated within the Project area. There are a number of recent observations surrounding the Project area (CAS 2022, Xerces et al. 2022) and the site contains suitable CBB habitat, i.e., areas of grasslands and scrub that contain requisite habitat elements, such as small mammal burrows and bunch/thatched grasses. CBB primarily nest in late February through late October underground in abandoned small mammal burrows but may also nest under perennial bunch grasses or thatched annual grasses, under brush piles, in old bird nests, and in dead trees or hollow logs. Overwintering sites utilized by CBB mated queens from October to February include soft, disturbed soil, or under leaf litter or other debris.

CBB Habitat Assessment
CDFW recommends a qualified biologist conduct a habitat assessment well in advance of project implementation to determine if the Project area or its immediate vicinity contain habitat suitable to support CBB.

CBB Surveys
If suitable CBB habitat is present and may be impacted by project implementation, CDFW recommends a qualified biologist conduct focused surveys for CBB in potential habitat within the Project area between March 1-June 30 for highest detection probability, between the hours of 0800 and 1600 and beginning no earlier than two hours after sunrise and ending at least three hours before sunset. Surveys will take place when temperatures are between 18.3°C and 32.2°C (65°F and 90°F) and will not be conducted during inclement weather conditions.

Surveys should be conducted well in advance of Project implementation to evaluate impacts resulting from potential ground and vegetation-disturbance associated with the Project. During the surveys, the biologist should flag inactive small mammal burrows and other potential nest sites to reduce the risk of take. Inactive small mammal burrows and thatched/bunch grasses should be avoided whenever feasible. If an inactive burrow may be disturbed by project activities, it should be resurveyed for CBB presence within seven (7) days prior to the scheduled disturbance. If CBB is present, the qualified biologist should identify the location of

all nests in or adjacent to the Project site. If nests are identified, CDFW recommends a 30-meter no-disturbance buffer be established around nests to reduce impacts to CBB.

Bats

Native bats are considered non-game mammals and are protected by state law from take and/or harassment (Fish & G. Code, § 4150, CCR § 251.1). Several bat species are also considered SSC, which meet the CEQA definition of rare, threatened, or endangered species (CEQA Guidelines §15065). CDFW considers adverse impacts to an SSC, for the purposes of CEQA, to be significant without mitigation. Mitigation is not just exclusion from maternity roosts, wintering sites, night roosts, mating roosts and foraging sites, but providing similarly functioning habitat to what is impacted.

Bat Surveys

CDFW recommends bat surveys be conducted by a qualified bat specialist to determine baseline conditions within the Project and within at least a 500-foot buffer and analyze the potential significant effects of the proposed Project on the species (CEQA Guidelines §15125). CDFW recommends these surveys include the use of acoustic recognition technology to maximize detection of bat species to minimize impacts to sensitive bat species. The environmental analysis should document the presence of any bats roosting in structures, pipes, and vegetation and include species specific mitigation measures and habitat mitigation to reduce impacts to below a level of significance.

Impacts to Roosting Habitat

To avoid the direct loss of bats that could result from removal of abandoned structures, pipes, vents, trees, or bridge structures that may provide roosting habitat (winter hibernacula, summer, and maternity), CDFW recommends the following steps are implemented:

1) Identify the species of bats present on the site by conducting appropriate surveys for winter roosting/hibernacula, summer roosting/hibernacula, and maternity roosting/hibernacula;
2) Determine how and when these species utilize the site and what specific habitat requirements are necessary (thermal gradients throughout the year, size of crevices, tree types, location of hibernacula/roost [e.g., height, aspect, etc.]);
3) Avoid the areas being utilized by bats for roosting/hibernacula; if avoidance is not feasible, a bat specialist should design alternative habitat that is specific to the species of bat being displaced and develop a relocation plan in coordination with CDFW;
4) The bat specialist should document all demolition monitoring activities and prepare a summary report to the CEC upon completion of tree/rock disturbance

and/or building demolition activities. CDFW requests copies of any reports prepared related to bat surveys (e.g., monitoring, demolition);

