



State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
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July 30, 2026

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**SUBJECT: REVIEW OF SURPRISE VALLEY GEOTHERMAL EXPLORATION PROJECT,
INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION, MODOC COUNTY, STATE
CLEARINGHOUSE NUMBER 2026061281**

Dear Sean Curtis:

The California Department of Fish and Wildlife (CDFW) has reviewed the Initial Study and Mitigated Negative Declaration (MND) dated June 2, 2026, posted for public review on June 29, 2026, for the above-referenced project (Project). CDFW appreciates this opportunity to comment on the Project, pursuant to the California Environmental Quality Act (CEQA) Guidelines¹.

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, subd. (a) & 1802; Public Resources Code, § 21070; CEQA Guidelines, § 15386, subd. (a)). CDFW, in its Trustee Agency 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 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. Likewise, to the extent implementation of the Project as proposed may

¹ CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

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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 state listed rare plants pursuant to the Native Plant Protection Act (NPPA; Fish & G. Code, § 1900 et seq.) authorization as provided by the applicable Fish and Game Code will be required.

California Endangered Species Act

Please be advised that a CESA permit² must be obtained if the Project has the potential to result in “take” (hunt, pursue, catch, capture, kill, or attempt thereof) of plants or animals listed under CESA, either during construction or over the life of the Project. Issuance of a CESA permit is subject to CEQA documentation; the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program. If the Project has the potential to result in the take of a CESA-listed species, early consultation is encouraged, as significant modification to the Project may be necessary to minimize and fully mitigate impacts as required by Fish and Game Code section 2081(b)(2).

Lake and Streambed Alteration (LSA) Agreements

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:

- Substantially divert or obstruct the natural flow of the bed, channel, or bank of any river, stream, or lake; or
- Substantially change or use any material from the bed, channel, or bank of any river, stream, or lake; or
- Deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

Work within perennial and ephemeral streams and watercourses with a subsurface flow, is generally subject to notification requirements. In addition, infrastructure installed beneath such aquatic features, such as through horizontal directional drilling or trenching, is also generally subject to notification requirements. Therefore, impacts to the mainstems, tributaries,

² <https://wildlife.ca.gov/Conservation/CESA/Permitting>

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associated riparian habitat, and hydrologically connected floodplains caused by the proposed Project may require an LSA notification.

CDFW, as a responsible agency under CEQA, will consider the CEQA document for the Project. 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 completion of the agreement. LSA Program staff are available to assist and can be contacted at rlsaredding@wildlife.ca.gov. To obtain information about the 1602 Notification process, please visit the LSA Program website³.

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, sections 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).

PROJECT DESCRIPTION SUMMARY

Lead Agency: Modoc County

Location: The Project site is located throughout Assessor Parcel Numbers 026-100-004, 026-100-014, 026-100-006, 026-100-008, north of Lake City, off Surprise Valley Road, east of Highway 395 in Modoc County.

Project Description: The Project, as described in the MND, proposes to develop up to eleven geothermal test wells on nine well pads to assess the potential of the Lake-City Surprise Valley 1 Known Geothermal Resource Area for commercial geothermal energy generation.

Two primary components of this exploration Project include geothermal well pads and test wells and access roads to the well pads. All developments would occur within a 39.5-acre disturbance area. During installation, each well pad would accommodate a drilling rig, support equipment, portable bathroom, baker tanks, and vehicles. Well testing would consist of flowing the exploration

³ <https://wildlife.ca.gov/Conservation/Environmental-Review/LSA>

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well into baker tanks stationed on the well pad and monitoring the captured geothermal fluid for temperatures, pressures, flow rates, chemistry and other parameters.

Three new access roads would be developed to access well pads. The proposed access roads would stem off from Surprise Valley Road to the well pads. Existing access roads may require improvements to accommodate transportation of well and drilling equipment. Improved roads may be widened and surfaced as needed.

