

State of California – Natural Resources Agency DEPARTMENT OF FISH AND WILDLIFE Bay Delta Region 2825 Cordelia Road, Suite 100 Fairfield, CA 94534 (707) 428-2002 www.wildlife.ca.gov

February 1, 2024

Governor's Office of Planning & Research

GAVIN NEWSOM, Governor

CHARLTON H. BONHAM, Director

Feb 02 2024

Robert Salisbury, Senior Planner County of Santa Clara 70 W. Hedding Street, East Wing, 7th Floor San Jose, CA 95110 Robert.Salisbury@pln.sccgov.org

STATE CLEARING HOUSE

Subject: Sargent Ranch Quarry Project, CDFW Late Comments on Draft Environmental Impact Report, SCH No.2016072058, Santa Clara County

Dear Robert Salisbury:

The California Department of Fish and Wildlife (CDFW) appreciates the opportunity to provide comments and recommendations on the draft Environmental Impact Report (EIR) for the Sargent Ranch Quarry Project (Project). CDFW is providing these comments as a California Environmental Quality Act (CEQA) Trustee Agency and potentially Responsible Agency due to potentially significant effects of proposed Project activities on California fish and wildlife that may trigger Project approvals within its jurisdiction.

CDFW received a Notice of Availability of a draft EIR from Santa Clara County (County) in July 2022 for the Project pursuant the CEQA and CEQA Guidelines.¹ The comment period for the draft EIR closed on November 7, 2022. CDFW understands that the County is still in the process of preparing a Final EIR for the Project.

These comments, although they are being filed outside of the official CEQA comment period, are being provided in the interest of addressing 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. Given its regulatory interest and the current ongoing status of preparation of the Final EIR, CDFW requests that the County exercise its discretion under CEQA Guidelines § 15088(a) to consider these comments, regardless of the close of the official comment deadline, and incorporate its recommended revisions and mitigation measures in the Final EIR.

CDFW 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; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd.

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.

(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 fish and wildlife resources.

CDFW is also submitting comments as a potentially **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. As proposed, for example, the Project may be subject to CDFW's Lake and Streambed Alteration (LSA) 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.), the Project proponent may seek related take authorization as provided by the Fish and Game Code.

PROJECT DESCRIPTION SUMMARY

Proponent: Sargent Ranch Partners, LLC

Objective: The Project Proponent proposes to develop a sand and gravel surface mining operation on an approximately 403-acre site consisting of the development of an open-pit and gravel surface mine in four areas (Phases 1 thorough 4) on approximately 298 acres. The remaining 105 acres would be designated as a "geotechnical setback area" that would buffer excavation areas from surrounding uses and where excavation may occur to increase slope stability.

Location: The Project is located on the 5,154-acre Sargent Ranch property within an unincorporated area of southern Santa Clara County approximately four miles south of the City of Gilroy. The approximately 403-acre proposed Project is located on the eastern portion of the property and is currently used for cattle ranching. The coordinates for the approximate center of the Project are 36.91720° N latitude and 121.562667 W longitude (NAD 83 or WGS 84). Assessor's Parcel Numbers are 810-38-014, 810-38-016, and 810-38-017.

Timeframe: Construction of the processing plant, office/scale house, conveyor belt, process water pond, stormwater basins, roads to access Phases 1 and 2, and related facilities would occur over the first nine months. Mining operations would be conducted for 30 years in four phases. The duration of the phases would be approximately 10 years for Phase 1, 13 years for Phase 2, 4 years for Phase 3, and 2 years for Phase 4.

COMMENTS AND RECOMMENDATIONS

CDFW offers the comments and recommendations below to assist the County in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources.

I. Environmental Setting, Mitigation Measures and Related Impact Shortcoming

Would the Project interfere substantially with movement of any native resident or migratory fish and wildlife species or with established native resident or migratory wildlife corridors, or impede use of native wildlife nursery sites?

