



State of California – Natural Resources Agency
 DEPARTMENT OF FISH AND WILDLIFE
 South Coast Region
 3883 Ruffin Road
 San Diego, CA 92123
 (858) 467-4201
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director



Governor's Office of Planning & Research

Mar 11 2021

March 11, 2021

STATE CLEARINGHOUSE

Mr. Dwayne Chisam
 Antelope Valley-East Kern Water Agency
 6500 West Avenue N
 Palmdale, CA 93551
DChisam@avek.org

Subject: Eastside Water Bank Expansion Project, Mitigated Negative Declaration, SCH #2021020195, Los Angeles County

Dear Mr. Chisam,

The California Department of Fish and Wildlife (CDFW) has reviewed the Mitigated Negative Declaration (MND) from the Antelope Valley-East Kern Water Agency (AVEK; Lead Agency) for the Eastside Water Bank Expansion Project (Project). Review of the MND included review of *Appendix B Biological Resources Report (BRR)*.

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW's Role

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, subdivision (a) & 1802; Pub. Resources Code, § 21070; California Environmental Quality Act (CEQA) Guidelines, § 15386, subdivision (a)]. CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (Id., § 1802). Similarly, for purposes of CEQA, 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 State fish and wildlife resources.

CDFW is also submitting comments as a Responsible Agency under CEQA (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code, including lake and streambed alteration regulatory authority (Fish & G. Code, § 1600 *et seq.*). Likewise, to the extent implementation of the Project as proposed may result in "take", as defined by State law, of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 *et seq.*), or CESA-listed rare plant pursuant to the Native Plant Protection Act (NPPA; Fish & G. Code, §1900 *et seq.*), CDFW recommends the Project proponent obtain appropriate authorization under the Fish and Game Code.

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Project Description and Summary

Objective: AVEK is proposing to expand the existing Eastside Water Bank facility to include three recharge basins east of the existing recharge ponds, three 18-inch turnout pipes, and a single 24-inch delivery pipeline. Specifically, the three recharge basins would be located on a 160-acre parcel east of the existing recharge ponds. In all, the three basins would encompass 74 acres. Operation of the Project would involve the storing of surplus State Water Project's raw water, which would be recharged into local groundwater. Recharge is estimated to occur at a rate of 8,900-acre feet (AF) in 8 months. Excavations would be required to create the basins; excavated material would be used as fill material to construct the berms. A new 24-inch delivery pipeline would accommodate gravity flow to the new basins.

The new 24-inch delivery pipeline would connect to the existing 24-inch pipeline at the existing operation and control building located south of the existing recharge ponds. The new pipeline would exit the building in the south and traverse eastward, paralleling East Avenue U towards the new recharge basins. Individual inlets to each of the three recharge basins would be through 18-inch pipes that connect to the 24-inch delivery pipeline. Access to the new facilities would be provided from East Avenue U via a 20-foot-wide road that would encircle the recharge basins and connect to the existing road that provides access to the Eastside Water Bank facilities.

Location: The approximately 160-acre site is in the Antelope Valley region of unincorporated Los Angeles County, California. It is between the communities of Pearblossom and Littlerock, east of the City of Palmdale, and north of State Route (SR) 138. Locally, the Project site is north of East Avenue U, south of East Avenue T8, east of the existing Eastside Water Bank facility, and west of 106th Street East.

Comments and Recommendations

CDFW offers the comments and recommendations below to assist AVEK in adequately identifying, avoiding, and/or mitigating the Project's significant, or potentially significant, direct, and indirect impacts on fish and wildlife (biological) resources. CDFW recommends the measures or revisions below be included in a science-based monitoring program that contains adaptive management strategies as part of the Project's CEQA mitigation, monitoring and reporting program (Pub. Resources Code, § 21081.6; CEQA Guidelines, § 15097).

Specific Comments

Comment #1: Impacts to Western Joshua Tree

Issue: The Project would result in "take" or adverse impacts to western Joshua trees (*Yucca brevifolia*), a CESA-listed candidate species.

Specific impacts: The Project as proposed would "result in impacts to approximately 79 Joshua trees as part of the disturbance of the 74 acres that encompass the area of permanent impact for the construction of the recharge basis and associate maintenance roads." Additionally, the Project could impact the seed bank and the yucca moth (*Tegeticula synthetica*).

Why impacts would occur: The Project would remove western Joshua trees scattered through the Project site. The Project site may also impact Joshua tree seeds buried by abiotic processes

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and seed caches made by rodents. Western Joshua trees could be permanently extirpated from the Project site. Local extirpation of western Joshua trees may also occur in the absence of a seed source that could be wind or rodent-dispersed to adjacent areas. Lastly, the Project may disturb soils that could support the yucca moth's pupal stage. After feeding on fruits, yucca moth caterpillars drop onto the soil and retreat to pupate underground (Baker 1986; Bogler 1995). The yucca moth is the sole pollinator of western Joshua trees. Fruit and seed production of western Joshua trees fluctuate yearly depending on factors that include availability of pollinators (Sirchia et al. 2018). Regional collapses of yucca moth populations have led to complete failure of fruit production in the closely related banana yucca (*Y. baccatta*) in the Mojave Desert (St. Clair and Hoines 2018).

Evidence impacts would be significant: The western Joshua tree is a geographically and morphologically distinct species from the eastern Joshua tree (*Y. jaegeriana*) (Sirchia et al. 2018). The western Joshua tree has specific habitat requirements, which in turn restricts the range of the species (Center for Biological Diversity 2019). Currently, western Joshua trees are found in Joshua Tree National Park; northern slopes of the San Bernardino and San Gabriel Mountains; Antelope Valley; eastern flanks of the southern Sierra Nevada mountains; and the edges of Death Valley National Park (Center for Biological Diversity 2019). Recent studies have indicated that the species' range is contracting at lower elevations; recruitment is limited; and mortality is increasing. These trends are driven by the collective pressures of habitat loss; increased fire frequency and intensity; and poorly regulated ground disturbing activities; and climate change (Center for Biological Diversity 2019). One-third of suitable habitat for the western Joshua tree in California may be lost due to development over the coming decades, including over 40 percent of habitat in the species' southern California region. At this rate, western Joshua tree may be extirpated from all or most of California by the end of the century (Center for Biological Diversity 2019).