Biological Setting:

The Project area is located in the Surprise Valley of Modoc County and is characterized by irrigated agricultural lands, wet meadows, alkaline depressions, intermittent streams, and areas of western juniper woodland. The multiple APNs comprising the Project area in Surprise Valley support a mosaic of irrigated agricultural fields, seasonally flooded wet meadows, cultivated alfalfa, alkaline depressions, and patches of western juniper woodland. While irrigated pasture and wet meadow vegetation dominate most parcels, several well pad locations additionally contain intermittent stream features, fed by Warner Mountain snowmelt, alkaline sink vegetation, and one permanent pond supporting potential amphibian habitat.

According to the California Natural Diversity Database (CNDDDB) and field surveys conducted for the MND, the Project area occurs within the range of, or supports suitable habitat for, multiple special-status species, including but not limited to:

- Greater sandhill crane (*Antigone canadensis tabida*, CESA Threatened; CDFW Fully Protected [FP])
- Swainson's hawk (*Buteo swainsoni*, CESA Threatened)
- Northern leopard frog (*Lithobates pipiens*, CDFW Species of Special Concern [SSC])
- Northwestern pond turtle (*Actinemys marmorata*, CDFW SSC)
- Monarch butterfly (*Danaus plexippus*, USFWS Proposed Threatened)
- Prairie falcon (*Falco mexicanus*)
- American goshawk (*Astur atricapillus*, CDFW SSC)
- Bald eagle (*Haliaeetus leucocephalus*, CESA Threatened)
- Golden eagle (*Aquila chrysaetos*, CDFW FP)
- American badger (*Taxidea taxus*, CDFW SSC)
- Desert popcornflower (*Plagiobothrys salsus*, California Rare Plant Rank

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[CRPR] 2B.2)

- Great Basin downingia (*Downingia laeta*, CRPR 2B.2)
- Hairy marsh hedge-nettle (*Stachys pilosa*, CRPR 2B.3)
- Aleppo avens (*Geum aleppicum*, CRPR 2B.2)
- Rosy orthocarpus (*Orthocarpus bracteosus*, CRPR 2B.2)
- North American moonwort (*Botrychium neolunaria*, CRPR 2B.3)
- Western goblin (*Botrychium montanum*, CRPR 2B.1)
- Northwestern moonwort (*Botrychium pinnatum*, CRPR 2B.2)
- Scalloped moonwort (*Botrychium crenulatum*, CRPR 2B.2)
- Broad-nerved hump moss (*Meesia uliginosa*, CRPR 2B.2)
- Green shield moss (*Buxbaumia viridis*, CRPR 2B.2)
- Oregon campion (*Silene oregana*, CRPR 2B.2)
- Kitten-tails (*Veronica missurica* ssp. *missurica*, CRPR 2B.3)
- Doublet (*Dimeresia howellii*, CRPR 2B.3)
- Gray's lomatium (*Lomatium grayi*, CRPR 2B.3)
- Yakima bird's-beak (*Cordylanthus capitatus*, CRPR 2B.2)
- Dwarf resin birch (*Betula glandulosa*, CRPR 2B.2)
- Warner Mountains buckwheat (*Eriogonum umbellatum* var. *glaberrimum*, CRPR 1B.3)
- Beautiful sagebrush bluebells (*Mertensia oblongifolia* var. *amoena*, CRPR 2B.2)

The Surprise Valley functions as a key migratory and breeding area for greater sandhill cranes and supports extensive foraging habitat for Swainson's hawks. Portions of the Project area overlap An Essential Connectivity Area (ECA)⁴. Irrigated pasture, wet meadow systems, alkaline depressions, and agricultural-meadow mosaics in the Project vicinity continue to support broad-scale wildlife movement, including use by mule deer winter range populations moving between seasonal habitats.

COMMENTS AND RECOMMENDATIONS

CDFW offers the following comments and recommendations to assist the Lead Agency in adequately identifying, avoiding, minimizing and/or mitigating the Project's significant, or potentially significant, direct, and indirect impacts on biological resources.