5) If confirmed occupied or formerly occupied bat roosting/hibernacula or foraging habitat is destroyed, habitat of comparable size, function, and quality should be created or preserved and maintained in the new bridge, or for bats in trees, at a nearby suitable undisturbed area. The bat habitat (not bat houses) mitigation shall be determined by the bat specialist in consultation and approval by CDFW;
6) A monitoring plan should be prepared and submitted to the CEC and CDFW. The monitoring plan should describe proposed mitigation habitat and include performance standards for the use of replacement roosts/hibernacula by the displaced species, as well as provisions to prevent harassment, predation, and disease of relocated bats; and
7) Annual reports detailing the success of roost replacement and bat relocation should be prepared and submitted to the CEC and the CDFW for five years following relocation or until performance standards are met. Please note, effective October 1, 2018, a Scientific Collecting Permit is required to monitor project impacts on wildlife resources, as required by environmental documents, permits, or other legal authorizations; and, to capture, temporarily possess, and relocate wildlife to avoid harm or mortality in connection with otherwise lawful activities (Cal. Code Regs., tit. 14, § 650). Please visit CDFW's Scientific Collection Permits webpage for information (CDFW 2022b). Pursuant to the California Code of Regulations, title 14, section 650, the qualified biologist must obtain appropriate handling permits to capture, temporarily possess, and relocate wildlife to avoid harm or mortality in connection with Project construction and activities.

Other State Species of Special Concern and Watch List Species

The SSC and WL species listed above can inhabit grassland and desert scrub habitats (Shuford and Gardali 2008, Thomson et al. 2016). All the species mentioned above have potential to occur or have been documented to occur in the vicinity of the Project, which supports requisite habitat elements for these species (CDFW 2022a).

Without appropriate avoidance and minimization measures for these species, potentially significant impacts associated with ground disturbance include nest/den/burrow abandonment, which may result in reduced health or vigor of eggs and/or young, and direct mortality. Habitat loss threatens all of the species mentioned above (Shuford and Gardali 2008, Thomson et al. 2016). As a result, ground-and vegetation-disturbing activities associated with development of the Project have the potential to significantly impact local populations of these species.

To evaluate potential impacts to special-status species associated with Project activities, CDFW recommends conducting the following evaluation of project areas,

including the measures in subsequent environmental analysis and that these measures be included in future approval of the Project.

Habitat Assessment
CDFW recommends that a qualified biologist conduct a habitat assessment in advance of any subsequent environmental analysis to determine if project areas or their immediate vicinity contain suitable habitat for the species mentioned above.

Surveys
If suitable habitat is present, CDFW recommends that a qualified biologist conduct focused surveys for applicable species and their requisite habitat features to evaluate potential impacts resulting from ground- and vegetation-disturbance.

Avoidance
Avoidance whenever possible is encouraged via delineation and observance a 50-foot no-disturbance buffer around burrows which can provide refuge for small mammals, reptiles, and amphibians, 250 feet around nests of special-status passerine bird species, and 500 feet around nests of special-status raptor bird species.

Nesting birds

CDFW encourages that Project implementation occur during the bird non-nesting season; however, if ground-disturbing or vegetation-disturbing activities must occur during the breeding season (February through mid-September), the Project applicant is responsible for ensuring that implementation of the Project does not result in violation of the Migratory Bird Treaty Act or relevant Fish and Game Codes as referenced above.

To evaluate Project-related impacts on nesting birds, CDFW recommends that a qualified wildlife biologist conduct pre-activity surveys for active nests no more than 10 days prior to the start of ground disturbance to maximize the probability that nests that could potentially be impacted are detected. CDFW also recommends that surveys cover a sufficient area around the work site to identify nests and determine their status. A sufficient area means any area potentially affected by the Project. In addition to direct impacts (i.e., nest destruction), noise, vibration, odors, and movement of workers or equipment could also affect nests. Prior to initiation of construction activities, CDFW recommends a qualified biologist conduct a survey to establish a behavioral baseline of all identified nests. Once construction begins, CDFW recommends a qualified biologist continuously monitor nests to detect behavioral changes resulting from the Project. If behavioral changes occur, CDFW recommends halting the work causing that change and consulting with CDFW for additional avoidance and minimization measures.

If continuous monitoring of identified nests by a qualified wildlife biologist is not feasible, CDFW recommends a minimum 250-foot no-disturbance buffer around active nests of non-listed bird species and a 500-foot no-disturbance buffer around active nests of non-listed raptors. These buffers are advised to remain in place until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival. Variance from these no-disturbance buffers is possible when there is compelling biological or ecological reason to do so, such as when the construction area would be concealed from a nest site by topography. CDFW recommends that a qualified wildlife biologist advise and support any variance from these buffers and notify CDFW in advance of implementing a variance.

CDFW appreciates the opportunity to provide comments and recommendations to assist the CEC in identifying and mitigating the impacts on biological resources. More information on survey and monitoring protocols for sensitive species can be found at CDFW's website (https://www.wildlife.ca.gov/Conservation/Survey-Protocols). If you have any questions, please contact Sarah Bahm, Senior Environmental Scientist (Specialist), at the address provided on the letterhead, by electronic mail at Sarah.Bahm@wildlife.ca.gov.

Sincerely,

DocuSigned by:
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