On November 1, 2019, CDFW accepted a petition for western Joshua tree as a threatened species for listing under the CESA (CDFW 2020a). CDFW determined that listing "may be warranted" and advancing the species to the candidacy stage of the CESA listing process (CDFW 2020a). On September 22, 2020, the California Fish and Game Commission determined that listing western Joshua tree as threatened under CESA may be warranted (CDFW 2020b). As a CESA candidate species, western Joshua tree is granted full protection of a threatened species under CESA. Any activity that results in the removal of a western Joshua tree, or any part thereof, or impacts the seedbank surrounding one or more western Joshua trees may result in take of the species which is prohibited by State law unless otherwise authorized.

Recommended Potentially Feasible Mitigation Measure(s)

Mitigation Measure #1: If "take" or adverse impacts to western Joshua trees cannot be avoided during Project activities or over the life of the Project, AVEK must consult CDFW to determine if a CESA Incidental Take Permit (ITP) is required.

CDFW considers adverse impacts to a species protected by CESA to be significant without mitigation under CEQA. As to CESA, take of any endangered, threatened, candidate species that results from the Project is prohibited, except as authorized by State law (Fish & G. Code, §§ 2080, 2085; Cal. Code Regs., tit. 14, § 786.9). Consequently, if the Project, Project construction, or any Project-related activity for the duration of the Project will result in take of a

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species designated as endangered or threatened, or a candidate for listing under CESA, CDFW recommends AVEK seek appropriate take authorization under CESA prior to implementing or continuing the Project. Appropriate authorization from CDFW may include an Incidental Take Permit [Fish & G. Code, §§ 2080.1, 2081, subds. (b) and (c)]. Early consultation is encouraged, as significant modification to the Project and mitigation measures may be required to obtain a CESA permit. AVEK should consult with CDFW to obtain additional Joshua tree survey requirements.

Revisions to the Fish and Game Code, effective January 1998, may require that CDFW issue a separate CEQA document for the issuance of an ITP unless the Project CEQA document addresses all Project impacts to CESA-listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of an ITP. For these reasons, biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA ITP. Accordingly, please see **Mitigation Measures #2 through #5** below. However, it is worth noting that mitigation for impacts to CESA-listed species proposed in a Project's CEQA document may not necessarily satisfy mitigation required to obtain a CESA ITP.

Mitigation Measure #2: CDFW recommends AVEK provide a detailed Joshua tree survey as part of the final environmental document. At a minimum, the survey and subsequent survey report/impact assessment should provide the following:

- 1) A map showing the Project site, all areas subject to Project-related ground-disturbing activities and vegetation removal, and survey area;
- 2) A map showing the location of each individual western Joshua tree;
- 3) A table listing each individual western Joshua tree and the corresponding tree's approximate height and impact (i.e., removed, preserved-in-place, transplanted);
- 4) A map showing the alliance and/or association-based plant community following the [Manual of California Vegetation](#) (MCV), second edition (Sawyer et al. 2009); and,
- 5) Photographs of the Project site, including a minimum two photographs per acre depicting different aspects, and a photograph documenting each western Joshua tree.

Mitigation Measure #3: CDFW recommends AVEK avoid impacts to western Joshua tree to the greatest extent feasible. CDFW recommends AVEK, in consultation with a qualified botanist, develop a robust avoidance plan. An avoidance plan should include robust, enforceable, and feasible measures to protect any western Joshua trees to be preserved on site. At a minimum, a buffer should be established to protect the tree's dripline plus no less than 5 feet from drip line. Temporary fencing, signage, flagging, and other demarcations should be established to prevent impacts to the tree and buffered area for the duration of the Project.

Mitigation Measure #4: CDFW recommends AVEK provide compensatory mitigation for unavoidable Project impacts to western Joshua trees. CDFW recommends AVEK identify an appropriate site to preserve western Joshua trees in perpetuity. The number of trees within the preservation site should range from 2:1 to 10:1 of the number of trees impacted by the Project. Mitigation should be higher if the Project will impact Joshua trees that are reproducing sexually (i.e., Joshua tree woodland with recruitment) or impact Joshua trees at higher elevation areas (>2,400 feet) where Joshua trees are projected to best be able to survive climate change-related impacts. Mitigation should be even higher if impacts satisfying both criteria would occur.

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An appropriate mitigation site should at minimum:

- 1) Have Joshua trees of similar density, abundance and age structure, and include flowering Joshua trees;
- 2) Support Joshua tree woodland habitat of similar native plant species composition, density, structure, and function to habitat that was impacted;
- 3) Support nursery plants for Joshua tree recruits (i.e., seedlings/juveniles); and,
- 4) Not be exposed or have the potential to be exposed to disturbances such as OHV activity, illegal access, and encroachment from pending or future development.

A mitigation plan should provide the location of the mitigation lands and provide an analysis and discussion as to why those mitigation lands are appropriate and adequate to serve as mitigation.

Mitigation Measure #5: The mitigation lands should be protected in perpetuity under a conservation easement dedicated to a local land conservancy or other appropriate entity that has been approved to hold and manage mitigation lands pursuant to Assembly Bill 1094 (2012). Assembly Bill 1094 amended Government Code sections 65965-65968. Under Government Code section 65967(c), the lead agency 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. An appropriate non-wasting endowment should be provided for the long-term management of mitigation lands. A mitigation plan should include measures to protect the targeted habitat values in perpetuity from direct and indirect negative impacts. Issues that should be addressed include, but are not limited to the following: protection from any future development and zone changes; restrictions on access; proposed land dedications; control of illegal dumping; water pollution; and, increased human intrusion. A conservation easement and endowment funds should be fully acquired, established, transferred, or otherwise executed prior to impacts to Joshua trees.

Comment #2: Lake and Streambed Alteration (LSA)

Issue: The Project has not proposed mitigation for impacts to Drainage 2 and historic hydrologic features on site.