⁴ California Department of Fish and Wildlife (CDFW). 2014. *Essential Connectivity Areas – California Essential Habitat Connectivity (CEHC) Dataset [ds620]*. Compiled by Melanie Gogol-Prokurat, Senior Environmental Scientist (Supervisory). Last updated in BIOS: January 13, 2014.

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Zoning and Uses

The MND provides a description of existing agricultural land uses within the Project area, including the presence of Prime Farmland, Farmland of Statewide Importance, and parcels enrolled under Williamson Act contracts. The MND describes the Project would temporarily convert approximately 39.5 acres of irrigated agricultural land for well pad construction, access road improvements, and drilling operations. The MND identifies applicable Modoc County zoning provisions and notes that commercial energy exploration is considered an allowable use on Williamson Act contracted lands with a Use Permit, and describes the presence of wet meadow systems, irrigated pasturelands, and associated agricultural hydrology that support biological resources in the region.

Wet meadows, irrigated pastures, and associated hydrology support special-status species, as documented in the MND, including greater sandhill crane and Swainson's hawk. Soil compaction, changes to water conveyance, disturbance from drilling operations, and alterations to meadow hydrology may reduce habitat suitability even if agricultural use is later restored. Swainson's hawks preferentially forage in irrigated hayfields, alfalfa, and pasture where prey densities are high^{5,6}, with their core foraging areas closely tied to open agricultural cover types⁷. Wetland-associated prey, including amphibians and juvenile waterfowl, can compose up to half of the biomass consumed by nesting Swainson's hawks, demonstrating the importance of hydrologically intact agricultural wetlands⁸. Greater sandhill cranes similarly depend on flood-irrigated agriculture, which supplies nearly 60% of wetland resources used during summering periods⁹. During migration, cranes forage heavily in irrigated barley and grain fields and use adjacent wet meadows and shallow irrigated pastures for nesting and roosting¹⁰.

⁵ Reeves, K. (2008). *Foraging by Swainson's Hawks in a Vineyard-Dominated Landscape*. Journal of Raptor Research.

⁶ *Foraging and nesting habitat association of Swainson's Hawk along Lower Cache Creek, Yolo County, California*. ScholarWorks, California State University.

⁷ Babcock, K. W. (1995). *Home Range and Habitat Use of Breeding Swainson's Hawks in the Sacramento Valley of California*. Journal of Raptor Research.

⁸ Murphy, R. K. (2010). *Diets of Nesting Swainson's Hawks in Relation to Land Cover in Northwestern North Dakota*. The Prairie Naturalist 42(3/4): 89–99.

⁹ Donnelly, J. P. et al. (2024). *Flood-irrigated agriculture mediates climate-induced wetland scarcity for summering sandhill cranes in western North America*. Ecology and Evolution.

¹⁰ Vanausdall, R., Kendall, W. L., & Collins, D. P. (2025). *Antigone canadensis foraging patterns influenced by crop type, roost distance, and tillage intensity during migration*. Ornithological Applications.

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The MND provides a general description of agricultural land uses and notes that commercial energy exploration is an allowable use under Modoc County's Williamson Act rules, the MND's conclusion of "less-than-significant" impacts does not appear to rely on specific evidence regarding compatibility and land restoration. The MND does not include a Williamson Act compatibility determination or an analysis demonstrating that 24 months of drilling, grading, access road development, and soil disturbance would avoid disruption to agricultural operations or allow farmland, particularly irrigated pasture and wet meadow systems, to be restored to pre-Project productivity. As a result, the MND does not appear to present substantial evidence supporting its conclusion of less-than-significant agricultural impacts.

CDFW recommends that the Lead Agency provide an assessment and clarification regarding the Project's use of land under Williamson Act contract and how modification of these lands may affect biological resources under CDFW jurisdiction. The MND concludes that exploration activities on contracted parcels would result in "less than significant" impacts; however, this determination relies on the assumption that geothermal exploration is a compatible use without presenting the compatibility findings or supporting evidence. Because these parcels currently support irrigated agricultural production, associated wet meadow and wildlife habitat, CDFW recommends an assessment for construction, grading, road development, and drilling/testing activities and how these activities might disrupt agricultural operations, alter irrigation patterns, affect soil function, or diminish agricultural land's ability to support wildlife resources that rely or utilize this resource. Absent parcel-specific analysis and defined performance standards for restoration, the MND does not provide substantial evidence supporting its conclusion of less-than-significant impacts to agricultural resources.