COMMENT #1: Wildlife Corridors and Habitat Connectivity

Sections: 3.4.3 Environmental Setting, 3.4.3.5 Wildlife Corridors and Habitat Connectivity, pages 3.4-34; 3.4.4 Impact Evaluation, Impact 3.4-15: Implementation of the Project would interfere substantially with wildlife movement, page 3.4-106; Figure 2-13 Tar Creek Bridge (cross section).

Issue 1: The proposed Project includes components such as construction of mining pits, buildings and other processing plant facilities, railroad spur, conveyor belt, roads, and removal of riparian vegetation. Implementation of the proposed Project could prevent, decline, or otherwise alter use of existing wildlife movement corridors for mountain lion (*Felis concolor*), American badger (*Taxidea taxus*), mule deer (*Odocoileus hemionus*), bobcat (*Lynx rufus*), gray fox (*Urocyon cinereoargenteus*), and other species. The Project could result in direct mortality, reduced reproductive success, reduced frequency of care for young resulting in reduced health or vigor of young, forcing wildlife into movement paths and areas that could increase their vulnerability to vehicle strikes and predation, and reduction in genetic exchange affecting intra-species diversity. Isolation of subpopulations limits the genetic exchange of populations and increases the risk of local extirpation.

The draft EIR includes mitigation measures for impacts of the Project on wildlife movement. However, the analysis in the draft EIR concluded that the measures were not sufficient to reduce the impact to less-than-significant. The draft EIR states that the Project is located in an area of important habitat connectivity for wildlife and the expected impacts of the Project on wildlife movement are significant and unavoidable. However, CDFW has ascertained that there is potential to reduce impacts of the Project on wildlife movement to a less-than-significant level through Project infrastructure and component redesign, as well as compensatory mitigation measures for impacts that cannot be completely avoided that were not identified within the draft EIR.

CDFW therefore recommends that the EIR include feasible mitigation measures to reduce significant impacts of the Project on wildlife connectivity for species, including,

but not limited to, the mountain lion, which is a candidate threatened species under CESA (CEQA Guidelines, §15380, subds. (c)(1) and (c)(2)), meso-carnivores and herbivores as well as American badger, which is considered rare under CEQA (CEQA Guidelines, §15380 subds. (b)(2)) due to its designation by CDFW as a California Species of Special Concern (SSC).

Issue 2: During high flow events, the proposed Tar Creek bridge design shows the water stage approximately one foot under the bridge deck (100-year event) or approximately 2.5 feet under the bridge deck (10-year event). The proposed bridge abutment locations are such that at these water stages, the water would completely cover the creek banks, preventing wildlife movement under the bridge. Other flood stage intervals were not included in Figure 2-13; however, the upper approximately four feet of both creek banks are proposed to be covered by riprap. Studies show that wildlife are not amenable to utilizing undercrossings with high waterflow and will avoid movement across areas of riprap even when those are the only areas where water is not present (Pathways for Wildlife 2020).

Evidence impact would be significant: The Project is located between populations of various species of wildlife in the Santa Cruz Mountains, Diablo Range and Gabilan Range. The draft EIR (section 3.4.3.5; Figures 3.4.7 and Figure 3.4.8) states that the Project is located within an area of important habitat connectivity for wildlife as several linkages converge on or near the Project area. The draft EIR states (p. 3.4-35) that the area immediately west of the Project area is critical for wildlife to move between the Santa Cruz and Gabilan Ranges, and that the Pajaro River adjacent to the Project to the south-east is important to maintaining connectivity from west to east, and north to south between the Santa Cruz and Gabilan Ranges for wildlife moving across this landscape.