Specific impacts: Figure 4 Project Plans in the BRR shows the basins are in very close proximity to Drainage 2. In addition, Figure 3 in the BRR shows potential for historic drainages on site. There does not appear to be mitigation to avoid impacts to the length of Drainage 2 or any other hydrologic feature during construction of the basins and associated road.

Why impacts would occur: The BRR states, "A review of historic aerial (NETRonline 2020) showed that prior to the construction of the California Aqueduct in 1963 the eastern portion of the study area was crossed by several drainages, including Drainage 2. These drainages were cutoff during the construction of the aqueduct or flows were directed into a large culvert, under the aqueduct, from which Drainage 2 flows. The review of the aerial images show that, except for Drainage 2, sign of flow in the other drainages that were cut off by the aqueduct slowly dissipate overtime. These other drainages currently exist on site only as low points in the topography and no longer exhibit signs of flow. These relictual historic features were determined

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to not be jurisdictional as they have not been subject to flow for decades.” While CDFW agrees that a LSA Notification is necessary for the single pipe crossing at Drainage 2, there is concern that impacts to the entire Drainage 2 and historic drainages across the Project site are not considered.

CDFW considers a watercourse to be defined by the area in which water currently flows, or has flowed, over a given course during the historic hydrologic regime. This is where the width of the course can reasonably be identified by physical or biological indicators. CDFW is concerned with the lack of evidence concluding that “These other drainages currently exist on site only as low points in the topography and no longer exhibit signs of flow.” Single stream channel determinations can confound determinations of active versus relict stream processes and forms. In dryland regions, low-flow channels are susceptible to widening and avulsion during moderate to high discharges, re-establishing as smaller channels with declining flows or during subsequent low flow events (CDFG 2010).

The MND also does not provide information to demonstrate that construction activities would avoid impacting the length of Drainage 2 on site, including potential braiding or avulsions associated with the watercourse. The Project proposes to construct retention basins directly adjacent to Drainage 2, and over the relictual historic features. Excavation, road construction, and pipeline installation activity may lead to erosion, subsidence, or alter hydrologic processes. Soil storage and subsequent construction of the berms surrounding the basins immediately adjacent to Drainage 2 could increase erosion, sediment input, and stream bank erosion. Therefore, construction activities could temporarily or permanently alter or impair portions or the length of Drainage 2.

Evidence impacts would be significant: Fish and Game Code section 1602 requires any person, state or local governmental agency, or public utility to notify CDFW prior to beginning any activity that may do one or more of the following:

- Divert or obstruct the natural flow of any river, stream, or lake;
- Change the bed, channel, or bank of any river, stream, or lake;
- Use material from any river, stream, or lake; or,
- Deposit or dispose of material into any river, stream, or lake.

The Project may impact the length of Drainage 2, which absent specific mitigation, could result in substantial erosion or siltation on site.

Recommended Potentially Feasible Mitigation Measure(s):

Mitigation Measure #1: CDFW concurs that the Project applicant (or “entity”) must provide notification to CDFW pursuant to Fish and Game Code, section 1600 *et seq.* Based on this notification and other information, CDFW determines whether an LSA Agreement with the applicant is required prior to conducting the proposed activities. Please visit CDFW’s [Lake and Streambed Alteration Program](#) webpage to for information about LSA Notification and online submittal through the Environmental Permit Information Management System (EPIMS) Permitting Portal (CDFW 2021a).

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Mitigation Measure #2: CDFW recommends the LSA Notification include a hydrology report to evaluate whether the Project would alter, divert, or impair stream flow and alignment of the stream, including the historic hydrologic regime. CDFW requests a hydrological evaluation of the 200, 100, 50, 25, 10, 5, and 2-year frequency storm event for existing and proposed conditions. The hydrology report should include a scour analysis to demonstrate that stream banks, bed, and channel would not erode under different storm events for proposed conditions. The hydrology report should also include an analysis of changes to aggradation on site as well as changes to suspended sediment. The hydrology report should include an analysis as to whether the placement and installation of staging areas, parking areas, and security fencing would impact Drainage 2. Finally, Project-related assessments of whether a stream is active, stable or unstable, should be accompanied by the evidence used to make such determinations in the hydrology report.

Mitigation Measure #3: To avoid impacts to Drainage 2, CDFW recommends AVEK provide an adequate setback of no less than 200 feet measured from the east bank of Drainage 2. Temporary fencing, signage, and other demarcations should be established to prevent any vehicle or foot traffic from entering the protected area for the duration of the Project. Also, CDFW recommends the permanent chain link fencing that will enclose the Project site be installed no less than 200 feet away from the top of the eastern bank of Drainage 2.

Mitigation Measure #4: CDFW recommends AVEK identify compensatory mitigation that is commensurate to the impacts to Drainage 2. Mitigation should occur where a stream supports desert plant communities. Mitigation should occur within the Antelope Valley.

Recommendation: CDFW's issuance of an LSA Agreement for a Project that is subject to CEQA will require CEQA compliance actions by CDFW as a Responsible Agency. As a Responsible Agency, CDFW may consider the CEQA document from AVEK for the Project. To minimize additional requirements by CDFW pursuant to Fish and Game Code section 1600 *et seq.* and/or under CEQA, the CEQA document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring, and reporting commitments for issuance of the LSA Agreement.

To compensate for any on- and off-site impacts to aquatic and riparian resources, additional mitigation conditioned in any LSA Agreement may include the following: erosion and pollution control measures, avoidance of resources, protective measures for downstream resources, on- and/or off-site habitat creation, enhancement or restoration, and/or protection, and management of mitigation lands in perpetuity.

Comment #3: Impacts to Crotch's Bumble Bee

Issue: Suitable habitat for Crotch's bumble bee (*Bombus crotchii*) may be present onsite. Therefore, the Project could impact Crotch's bumble bee.

Specific Impact: Project ground disturbing activities for new building construction may result in crushing or filling of active bee colonies, causing the death or injury of adults, eggs, and larvae. Crotch bumble bee inhabits open grassland and scrub habitats. According to the BRR, big sage brush habitat (*Artemisia tridentata*) is located on the Project site. The Project may impact bee habitat by disturbing vegetation, such as big sage brush, that may support essential foraging habitat. In addition, there was no focused survey that took place for Crotch's bumble bee.