While the MND describes general reclamation actions such as topsoil salvage, erosion control seeding, and preparation of a future reclamation plan, it does not identify specific, measurable reclamation standards, long-term monitoring requirements, or avoidance measures needed to ensure agricultural soils, irrigation functions, wet meadow hydrology, and associated habitat values are protected and restored. To ensure impacts are minimized and mitigated, CDFW recommends that the Lead Agency develop and include enforceable restoration performance criteria, parcel-specific reclamation expectations, and a monitoring program sufficient to maintain agricultural and habitat function during and after exploration activities.

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Hydrology-Dependent Biological Resources

The MND indicates that a wetland delineation and hydrology-related mitigation plan will be prepared at a later stage however, CEQA Guidelines section 15126.2 requires the analysis of hydrology-dependent biological impacts to be presented at the time of environmental review. The MND describes generalized habitat associations within the Project area, including irrigated agricultural fields, wet meadows, alkaline depressions, and intermittent drainages; however, it does not evaluate how Project construction, drilling, access road improvements, or long-term equipment operation may alter the hydrologic conditions that support these habitats. Wet meadows and irrigated pastures in Surprise Valley rely on a combination of shallow groundwater, soil moisture retention, irrigation conveyances, and stable surface flow patterns^{11,12}. Project activities involving grading, compaction, road widening, and new pad construction have the potential to modify infiltration and runoff, disrupt irrigation flows, and alter shallow water features that sustain wet meadow vegetation and agricultural-wildlife interface habitat. The MND does not appear to provide an analysis of these hydrologic functions, nor does it identify potential changes to soil moisture regimes, irrigation infrastructure, meadow hydroperiods, or ditch and seep hydrology, all of which directly influence suitability for many special status species listed above.

Additionally, the MND does not appear to include hydrology-based avoidance measures, parcel-specific hydrologic mapping, or reclamation performance standards capable of ensuring that hydrologic function will be restored following construction and drilling. Reclamation commitments are limited to general topsoil salvage and reseeding and do not address restoration of irrigation flow, meadow water-holding capacity, or shallow groundwater conditions. Without a biological-hydrology impact analysis or monitoring requirements tied to hydrologic performance, the conclusion of less-than-significant biological impacts does not appear to be supported by substantial evidence. CDFW recommends the Lead Agency include a site-specific hydrologic assessment, identify hydrology-dependent biological

¹¹ Pollock, M.M., & Norman, L.M. (2025). *Wet meadow regeneration through restoration of biophysical feedbacks*. *Frontiers in Environmental Science*, 13:1592036. <https://doi.org/10.3389/fenvs.2025.1592036>

¹² Loheide II, S.P., & Deitchman, R.S. (2008). *A framework for understanding the hydroecology of impacted wet meadows in the Sierra Nevada and Cascade Ranges, California, USA*. *Hydrogeology Journal*, 16, 103–118. <https://doi.org/10.1007/s10040-008-0380-4>

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resources at the parcel level, establish hydrologic avoidance and minimization measures, and develop measurable reclamation standards to ensure that wet meadow, irrigated pasture, and shallow-water habitats retain their ecological function during and after Project implementation.

CESA Listed Bumble Bees

The western bumble bee (*Bombus occidentalis*), a CESA candidate species as of September 30, 2022, occurs throughout portions of northeast California, and its current range occurs immediately west of the Project area. Although the Project is just outside the species' mapped core distribution, habitat conditions present within Surprise Valley, including irrigated agricultural lands with flowering forbs, meadow vegetation, alkaline-edge plant communities, and small mammal burrows, may provide potential floral and nesting resources suitable for western bumble bee during portions of its life cycle. CESA-candidate species receive the same legal protections afforded to threatened or endangered species under CESA therefore, ground disturbance should not proceed unless the potential for take has been adequately evaluated and avoided.