Studies on wildlife movement in the vicinity of the Project area using motion-sensor cameras have documented the importance of riparian habitats in the Pajaro River floodplain and at U.S. 101 crossings (Pathways for Wildlife 2013) for mule deer, bobcat, coyote (*Canis latrans*), raccoon (*Procyon lotor*), and striped skunk (*Mephitis mephitis*). The draft EIR also states (section 3.4.3.5) that based on recent studies by Peninsula Open Space Trust (POST) and Pathways for Wildlife from 2019 to 2020 (T. Diamond, pers. comm.), the Tar Creek undercrossing (draft EIR Figure 3.4.8) is particularly important to dispersing and resident wildlife, including American badger and gray fox, to move back and forth under U.S. 101, and it supported the highest diversity and abundance of mammals. The draft EIR states under Impact 3.4-11 that a mountain lion was observed within the Project area in 2004, and the Project area could be part of a mountain lion territory and serve as foraging and dispersal habitat.

The Project is located along a pinch-point for the remaining natural linkages connecting the Santa Cruz and Gabilan Ranges and further east to the Diablo Range. Maintaining

connectivity though these linkages is critical to ensure current and future wildlife populations' abilities to move and adapt to a changing climate and habitat conditions. A number of studies are currently underway or have recently been completed that demonstrate the need for, and are attempting to improve, connectivity between the Santa Cruz, Gabilan, and Diablo Ranges. Data from the Mountain Lion Connectivity Modeling for the California Bay Area Linkage Network [BIOS ds864] indicate that the Project area serves as core habitat for mountain lion and serves as one of the primary areas to provide connectivity between the Santa Cruz and Gabilan Ranges, and the Project has the potential to further reduce gene flow, species movement and access to the Diablo Range via the Coyote Valley. Similarly, Mountain Lion Predicted Habitat -CWHR M165 [BIOS ds2616] data show that the Project area contains some of the only high-quality mountain lion habitat in between the Santa Cruz and Gabilan Ranges. The Project area also serves as a key point of both north-south and east-west connectivity for the American Badger (American Badger Connectivity Modeling for the California Bay Area Linkage Network [BIOS ds854]; American Badger Predicted Habitat - CWHR M160 [BIOS ds2611]).

The Santa Cruz Land Trust is leading the development of the Santa Cruz Mountains to Gabilan Range Linkage Conservation and Enhancement Plan (SCMGR Plan, https://experience.arcgis.com/experience/716de4f1100044779354ea8a3c8aff9f/) to improve connectivity between the Santa Cruz and Gabilan Ranges. One of the key planning areas, from Lomerias Muertas to Sargent Hills, includes the proposed Project. This area can facilitate east-west movement between the southern Santa Cruz Mountains and the Lomerias Muertas, including through the two undercrossings along U.S. 101. East of U.S. 101, the confluence of Tar Creek with Carnadero Creek, and the Pajaro River to the south, provide a series of riparian pathways to facilitate connectivity between expansive grasslands, oak savannas, and oak woodlands in the Sargent Hills and the extensive grasslands and pond habitats in the Lomerias Muertas and Flint Hills. This area may provide a pathway for species that utilize grasslands, including specialists such as American badger, as well as riparian areas including black-tailed deer and mountain lion. The area supports regional connectivity to the Diablo Range, through the Upper Pajaro Valley with wildlife connectivity linkages to other planning projects underway that will enhance east-west connectivity for the species above, including the Coyote Valley Master Plan, (https://www.openspaceauthority.org/ourwork/planning-coyote-valley.html) and the Pacheco Pass wildlife crossing study, (https://scv-habitatagency.org/356/Wildlife-Connectivity).

The existing conditions report for the SCMGR Plan states that impacts from the proposed Project include reduced connectivity and success of habitat linkages being created for wildlife movement in the linkage area. Mining and adjacent land uses would result in habitat loss, degradation, and fragmentation in an intact area of habitat that connects the Santa Cruz Mountains to the Upper Pajaro, Lomerias Muertas, and the Gabilan Range, via the Aromas Hills. Existing riparian connections between the