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Why Impact would occur: According to Figure 5 of the BRR, construction of the basins will take place directly adjacent to big sage brush habitat. The mapped Great basin sage brush habitat contains species often associated with Crotch bumble bee, namely big sage brush (Hatfield et al. 2018). They nest underground in abandoned small mammal burrows but may also nest under perennial bunch grasses or thatched annual grasses, underbrush piles, in old bird nests, and in dead trees or hollow logs (Williams et al. 2014; Hatfield et al. 2018). Overwintering sites utilized by Crotch's bumble bee mated queens include soft, disturbed soil (Goulson 2010), or under leaf litter or other debris (Williams et al. 2014). Without species focused level surveys, Crotch bumble bee has the possibility to be missed. Project disturbance activities, including excavation activities, could result in mortality or injury to hibernating bees, as well as temporary or long-term loss of suitable foraging habitats. Construction during the breeding season, in late February through late October, of bees could result in the incidental loss of breeding success or otherwise lead to nest abandonment. In addition, survey efforts that take place outside of flying season when bees are most likely to be detected may lead to false negative results. This may also lead to insufficient mitigation measures to protect bees or colonies that may be found on site.

Evidence Impact would be significant: Crotch's bumble bee has a State ranking of S1/S2. This means that the Crotch's bumble bee is considered critically imperiled or imperiled and is extremely rare (often 5 or fewer populations). Also, Crotch's bumble bee has a very restricted range and steep population declines make the species vulnerable to extirpation from the State (CDFW 2017). Accordingly, Crotch's bumble bee meets the CEQA definition of rare, threatened, or endangered species (CEQA Guidelines, § 15380). Therefore, take of Crotch's bumble bee could require a mandatory finding of significance by AVEK (CEQA Guidelines, § 15065). The Project has potential to substantially reduce or adversely modify habitat, impair the viability of populations, and reduce the number and range of the Crotch's bumble bee.

Recommended Potentially Feasible Mitigation Measure(s)

Mitigation Measure #1: Due to suitable habitat within the Project site, within one year prior to grading and/or vegetation removal, a qualified entomologist familiar with the species behavior and life history should conduct surveys to determine the presence/absence of Crotch's bumble bee. Surveys should be conducted during flying season when the species is most likely to be detected above ground, between March 1 to September 1 (Thorp et al. 1983). Survey results, including negative findings, should be submitted to AVEK prior to implementing Project-related ground-disturbing activities and/or vegetation removal where there may be impacts to Crotch's bumble bee. At minimum, a survey report should provide the following:

- a) A description and map of the survey area, focusing on areas that could provide suitable habitat for Crotch's bumble bee;
- b) Field survey conditions that should include name(s) of qualified entomologist(s) and brief qualifications; date and time of survey; survey duration; general weather conditions; survey goals, and species searched;
- c) Map(s) showing the location of nests/colonies; and,
- d) A description of physical (e.g., soil, moisture, slope) and biological (e.g., plant composition) conditions where each nest/colony is found. A sufficient description of biological conditions, primarily impacted habitat, should include native plant composition (e.g., density, cover, and abundance) within impacted habitat (e.g., species list separated by vegetation class; density, cover, and abundance of each species).

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Mitigation Measure #2: If Crotch's bumble bee is detected, AVEK in consultation with a qualified entomologist should develop a plan to fully avoid impacts to Crotch's bumble bee. The plan should include effective, specific, enforceable, and feasible measures. An avoidance plan should be submitted to AVEK prior to implementing Project-related ground-disturbing activities and/or vegetation removal where there may be impacts to Crotch's bumble bee.

Mitigation Measure #3: If Crotch's bumble bee is detected and if impacts to Crotch's bumble bee cannot be feasibly avoided during Project construction and activities, AVEK/qualified entomologist should coordinate with CDFW to obtain appropriate handling permits for incidental take of Crotch's bumble bee and provide appropriate mitigation for impacts to Crotch's bumble bee habitat. CDFW recommends AVEK mitigate for impacts to Crotch's bumble bee habitat at a ratio comparable to the Project's level of impacts.

Comment #4: Impacts to Sensitive Plant Communities

Issue: The Project may result in impacts to sensitive plant communities.

Specific impacts: The Project activities may result in temporal or permanent loss of sensitive plant communities.

Why impacts would occur: The Project site supports desert plant species that could comprise of other sensitive plant communities. This includes winterfat (*Krascheninnikovia lanata*), which is present in the Project site. Winterfat scrubland has a State rarity rank of S3. In addition, the Project as proposed may impact sensitive plant communities not previously identified.

In addition, the Project has proposed transplanting of natural desert vegetation, namely Joshua tree, golden cholla (*Cylindropuntia echinocarpa*), and chaparral yucca (*Hesperoyucca whipplei*) through mitigation measure BIO-1. However, CDFW generally does not support the use of translocation, transplantation, or salvaging plants as the primary mitigation strategy for unavoidable impacts to plants composing a sensitive plant community. Studies have shown that these efforts are experimental and the outcome unreliable (CNPS 1998; Fahselt 2007; Fiedler 1991; Godefroid 2010). Transplantation to mitigate for impacts to sensitive plant communities may be unsuccessful when mitigation does not account for abiotic and biotic components of a plant community. Abiotic variables such as hydrologic regime, soil type, microclimate, slope, aspect, and elevation determine where a plant community occurs. Plant communities are not merely plants but also consists of pollinators and microscopic biota such as detritivores, cyanobacteria, lichens, algae, and microfungi. Abiotic and biotic variables are rarely considered during mitigation site selection or when developing a conservation plan. This may result in a project never being able to replace the plant community that was impacted. Lastly, transplanting or establishing plants in arid environments could be unsuccessful without sufficient investment to the restoration site (Edwards et al. 2000; Rowe et al. 2020).