Given the Project's proximity to the species' current range and the presence of habitat features that may support occasional or intermittent use, CDFW recommends that the Lead Agency conduct a range-adjacent habitat assessment to include in the final MND for western bumble bee prior to Project approval. This assessment should identify whether native floral resources, foraging habitat, overwintering substrate (including small mammal burrows and bunchgrasses), or meadow-edge microhabitats occur within or adjacent to the Project footprint. If suitable habitat is present, CDFW recommends performing pre-construction western bumble bee surveys by a qualified entomologist following CDFW's *Survey Considerations for CESA Candidate Bumble Bee Species*¹³. Survey results, including negative findings, should be submitted to CDFW before vegetation removal or grading.

If western bumble bees are detected during surveys, the Project Proponent should coordinate with CDFW to develop a Western Bumble Bee Avoidance Plan that identifies nest locations, inactive burrows, floral resource patches, and proposed avoidance buffers. If full avoidance cannot be achieved, the

¹³ California Department of Fish and Wildlife (CDFW). 2023. *Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species*. June 6, 2023. Sacramento, CA. Available at: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentVersionID=338016>

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Proponent must consult with CDFW regarding the need for a CESA Incidental Take Permit before ground-disturbing activities proceed.

Swainson's Hawk

Swainson's hawk is listed as Threatened under CESA, and observation records confirm occurrences within the Lake City quadrangle. Although the MND includes Mitigation Measure BIO-10, which appropriately addresses nesting-season avoidance, preconstruction nest surveys, and minimum buffers, additional analysis is needed to fully support the document's less-than-significant impact conclusion. BIO-10 requires surveys only immediately before construction and does not include protocol-level surveys during CEQA review, which are necessary to determine whether active or recurring nest sites are present prior to Project approval. The MND also does not evaluate potential impacts to foraging habitat, despite scientific evidence showing that reduced prey availability or increased foraging distances can negatively affect nestling condition, fledgling survival, and reproductive success^{14,15} (Inselman et al. 2015; Alsup 2012). If temporary or permanent loss of irrigated agricultural lands or meadow foraging areas would occur, compensatory mitigation consistent with CDFW's *Staff Report Regarding Mitigation for Impacts to Swainson's Hawk*¹⁶ should be included. CDFW recommends that protocol-level nesting surveys be conducted prior to CEQA adoption and that the Lead Agency evaluate and, if necessary, mitigate potential foraging habitat impacts to ensure full avoidance and minimization of take for this CESA-listed species.

As noted in the CDFW Staff Report:

- Foraging Habitat Assessment within a 10-mile radius of any active Swainson's hawk nest that has been used in the past five years. This recognizes the species' extensive foraging range and ensures project impacts on prey availability are properly evaluated.

¹⁴ Inselman, W. M., Datta, S., Jenks, J. A., Jensen, K. C., & Grovenburg, T. W. (2015). *Buteo nesting ecology: Evaluating nesting of Swainson's Hawks in the Northern Great Plains*.

<https://doi.org/10.1371/journal.pone.0137045>

¹⁵ Alsup, S. E. (2012). *Productivity and habitat features of Swainson's Hawks (Buteo swainsoni) nesting in suburban and agricultural areas of southwest Idaho*. Master's Thesis, Boise State University.

<https://scholarworks.boisestate.edu/td/322/>

¹⁶ California Department of Fish and Game (CDFG). 1994. *Staff Report regarding Mitigation for Impacts to Swainson's Hawks (Buteo swainsoni) in the Central Valley of California*. Wildlife Management Division & Environmental Services Division, California Department of Fish and Game, Sacramento, CA.

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- Nesting surveys within a ½-mile radius of Project activities during the breeding season (March 1–September 15); identification of active nests within this zone triggers a need for agency consultation and additional protection measures.