southern Santa Cruz Mountains and the Upper Pajaro Valley and adjacent habitat in the Lomerias Muertas may be significantly deterred or inhibited through Project development. Specifically, wildlife access and use of the Tar Creek overpass and Pajaro River Bridge crossing sites would be impacted (Diamond *et al.* 2022). The Project may severely limit and reduce opportunities to enhance permeability across U.S. HWY 101 in this area, including transportation infrastructure enhancements and protection of adjacent habitat. The Tar Creek Overpass, which is in the proposed Project area had the highest richness of native species in the Santa Cruz-Gabilan Range study area, including American badger, gray fox, and long-tailed weasel. The undercrossing connects upland habitat in the Sargent Hills to the agricultural easement of Carnadero Preserve in the east. A concentration of roadkill was identified south of this site and two American badger mortalities were recorded nearby.

The draft EIR states that construction of the proposed processing plant likely represents the greatest construction impact of the Project to wildlife movement given the concentration of equipment and personnel at that location during construction and its proximity to the important U.S. 101 Tar Creek crossing at the Union Pacific Railroad (UPRR) tracks. The draft EIR states construction impact from disturbance would be significant (Impact 3.4-15). The draft EIR states that the Project could impact the ability of wildlife to access and utilize existing and/or future wildlife crossings in the Project area. Project construction and operation could cause dispersing animals to cross over U.S. 101 instead of using undercrossings such as the Tar Creek/UPRR undercrossing, as the physical footprint of the processing plant and operations could deter dispersing wildlife. The proposed conveyor belt would limit access to the U.S. HWY 101 bridge over the Pajaro River or highway undercrossings south of that bridge, as wildlife would need to cross under the conveyor belt to access these crossings. The Phase 1 mining areas would make it more difficult to access the culvert and areas northwest of the U.S. 101 bridge over the Pajaro River. Where wildlife is not able to, or are not comfortable accessing wildlife crossings, they may be pushed onto existing roadways, leading to direct mortality. Additionally, because most of the detections of animals using U.S. 101 undercrossings during the most recent road ecology study in the Project vicinity, including the Tar Creek undercrossing, occurred during the daytime (draft EIR - T. Diamond, pers. comm.) the impacts of operations from the Project will further deter wildlife movement.

Construction would also result in removal of riparian habitat at the Tar Creek bridge and oak woodland along the access road which provide cover for dispersing wildlife. However, the draft EIR states that the amount of vegetation removal would be low and sufficient cover would remain post-construction. However, vegetation in this corridor is already limiting. The existing riparian corridors are important to maintain connectivity for daily movement and migration, foraging, genetic interchange, and population movement in response to environmental change or natural disaster.

CEQA Guidelines § 15021 states that it is the duty of public agencies to give major consideration to avoid or minimize environmental damage and not approve a project if there are feasible mitigation measures that would substantially lessen significant effects of the Project. The draft EIR has determined the Project impacts to wildlife movement are significant and unavoidable. Again, as described herein, CDFW has ascertained that there is potential to reduce impacts of the Project on wildlife movement to a less-than-significant level through Project infrastructure and component redesign, as well as compensatory mitigation measures for impacts that cannot be completely avoided that were not identified within the draft EIR.

Recommended Potentially Feasible Mitigation Measures to minimize significant impacts or to potentially reduce impacts of the Project on wildlife movement corridors to less-than-significant levels include the following:

Mitigation Measure #1: Analysis and Monitoring of Wildlife Corridors

CDFW recommends consultation with an expert in wildlife passage design and conduct in-depth studies on existing use of wildlife corridors within the Project area and surrounding areas in order to evaluate extent of future impacts of the Project on wildlife connectivity, and to provide a basis for infrastructure and Project component redesign (see Mitigation Measure #2). Data collection methods should enable detection of species that have been found to utilize the existing movement corridors while targeting large carnivores, meso-carnivores, and herbivores. While the draft EIR states that crossings and connectivity for herpetofauna are not important, these species should be included in any studies given the presence of multiple reptile and amphibian species in the area, including the northwestern pond turtle and the California tiger salamander. Pre-construction study results should be used to develop biologically feasible movement corridor improvements such as new or improved wildlife crossings. The cumulative impacts of adjacent projects on wildlife corridors should be considered. Wildlife movement corridors should continue to be monitored for wildlife passage during all Project phases (construction, operation, reclamation, and revegetation monitoring). Post-construction monitoring would assess use of wildlife movement corridors and evaluate effectiveness of new and/or improved crossings.