Evidence impacts would be significant: CDFW considers plant communities, alliances, and associations with a State ranking of S1, S2, and S3 as sensitive and declining at the local and regional level. An S3 ranking indicates there are 21 to 100 viable occurrences of this community in existence in California, S2 has six to 20 occurrences, and S1 has fewer than six viable occurrences (Sawyer et al. 2009). Additionally, plant communities with an additional rank threat of 0.1 or 0.2 are considered very threatened or threatened, respectively.

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Impacts sensitive plant communities should be considered significant under CEQA unless they are clearly mitigated below a level of significance. Inadequate avoidance, minimization, and mitigation measures for impacts to sensitive plant species will result in the Project continuing to have a substantial adverse direct, indirect, and cumulative effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species by CDFW.

Recommended Potentially Feasible Mitigation Measure(s)

Mitigation Measure #1: CDFW recommends AVEK retain a qualified botanist to map plant communities at the alliance/association level using the [Manual of California Vegetation](#) (Sawyer et al. 2009). Also, CDFW recommends an updated and thorough floristic-based assessment of plant communities, following CDFW's [Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities](#) (CDFW 2018). The MCV alliance or association community names for all plant communities on the Project site should be provided. All plant communities should be mapped regardless of level of disturbance so long as the vegetation community meets the alliance/association criteria.

Mitigation Measure #2: If sensitive plant communities are identified and impacts are unavoidable, AVEK should mitigate for temporal and permanent loss of S1, S2, and S3 sensitive plant communities, including communities with additional threat rank of 0.1 or 0.2. At a minimum, mitigation should be no less than 3:1 in consideration of plant community rarity and potential attrition, uncertainties, and failures associated with transplanting or establishing plant species in arid environments. Mitigation should increase based on the rarity of the plant community impacted. Mitigation should occur within the same watershed.

Recommendation #1: In 2007, the State Legislature required CDFW to develop and maintain a vegetation mapping standard for the state (Fish & G. Code, § 1940). This standard complies with the National Vegetation Classification System which utilizes alliance and association-based classification of unique vegetation stands. CDFW utilizes vegetation descriptions found in the MCV. Through this new vegetation classification system, CDFW only tracks Sensitive Natural Communities and their respective rankings using the MCV Alliance and Association names for vegetation communities.

Recommendation #2: CDFW recommends appending results from plant community mapping to the final environmental document.

Additional Recommendations

Recommendation #1 Nesting Birds: The Project's Mitigation Measure BIO-3, as it is currently proposed, does not include an accurate breeding and nesting season for birds. Primarily, CDFW recommends avoiding any construction activity during nesting season. If not feasible, CDFW recommends modifying Mitigation Measure BIO-3 by expanding the time period for bird nesting from March 1 through August 31 to February 1 through August 31 and maintain January 1 through August 31 for raptors. If the Project occurs between January 1 through August 31, a nesting bird and raptor survey should be conducted prior to any ground-disturbing activities (e.g., staging, mobilization, excavation, grading) as well as prior to any vegetation removal within the Project site.

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It should be noted that the temporary halt of Project activities within nesting buffers during nesting season does not constitute effective mitigation for the purposes of offsetting Project impacts associated with habitat loss. Additional mitigation would be necessary to compensate for the removal of nesting habitat within the Project site based on acreage of impact and vegetation composition. CDFW should be consulted to determine proper mitigation for impacts to occupied habitat depending on the status of the bird species. Mitigation ratios would increase with the occurrence a California Species of Special Concern and would further increase with the occurrence of a CESA-listed species.

Recommendation #2 Move Out of Harm's Way: The proposed Project is anticipated to result in clearing of habitat that support small mammals and reptiles. CDFW recommends a qualified biological monitor be on site during initial ground disturbing activities and vegetation removal. The qualified biological monitor should move wildlife of low mobility out of harm's way to avoid wildlife injury or mortality. Wildlife should be allowed to move away on its own (non-invasive, passive relocation) or relocated to suitable habitat adjacent to the Project area. No wildlife should be enclosed inside any work zone or otherwise impacted by Project-related fencing. Safe and suitable wildlife relocation areas should be identified by a qualified biological monitor prior to ground disturbing activities and vegetation removal.

Recommendation #3 Scientific Collection Permit: The Project may require capture, handling, and relocation of wildlife. Pursuant to the [California Code of Regulations, title 14, section 650](#), AVEK/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. Please visit CDFW's [Scientific Collection Permits](#) webpage for information (CDFW 2021b). An LSA Agreement may provide similar take or possession of species as described in the conditions of the agreement [see Comment #2: Lake and Streambed Alteration (LSA)].

CDFW has the authority to issue permits for the take or possession of wildlife, including mammals; birds, nests, and eggs; reptiles, amphibians, fish, plants; and invertebrates (Fish & G. Code, §§ 1002, 1002.5, 1003). 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).

Recommendation #4 Construction Fencing: CDFW recommends that any fencing used during and after the Project be constructed with materials that are not harmful to wildlife. Prohibited materials should include, but are not limited to, spikes, glass, razor, or barbed wire. Use of chain link and steel stake fence should be avoided or minimized as this type of fencing can injure wildlife or create barriers to wildlife dispersal. All hollow posts and pipes should be capped to prevent wildlife entrapment and mortality. These structures mimic the natural cavities preferred by various bird species and other wildlife for shelter, nesting, and roosting. Raptor's talons can become entrapped within the bolt holes of metal fence stakes resulting in mortality. Metal fence stakes used on the Project site should be plugged with bolts or other plugging materials to avoid this hazard. Fences should be installed in a manner that excludes any wildlife from entering the work zone (i.e., embedded fence such that wildlife cannot enter from under the fence). Fences should not have any slack that may cause wildlife entanglement.

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Recommendation #5 Rodenticides: CDFW recommends that rodenticides and second-generation anticoagulant rodenticides be prohibited both during and over the life of the Project.

Recommendation #6 Data: CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database [i.e., California Natural Diversity Database (CNDDDB)] which may be used to make subsequent or supplemental environmental determinations [Pub. Resources Code, § 21003, subd. (e)]. Accordingly, please report any special status species detected by completing and submitting [CNDDDB Field Survey Forms](#) (CDFW 2021c). AVEK should ensure the data has been properly submitted, with all data fields applicable filled out, prior to finalizing/adopting the environmental document. The data entry should also list pending development as a threat and then update this occurrence after impacts have occurred. AVEK should provide CDFW with confirmation of data submittal.