Greater Sandhill Crane

The MND identifies greater sandhill crane as a special-status species within the Project vicinity and documents multiple observations of cranes during biological surveys. Greater sandhill crane is a CESA Threatened and Fully Protected species. Observation records confirm several recent and historical occurrences within the Lake City quadrangle, demonstrating this species' long-standing use of Surprise Valley's irrigated meadows and agricultural fields.

The MND includes Mitigation Measure 9, which establishes a seasonal work window intended to avoid construction within the active nesting and brood-rearing period. CDFW appreciates inclusion of this measure however, even with a seasonal work window as proposed in BIO-9, the MND does not incorporate focused crane nesting or brood-rearing surveys, biologically supported avoidance buffers, monitoring protocols, or site-specific wet meadow hydrology protections needed to fully avoid disturbance to this species. Seasonal restrictions reduce risk, but they do not confirm whether cranes are present immediately outside the breeding window, nor do they ensure avoidance of nests initiated early, late, or during atypical hydrologic conditions. This species exhibits strong nest fidelity and high sensitivity to noise, hydrologic changes, and human disturbance^{17,18,19} additional measures appear necessary to ensure impacts are reduced to less-than-significant levels and to comply with protections afforded under CESA and the Fully Protected designation.

To ensure adequate avoidance and minimization of Projects impacts on greater sandhill crane, CDFW recommends adding the following mitigation measure to supplement BIO-9:

¹⁷ Austin, J.E., & Buhl, D.A. 2021. *Responses of nesting Greater Sandhill Cranes to research activities and effects on nest survival*. U.S. Geological Survey, Northern Prairie Wildlife Research Center.

¹⁸ McWethy, D.B., & Austin, J.E. 2009. *Nesting ecology of Greater Sandhill Cranes (Grus canadensis tabida) in riparian and palustrine wetlands of eastern Idaho*. *Waterbirds* 32(1): 106–115.

¹⁹ Ivey, G.L., & Dugger, B.D. 2008. *Factors influencing nest success of Greater Sandhill Cranes at Malheur National Wildlife Refuge, Oregon*. *Waterbirds* 31(1): 52–61.

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- Prior to any construction, drilling, grading, or ground-disturbing activities, a qualified biologist familiar with greater sandhill crane behaviors shall conduct focused pre-construction surveys no more than 14 days before work begins, followed by a second survey within 24 hours of Project initiation; if work is delayed or suspended for more than 30 days, the entire Project area shall be re-surveyed. Surveys shall provide coverage of all suitable habitat within the Project area with an additional 1,000-foot buffer. Surveys shall document crane presence, nesting behavior, active territories, staging or foraging activity, active roost sites, and any wet meadow or irrigated field features that support crane use.
- If Project activities must occur during the known breeding season (April 1–August 31), the qualified biologist shall also perform focused nesting surveys within a 0.5-mile radius of the Project area; if active nesting is detected, the biologist shall consult with CDFW prior to work to demonstrate how full avoidance of take will be ensured. If surveys identify active nests, territorial pairs, broods, or other breeding activity, the Project Proponent shall implement a minimum 1,000-foot avoidance buffer around nesting or brood-rearing areas and refrain from any construction or drilling until CDFW has reviewed and approved a Sandhill Crane Avoidance Plan. This plan shall include mapped locations of nests, territories, brood-rearing areas, roost sites, hydrological features essential for crane use, delineated buffers, full-avoidance actions, monitoring protocols, and methods for maintaining wet meadow irrigation flows and hydrologic conditions necessary for crane nesting success. Since greater sandhill crane is a Fully Protected species, no take authorization can be issued under CESA; therefore, if full avoidance cannot be achieved, the Project Proponent must consult with CDFW to identify appropriate next steps and ensure complete avoidance through Project design, timing, and implementation.

Western Burrowing Owl

The MND does not address western burrowing owl, a species' designated as a candidate species under CESA as of October 25, 2024. CDFW's Biogeographic Information and Observation System indicates the Project area contains high-suitability summer range habitat for burrowing owl, and the Project area's

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mosaic of irrigated agricultural fields, wet meadows, and open valley-bottom terrain is consistent with habitat features used by the species²⁰.