Continued monitoring of any Project wildlife corridor should be a condition of approval to ensure any approved design continues to provide adequate wildlife movement. The protocol for the baseline survey, post-construction surveys, site selection criteria and design criteria for the development of the wildlife connectivity structures should, at a minimum, follow the protocols outlined in the California Department of Transportation (Caltrans), Wildlife Crossings Design Manual (Caltrans, 2009), CDFW's Transportation Planning Companion Plan, associated with the State Wildlife Action Plan (CDFW, 2016), and the Federal Highway Administration Wildlife Crossing Structure Handbook (FHWA, 2011). CDFW recommends that monitoring data be analyzed, summarized,

and results discussed in reports that may be posted to the Project webpage and be submitted to CDFW and other agencies or organizations that have a duty or interest in the effectiveness of wildlife movement corridors.

Mitigation Measure #2: Infrastructure and Project Component Redesign

CDFW recommends the EIR analyze feasible re-designs or relocations of Project infrastructure that would improve wildlife movement opportunities and avoid or reduce the Project's significant impacts to wildlife connectivity. Additionally, CDFW recommends a scientifically defensible wildlife corridor width be required. The functional width of usable linkages should be described and maintained outside of the zone of influence of edge effect. In general, a corridor should be at least two kilometers (km) wide, except at unavoidable bottlenecks such as freeway crossing structures (Beier 2018). The effective corridor width is the minimum spatial dimension needed to mitigate human influence on animal movement through the corridor (Ford *et al.*, 2020). The effectiveness of a corridor is further affected by the type and extent of human activities and land use practices within and adjacent to the corridor (Harrison 1992). Corridor widths need to be even greater if residential development, trails, or human activity are permitted within the boundaries of the designated wildlife corridor.

Redesign options may include locating the processing plant and its facilities further away from Tar Creek in order to provide wildlife refugia and dispersal habitat. Furthermore, to assess impacts of the Project from noise disturbance both during construction and post-construction, a sound analysis should be conducted comparing existing ambient noise with future noise levels. If noise levels are expected to be at a level that would result in significant disturbance to wildlife breeding, foraging and/or dispersal then temporary or permanent sound barrier walls should be installed along the boundary of the processing plant to reduce impacts to the Tar Creek wildlife corridor to less-than-significant levels.

CDFW recommends all activities associated with replacement or reconstruction of Project facilities (e.g., culverts, bridges, and overpasses) be designed to allow for movement of native resident and migratory species that could potentially occur in the Project area. The EIR should also evaluate the feasibility of improving designs for the proposed bridge across Tar Creek. The bridge height and length should be increased to improve wildlife movement during high-flow events. If riprap must be used for bank stabilization, the riprap should be covered with smaller material that is compacted and similar to the natural channel banks and voids filled to create a walkable surface to facilitate wildlife movement under the bridge; shelving "critter crossings" may also be designed and installed for wildlife crossing. Terraced bench designs should also be incorporated to facilitate wildlife crossing in dry areas above the water stage. Benches should be a minimum of three feet wide and be slightly above the bankfull elevation to prevent wash-out and graded to meet the existing banks upstream and downstream of

the crossing. The bench elevation should provide crossing for a range of species at low and high flows.