Recommendation #7 Mitigation and Monitoring Reporting Plan: CDFW recommends AVEK update the Project's proposed Biological Resources Mitigation Measures and condition the environmental document to include mitigation measures recommended in this letter. CDFW provides comments to assist AVEK in developing mitigation measures that are specific, detailed (i.e., responsible party, timing, specific actions, location), and clear in order for a measure to be fully enforceable and implemented successfully via a mitigation monitoring and/or reporting program (CEQA Guidelines, § 15097; Pub. Resources Code, § 21081.6). AVEK is welcome to coordinate with CDFW to further review and refine the Project's mitigation measures. Per Public Resources Code section 21081.6(a)(1), CDFW has provided AVEK with a summary of our suggested mitigation measures and recommendations in the form of an attached Draft Mitigation and Monitoring Reporting Plan (MMRP; Attachment A).

Filing Fees

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by AVEK and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required for the underlying Project approval to be operative, vested, and final (Cal. Code Regs., tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089).

Conclusion

We appreciate the opportunity to comment on the Project to assist AVEK in adequately analyzing and minimizing/mitigating impacts to biological resources. CDFW requests an opportunity to review and comment on any response that AVEK has to our comments and to receive notification of any forthcoming hearing date(s) for the Project [CEQA Guidelines, § 15073(e)]. If you have any questions or comments regarding this letter, please contact Felicia Silva, Environmental Scientist, at Felicia.Silva@wildlife.ca.gov.

Sincerely,

DocuSigned by:

Erinn Wilson-Olgin

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Erinn Wilson-Olgin
Environmental Program Manager I
South Coast Region

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Antelope Valley-East Kern Water Agency
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ec: CDFW
Erinn Wilson-Olgin, Los Alamitos – Erinn.Wilson-Olgin@wildlife.ca.gov
Victoria Tang, Los Alamitos – Victoria.Tang@wildlife.ca.gov
Ruby Kwan-Davis, Los Alamitos – Ruby.Kwan-Davis@wildlife.ca.gov
Andrew Valand, Los Alamitos – Andrew.Valand@wildlife.ca.gov
Felicia Silva, Los Alamitos – Felicia.Silva@wildlife.ca.gov
Frederic Rieman, Fillmore – Frederic.Rieman@wildlife.ca.gov
Susan Howell, San Diego – Susan.Howell@wildlife.ca.gov
CEQA Program Coordinator, Sacramento – CEQACommentLetters@wildlife.ca.gov

State Clearinghouse, Sacramento – State.Clearinghouse@opr.ca.gov

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State of California – Natural Resources Agency
 DEPARTMENT OF FISH AND WILDLIFE
 South Coast Region
 3883 Ruffin Road
 San Diego, CA 92123
 (858) 467-4201
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director



Attachment A: Draft Mitigation and Monitoring Reporting Plan

CDFW recommends the following language to be incorporated into a future environmental document for the Project.

Biological Resources (BIO)			
Mitigation Measure (MM)		Timing	Responsible Party
MM-BIO-1- Impacts to Joshua tree- CESA ITP	AVEK shall notify CDFW for take or adverse impacts to Joshua trees and consult with CDFW to determine if a CESA Incidental take Permit is required. AVEK shall consult with CDFW to obtain additional Joshua tree survey requirements.	Prior to Project construction and activities	Antelope Valley-East Kern Water Agency
MM-BIO-2- Impacts to Joshua tree-survey and impact assessment	<p>AVEK shall provide a detailed Joshua tree survey as part of the final environmental document. At a minimum, the survey and subsequent survey report/impact assessment shall include the following:</p> <ol style="list-style-type: none"> 1) A map showing the Project site, all areas subject to Project-related ground-disturbing activities and vegetation removal, and survey area; 2) A map showing the location of each individual western Joshua tree; 3) A table listing each individual western Joshua tree and the corresponding tree's approximate height and impact (i.e., removed, preserved-in-place); 4) A map showing the alliance and/or association-based plant community following the Manual of California Vegetation second edition; and, Photographs of the Project site, including a minimum two photographs per acre depicting different aspects, and a photograph documenting each western Joshua tree. 	Prior to Project construction and activities	Antelope Valley-East Kern Water Agency

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<p>MM-BIO-3- Impacts to Joshua tree- avoidance plan</p>	<p>AVEK shall avoid impacts to western Joshua tree to the greatest extent feasible. AVEK, in consultation with a qualified botanist, shall develop a robust avoidance plan. An avoidance plan shall include robust, enforceable, and feasible measures to protect any western Joshua trees to be preserved on site. At a minimum, a buffer shall be established to protect the tree's dripline plus no less than 5 feet from drip line. Temporary fencing, signage, flagging, and other demarcations shall be established to prevent impacts to the tree and buffered area for the duration of the Project.</p>	<p>Prior to Project construction and activities</p>	<p>Antelope Valley- East Kern Water Agency</p>
<p>MM-BIO-4- Impacts to Joshua tree- compensatory mitigation</p>	<p>AVEK shall provide compensatory mitigation for unavoidable Project impacts to western Joshua trees. AVEK shall identify an appropriate site within AVEK to preserve western Joshua trees in perpetuity. The number of trees within the preservation site shall range from 2:1 to 10:1 of the number of trees impacted by the Project. Mitigation shall be higher if the Project will impact Joshua trees that are reproducing sexually (i.e., Joshua tree woodland with recruitment) or impact Joshua trees at higher elevation areas (> 2,400 feet) where Joshua trees are projected to best be able to survive climate change-related impacts. Mitigation shall be even higher if impacts satisfying both criteria would occur.</p> <p>An appropriate mitigation site shall at minimum:</p> <ol style="list-style-type: none"> 1) Have Joshua trees of similar density, abundance and age structure, and include flowering Joshua trees; 2) Support Joshua tree woodland habitat of similar native plant species composition, density, structure, and function to habitat that was impacted; 3) Support nursery plants for Joshua tree recruits (i.e., seedlings/juveniles); and, 4) Not be within 500 meters of a road (if feasible) or OHV activity. 	<p>Prior to Project construction and activities</p>	<p>Antelope Valley- East Kern Water Agency</p>