Project grading, vegetation removal, drilling activities, and soil compaction could degrade or permanently remove burrow sites and suitable foraging habitat for burrowing owl. Western burrowing owls rely on burrows year-round, and loss of access to nesting, roosting, or satellite burrows can increase predation risk, energetic stress, reproductive failure, and mortality¹². This species is a CESA candidate, any Project activity that could result in "take" (Fish & G. Code §86) would require appropriate CESA authorization. The MND does not include an analysis of burrowing owl impacts, nor does it incorporate avoidance or minimization measures necessary to reduce impacts to less than significant levels.

According to the Staff Report on Burrowing Owl Mitigation²¹, burrowing owls are most detectable between April 15 and July 15, particularly during the nestling stage, and focused surveys are required to reliably determine occupancy. To ensure potential impacts to western burrowing owl are accurately identified, avoided, and fully mitigated, CDFW recommends the Lead Agency include the following measures:

- Pre-construction western burrowing owl surveys shall be completed by a qualified biologist no more than 14 days before initiation of site preparation or grading activities, and a second survey shall be completed within 24 hours of the start of site preparation or grading activities. If ground-disturbing activities are delayed or suspended for more than 30 days after the pre-construction surveys, the Project site shall be re-surveyed. Surveys for western burrowing owl shall be conducted in accordance with the protocols established in the California Department of Fish and Wildlife 2012 Staff Report on Burrowing Owl Mitigation. Surveys shall include coverage of the entire Project site and a 500-foot buffer in adjacent habitat.

²⁰ California Fish and Game Commission. 2024. *Notice of Findings: Western Burrowing Owl (Athene cunicularia hypugaea)*. October 15, 2024. Wildlife Heritage and Conservation Since 1870. Sacramento, CA.

²¹ California Department of Fish and Game (CDFG). 2012. *Staff Report on Burrowing Owl Mitigation*. March 7, 2012. Sacramento, CA.

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- If western burrowing owls, active burrows, or diagnostic sign thereof are detected, the Project Proponent shall prepare and submit to CDFW for review and approval a Burrowing Owl Plan. The Plan shall describe proposed full avoidance, minimization, and monitoring actions and shall include: the number and location of occupied burrow sites; acres of western burrowing owl habitat that would be impacted; site monitoring details; and proposed buffers and avoidance measures. Project activities shall not occur within 1,000 feet of an active burrow until CDFW has reviewed and approved the Plan.
- If the Project Proponent cannot ensure full avoidance of western burrowing owls or occupied burrows, the Proponent shall consult with CDFW regarding next steps, including the potential for obtaining a CESA ITP for western burrowing owl prior to initiation of ground-disturbing activities.

Deferral of Rare Plant Protocol Surveys

The MND defers protocol level surveys for special status plant species to a brief preconstruction window tied to initial ground disturbing activities. CDFW discourages deferring surveys that are essential for evaluating Project impacts and informing appropriate avoidance, minimization, and mitigation measures. CEQA Guidelines section 15126.4(a)(1)(B) specifies that mitigation measures must be based on information capable of providing substantial evidence and cannot rely on future studies to determine whether significant impacts would occur.

CDFW recommends that the Lead Agency require full protocol level botanical surveys²² prior to Project approval within the area of proposed disturbance, at minimum. These surveys should be conducted during the appropriate blooming periods to ensure detectability. Survey results should inform avoidance and minimization measures included directly in the MND and should guide development of clear, enforceable mitigation measures with performance standards, long-term monitoring, and adaptive management triggers.