Upon completion of the Project, the wildlife connectivity structures should be studied for an additional 12- to 24-month period, at minimum, to determine the effectiveness of utilization by wildlife of the structures (See Mitigation Measure #1). The protocol for the baseline survey, post-construction surveys, site selection criteria and design criteria for the development of the wildlife connectivity structures should follow the protocols outlined in: The California Department of Transportation (Caltrans), Wildlife Crossings Design Manual (Caltrans, 2009), the Federal Highway Administration Wildlife Crossing Structure Handbook (FHWA, 2011), and CDFW's Transportation Planning Companion Plan, associated with the State Wildlife Action Plan (CDFW, 2016).

Mitigation Measure #3: Compensatory Mitigation – Local Area Wildlife Movement Corridor

Off-site compensatory mitigation should be implemented to completely offset unavoidable impacts if Project infrastructure redesigns such as relocation of the processing plant and other facilities at a biologically appropriate distance away from wildlife movement corridors, design changes to the proposed bridge on Tar Creek, and other measures to avoid significant impacts to existing wildlife corridors within the Project area do not fully avoid impacts to wildlife corridors.

CDFW does not consider Project impacts to the habitat linkages that are crucial for wildlife movement to be significant and unavoidable. The EIR should include an analysis of beneficial and feasible crossings at off-site locations that could be constructed, as well as enhancement of existing structures, to improve wildlife connectivity. For example, studies by POST and Pathways for Wildlife showed that the low height of the Tick Creek culvert at Old Monterey Road likely prohibits use by black-tailed deer.

Crossing enhancements could include terracing for dry passage, directional fencing to prevent animals from crossing roads to reduce wildlife-vehicle strikes, removal of accumulated sediment that may block undercrossings, removal of vegetation debris, control of invasive plant species, and allowing more natural light to penetrate at each end of crossing structures. Enhancement of riparian habitat on both Sargent and Tar Creek, which likely serve as important movement corridors for wildlife, should also be evaluated for enhancement. The EIR should specify in a measure that studies will be conducted within the Sargent and Tar creek movement corridors to assess movement patterns for wildlife using this area.

CDFW recommends the following design features be considered for dedicated wildlife crossings: minimize lengths (entry to exit) of dedicated wildlife crossings for certain species guilds and/or incorporate designs (grates, shelving, terracing, etc.) that still

allow light penetration; maximize heights of crossings or add bridges for larger species guilds; provide natural cover types to encourage use; incorporate bench designs to allow use of the crossings during flooding; and provide smaller animal escape within or adjacent to the dedicated wildlife crossings. Dedicated wildlife crossing structures should ensure permeability, be evaluated on a species-specific basis, and be required to meet specific minimum dimensions for increased probability of wildlife utilizing these structures. Specific care should be afforded to ensure that any wildlife crossing structure design incorporates generous openness and clear line of sight from entry to exit to maximize detection of the crossing by species at the time of encounter and to ensure use.

CDFW recommends that all new and enhanced wildlife crossing locations and configurations demonstrate efficacy for target species use be a requirement of the final Project design and included as a condition of approval of the EIR by the County. CDFW recommends that a Technical Advisory Committee of resource agency representatives and experts in wildlife movement and wildlife crossings be created and engaged to review and advise on initial datasets used to design crossings, alternative analysis and constructability of proposed designs, and proposed monitoring plans. CDFW staff are available to discuss potential wildlife connectivity enhancement projects within the Project area and surrounding areas with the Project proponent.

II. Closely Related Past, Present, and Reasonably Foreseeable Probable Future Projects

COMMENT #2: Cumulative Impacts to Biological Resources

Sections: 3.1.6 Approach to Cumulative Impact Analysis, 3.4.4.4 Cumulative Analysis (Biological Resources), Impact 3.4-20

CEQA Guidelines §15355 defines a cumulative impact as the condition under which two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The cumulative impact from several projects is the change in the environment which results from the incremental impact of the Project when added to other closely related past, present, and reasonably foreseeable probable future projects.

CEQA Guidelines § 15130(b)(3) states that Lead Agencies should define the geographic scope of the area affected by the cumulative effect and provide a reasonable explanation for the geographic limitation used. CEQA Guidelines § 15130(b)(2) states that factors to consider when determining whether to include a related project should include the nature of each environmental resource being examined, the location of the project and its type.