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	A mitigation plan shall provide the location of the mitigation lands and provide an analysis and discussion as to why those mitigation lands are appropriate and adequate to serve as mitigation.		
MM-BIO-5- Impacts to Joshua tree- compensatory mitigation	The mitigation lands shall be protected in perpetuity under a conservation easement dedicated to a local land conservancy or other appropriate entity that has been approved to hold and manage mitigation lands pursuant to Assembly Bill 1094 (2012). An appropriate non-wasting endowment shall be provided for the long-term management of mitigation lands. A mitigation plan shall include measures to protect the targeted habitat values in perpetuity from direct and indirect negative impacts. Issues that shall be addressed include, but are not limited to the following: protection from any future development and zone changes; restrictions on access; proposed land dedications; control of illegal dumping; water pollution; and, increased human intrusion. A conservation easement and endowment funds shall be fully acquired, established, transferred, or otherwise executed prior to AVEK's impacts to Joshua trees.	Prior to finalizing/adopting CEQA document	Antelope Valley-East Kern Water Agency
MM-BIO-6- Impacts to streams-Lake and Streambed Alteration Notification	AVEK shall notify CDFW pursuant to Fish and Game Code, section 1600 <i>et seq.</i> (Lake and Streambed Alteration Agreement).	Prior to Project construction and activities	Antelope Valley-East Kern Water Agency
MM-BIO-7- Impacts to streams-Lake and Streambed Alteration Notification	The LSA Notification shall include a hydrology report to evaluate whether the Project would alter, divert, or impair stream flow and alignment of the stream, including the historic hydrologic regime. A hydrological evaluation of the 200, 100, 50, 25, 10, 5, and 2-year frequency storm event for existing and proposed conditions shall be conducted. The hydrology report shall include a scour analysis to demonstrate that stream banks, bed, and channel would not erode under different storm events for proposed conditions. The hydrology report shall also include an analysis of changes to	Prior to Project construction and activities	Antelope Valley-East Kern Water Agency

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	aggradation on site as well as changes to suspended sediment. The hydrology report shall include an analysis as to whether the placement and installation of staging areas, parking areas, and security fencing would impact Drainage 2. Finally, Project-related assessments of whether a stream is active, stable or unstable, shall be accompanied by the evidence used to make such determinations in the hydrology report.		
MM-BIO-8- Impacts to streams- avoidance	AVEK shall provide an adequate setback of no less than 200 feet measured from the west bank of Drainage 2. Temporary fencing, signage, and other demarcations shall be established to prevent any vehicle or foot traffic from entering the protected area for the duration of the Project. Also, the permanent chain link fencing that will enclose the Project site shall be installed no less than 200 feet away from the top of the eastern bank of Drainage 2.	Prior to Project construction and activities	Antelope Valley- East Kern Water Agency
MM-BIO-9- Impacts to streams- compensatory mitigation	AVEK shall identify compensatory mitigation that is commensurate to the impacts to Drainage 2. Mitigation shall occur where a stream supports desert plant communities. Mitigation shall occur within the Antelope Valley.	Prior to Project construction and activities	Antelope Valley- East Kern Water Agency
MM-BIO-10- Crotch's bumble bee	Due to suitable habitat within the Project site, within one year prior to grading and/or vegetation removal, a qualified entomologist familiar with the species behavior and life history shall conduct surveys to determine the presence/absence of Crotch's bumble bee. Surveys shall be conducted during flying season when the species is most likely to be detected above ground, between March 1 to September 1 (Thorp et al. 1983). Survey results, including negative findings, shall be submitted to AVEK prior to implementing Project-related ground-disturbing activities and/or vegetation removal where there may be impacts to Crotch's bumble bee. At minimum, a survey report shall provide the following: a) A description and map of the survey area, focusing on areas that could provide suitable habitat for Crotch's	Prior to Project construction and activities	Antelope Valley- East Kern Water Agency

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	<p>bumble bee;</p> <p>b) Field survey conditions that shall include name(s) of qualified entomologist(s) and brief qualifications; date and time of survey; survey duration; general weather conditions; survey goals, and species searched;</p> <p>c) Map(s) showing the location of nests/colonies; and,</p> <p>d) A description of physical (e.g., soil, moisture, slope) and biological (e.g., plant composition) conditions where each nest/colony is found. A sufficient description of biological conditions, primarily impacted habitat, shall include native plant composition (e.g., density, cover, and abundance) within impacted habitat (e.g., species list separated by vegetation class; density, cover, and abundance of each species).</p>		
MM-BIO-11-Crotch's bumble bee	If Crotch's bumble bee is detected, AVEK in consultation with a qualified entomologist shall develop a plan to fully avoid impacts to Crotch's bumble bee. The plan shall include effective, specific, enforceable, and feasible measures. An avoidance plan shall be submitted to AVEK prior to implementing Project-related ground-disturbing activities and/or vegetation removal where there may be impacts to Crotch's bumble bee.	Prior to Project construction and activities	Antelope Valley-East Kern Water Agency
MM-BIO-12-Crotch's bumble bee	If Crotch's bumble bee is detected and if impacts to Crotch's bumble bee cannot be feasibly avoided during Project construction and activities, AVEK/qualified entomologist shall coordinate with CDFW to obtain appropriate handling permits for incidental take of Crotch's bumble bee and provide appropriate mitigation for impacts to Crotch's bumble bee habitat. AVEK shall mitigate for impacts to Crotch's bumble bee habitat at a ratio comparable to the Project's level of impacts.	Prior to Project construction and activities	Antelope Valley-East Kern Water Agency
MM-BIO-13-Impacts to sensitive plant communities-mapping	AVEK shall retain a qualified botanist to map plant communities at the alliance/association level using the Manual of California Vegetation (MCV). The qualified botanist shall prepared an updated and thorough floristic-based assessment of plant communities, following CDFW's Protocols for Surveying and	Prior to Project construction and activities	Antelope Valley-East Kern Water Agency