²² California Department of Fish and Wildlife. (2016, November 8). *Protocols for surveying and evaluating impacts to special status native plant populations and sensitive natural communities*. Retrieved June 18, 2026, from <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959>

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Access Roads

The MND describes the need to construct three new access roads and widen existing roads to accommodate drilling equipment; however, it does not evaluate how these roadway modifications may affect wildlife movement, wet meadow hydrology, or habitat connectivity in the Project area. The Project lies within an ECA, and the agricultural meadow mosaic within Surprise Valley provides movement corridors for mule deer, greater sandhill crane, raptors, amphibians, and a variety of small mammals^{23,24}. Road widening, increased vehicle use, and construction-related traffic have the potential to fragment habitat, impede wildlife movement, and increase the risk of wildlife-vehicle collisions. Several special-status species documented within the Project vicinity move through meadow and field habitats during daily and seasonal cycles, including but not limited to greater sandhill crane and American badger, road construction and increased traffic volume may pose direct and indirect impacts that have not been fully analyzed in the MND.

Road improvements may alter surface runoff patterns, compact soils, and disrupt irrigation flows essential for maintaining wet meadow hydrology. Changes to hydrologic connectivity can degrade meadow vegetation, reduce forage availability for cranes and raptors, and adversely affect amphibian movement and breeding habitat. The MND does not describe how road alignments, widening, or surfacing may affect hydrologically sensitive areas within the Project footprint or provide measures ensuring that meadow drainage, irrigation ditches, shallow-water features, and pasture hydrology are maintained during and after construction.

To minimize potential impacts, CDFW recommends that the Lead Agency incorporate avoidance and minimization measures addressing roadway impacts, including: (1) siting new or widened roads outside wet meadows, alkali sinks, and shallow-water habitat where feasible; (2) installation of appropriately sized and located culverts to maintain hydrologic connectivity and meadow hydroperiod; (3) implementing construction speed limits to reduce wildlife collision risk; (4) requiring contractor training on wildlife awareness; and (5) limiting construction traffic during periods of high wildlife

²³ Cayuela, H., Bonnaire, É., Astruc, G., & Besnard, A. (2019). *Transport infrastructure severely impacts amphibian dispersal regardless of life stage*. **Scientific Reports**, 9, 8214. <https://doi.org/10.1038/s41598-019-44706-4>

²⁴ Cork, N. A., Fisher, R. S., Strong, N., Ferranti, E. J. S., & Quinn, A. D. (2024). A systematic review of factors influencing habitat connectivity and biodiversity along road and rail routes in temperate zones. *Frontiers in Environmental Science*, 12:1369072. <https://doi.org/10.3389/fenvs.2024.1369072>

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movement. Incorporating these measures will help ensure road-related impacts to biological resources, including movement, foraging, breeding, and hydrologic function, are avoided or minimized to less-than-significant levels.

SUBMITTING ENVIRONMENTAL DATA

CEQA requires that information developed in environmental documents be incorporated into a database, which may be used to make subsequent or supplemental environmental determinations. (Public Resources Code, § 21003, subd. (e).) Accordingly, please report any observation of special status species to the CNDDDB using the CNNDDB field survey form^{25,26}.

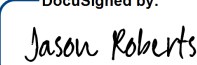
FILING FEES

The Project, as proposed, would have an impact on fish and/or wildlife, and an assessment of filing fees is necessary. Fees are payable upon filing the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order 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

CDFW appreciates the opportunity to comment on the MND to assist the Lead Agency in identifying potential Project impacts on biological resources. If you have any questions, please contact Erika Iacona, Senior Environmental Scientist, by email at R1CEQARedding@wildlife.ca.gov.

Sincerely,

DocuSigned by:

132FDFECF23F4FD...

Jason Roberts, Regional Manager
Northern Region

ec: Bruce Grove, SHN Consulting Engineers and Geologist
bgrove@shn-engr.com

²⁵ California Department of Fish and Wildlife. (2016, November). *CNDDDB Online Field Survey Form User Guide*. Retrieved from <https://nrm.dfg.ca.gov/fieldSurvey/default.aspx>

²⁶ California Department of Fish and Wildlife. (n.d.). *Submitting data to the California Natural Diversity Database (CNDDDB)*. Retrieved from <https://wildlife.ca.gov/Data/CNDDDB/Submitting-Data>

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