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	Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities.		
MM-BIO-14- Impacts to sensitive plant communities- compensatory mitigation	If the Project will have unavoidable impacts on sensitive plant communities, AVEK shall mitigate for temporal and permanent loss of S1, S2, and S3 sensitive plant communities, including communities with additional threat rank of 0.1 or 0.2. Mitigation shall be no less than 3:1. Mitigation shall increase based on the rarity of the plant community impacted. Mitigation shall occur within the same watershed.	Prior to Project construction and activities	Antelope Valley-East Kern Water Agency
MM-BIO-15- Nesting Birds	<p>Any construction activity shall be avoided during nesting season. If not feasible, Mitigation Measure BIO-3 shall expand the time period for bird nesting from March 1 through August 31 to February 1 through August 31 and maintain January 1 through August 31 for raptors. If the Project occurs between January 1 through August 31, a nesting bird and raptor survey shall be conducted prior to any ground-disturbing activities (e.g., staging, mobilization, excavation, grading) as well as prior to any vegetation removal within the Project site.</p> <p>It should be noted that the temporary halt of Project activities within nesting buffers during nesting season does not constitute effective mitigation for the purposes of offsetting Project impacts associated with habitat loss. Additional mitigation would be necessary to compensate for the removal of nesting habitat within the Project site based on acreage of impact and vegetation composition. CDFW shall be consulted to determine proper mitigation for impacts to occupied habitat depending on the status of the bird species. Mitigation ratios would increase with the occurrence a California Species of Special Concern and would further increase with the occurrence of a CESA-listed species.</p>	Prior to Project ground disturbing activities	Antelope Valley-East Kern Water Agency

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MM-BIO-16- Move Out of Harm's Way	A qualified biological monitor shall be on site during initial ground disturbing activities and vegetation removal. The qualified biological monitor shall move wildlife of low mobility out of harm's way to avoid wildlife injury or mortality. Wildlife shall be allowed to move away on its own (non-invasive, passive relocation) or relocated to suitable habitat adjacent to the Project area. No wildlife shall be enclosed inside any work zone or otherwise impacted by Project-related fencing. Safe and suitable wildlife relocation areas shall be identified by a qualified biological monitor prior to ground disturbing activities and vegetation removal.	Prior to/During Project ground disturbing activities	Antelope Valley-East Kern Water Agency
MM-BIO-17- Scientific Collection Permit	Pursuant to the California Code of Regulations, title 14, section 650 , AVEK/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. An LSA Agreement may provide similar take or possession of species as described in the conditions of the agreement.	Prior to Project ground disturbing activities	Antelope Valley-East Kern Water Agency
Recommendations (REC)		Timing	Responsible Party
REC-1-Impacts to streams-Lake and Streambed Alteration Notification	<p>CDFW's issuance of an LSA Agreement for a Project that is subject to CEQA will require CEQA compliance actions by CDFW as a Responsible Agency. As a Responsible Agency, CDFW may consider the CEQA document from AVEK for the Project. To minimize additional requirements by CDFW pursuant to Fish and Game Code section 1600 <i>et seq.</i> and/or under CEQA, the CEQA document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring, and reporting commitments for issuance of the LSA Agreement.</p> <p>To compensate for any on- and off-site impacts to aquatic and riparian resources, additional mitigation conditioned in any LSA Agreement may include the following: erosion and pollution control measures, avoidance of resources, protective measures for</p>	Prior to Project construction and activities	Antelope Valley-East Kern Water Agency

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	downstream resources, on- and/or off-site habitat creation, enhancement or restoration, and/or protection, and management of mitigation lands in perpetuity.		
REC-2-Impacts to sensitive plant communities-mapping	In 2007, the State Legislature required CDFW to develop and maintain a vegetation mapping standard for the state (Fish & G. Code, § 1940). This standard complies with the National Vegetation Classification System which utilizes alliance and association-based classification of unique vegetation stands. CDFW utilizes vegetation descriptions found in the MCV. Through this new vegetation classification system, CDFW only tracks Sensitive Natural Communities and their respective rankings using the MCV Alliance and Association names for vegetation communities.	Prior to Project construction and activities	Antelope Valley-East Kern Water Agency
REC-3-Impacts to sensitive plant communities-mapping	CDFW recommends appending results from plant community mapping to the final environmental document.	Prior to finalizing CEQA document	Antelope Valley-East Kern Water Agency
REC-4-Construction Fencing	Any fencing used during and after the Project should be constructed with materials that are not harmful to wildlife. Prohibited materials should include, but are not limited to, spikes, glass, razor, or barbed wire. Use of chain link and steel stake fence should be avoided or minimized. All hollow posts and pipes should be capped to prevent wildlife entrapment and mortality. Metal fence stakes used on the Project site should be plugged with bolts or other plugging materials to avoid this hazard. Fences should be installed in a manner that excludes any wildlife from entering the work zone (i.e., embedded fence such that wildlife cannot enter from under the fence). Fences should not have any slack that may cause wildlife entanglement.	Prior to/During/ After Project construction and activities	Antelope Valley-East Kern Water Agency
REC-5-Rodenticides	Rodenticides and second-generation anticoagulant rodenticides should be prohibited both during and over the life of the Project.	Prior to/During/	Antelope Valley-East Kern Water Agency

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		After Project construction and activities	
REC-6-Data	AVEK should ensure sensitive and special status species data has been properly submitted to the California Natural Diversity Database with all data fields applicable filled out. The data entry should also list pending development as a threat and then update this occurrence after impacts have occurred. AVEK should provide CDFW with confirmation of data submittal.	Prior to finalizing/adopting CEQA document	Antelope Valley-East Kern Water Agency
REC-7-Mitigation and Monitoring Reporting Plan	AVEK should update the Project's proposed Biological Resources Mitigation Measures and condition the environmental document to include mitigation measures recommended in this letter. AVEK is welcome to coordinate with CDFW to further review and refine the Project's mitigation measures.	Prior to finalizing/adopting CEQA document	Antelope Valley-East Kern Water Agency