Issue 1: The draft EIR sets the area for the Cumulative Impact Analysis for Biological Resources as the Santa Clara Valley Habitat Agency's (SCVHA) Valley Habitat Plan study and permit area (Figure 3.4-9). The draft EIR further states that Project activities could contribute to cumulative harm to protected terrestrial species and loss of their habitats. (Impact 3.4-20).

The draft EIR omits proposed projects located in San Benito County from the Cumulative Impact Analysis that are adjacent to the Project area. As implemented, the proposed projects would create additional barriers to wildlife connectivity in the Project area and in the critical linkage between the Santa Cruz and Gabilan ranges. The proposed projects in San Benito County would exacerbate Project impacts and would reduce the likelihood of success for any wildlife connectivity actions in the EIR, and to CDFW requested Mitigation Measures #1-3 in Comment 1: Wildlife Corridors and Habitat Connectivity.

Evidence impact would be significant: The Project is located between populations of various species of wildlife in the Santa Cruz Mountains, Diablo Range and Gabilan Range. The draft EIR (section 3.4.3.5; p. 3.4-35) states that the area immediately west of the Project area is critical for wildlife to move between the Santa Cruz and Gabilan Ranges, and that the Pajaro River adjacent to the Project to the south-east is important to maintaining connectivity from west to east, and north to south between the Santa Cruz and Gabilan Range for wildlife moving across this landscape. The Project includes plans to create wildlife crossings on U.S. 101 to allow for wildlife movement in the critical linkage between Santa Clara and San Benito counties.

The projects below are immediately across U.S. 101 from the Project area and will create wildlife connectivity barriers to the South and East of the Project, which may lead to additional mortality and avoidance of the critical linkage. Together the projects will include development of more than 2,900 acres of land in San Benito County on the border with Santa Clara County.

Betabel Road project (111.61-acre site, APNs: 013-150-024, 013-150-025, 013-150-031, and 013-150-033). Construction has begun on an initial phase of development for a roadside development project at the Betabel Road commercial node and subsequent phases are currently undergoing environmental review. The project site is located at 9644 Betabel Road, at the interchange of U.S. 101 and Betabel Road in unincorporated San Benito County. The confluence of the Pajaro and San Benito Rivers is to the west of the project site. The project would develop/improve approximately 26 acres and create approximately 108,425 square feet (sqft) of total commercial and building space on the project site, consisting of a gas station with convenience store, a restaurant, amusement buildings with exhibits, a motel

and banquet hall with outdoor pool and outdoor movie screen, and an outdoor event center.

- San Benito Ag Center (15-acre site, APN: 012-010-031). The project site is located at 1720 Searle Road, which connects to the Highway 129 and Highway 101 intersection, in unincorporated San Benito County. The project will consist of three main structures: a 16,450 sqft convenience store and food hall, a 12,500 sqft truck service building, and a 13,500 sqft cold storage building. Three types of fuel are proposed standard gas/diesel, compressed natural gas (CNG), and hydrogen fuel, to support greener transportation. Parking is available with Electric Vehicle (EV) chargers and electric auxiliary power unit (APU) hookups, allowing trucks waiting on a time slot to park and turn off their engine while waiting, and still keep the refrigerated unit cold.
- Travelers Station (2.6-acres, APN: 012-030-023). The proposed project is located at the southwest corner of the intersection of U.S. 101 and State Route (SR) 129. The proposed project consists of a Conditional Use Permit and Site and Architectural approval for a 4,000 sqft. convenience store, auto and truck fueling services, electric charging stations and an informational kiosk advising visitors and residents of attractions, events, and opportunities available throughout the County. The project proposes 24-hour operation.
- Strada Verde Innovation Park (2,767-acres). The project is located approximately 2.5 miles southeast of the US-101/SR-25 interchange in an incorporated area of northwest San Benito County. The site is bounded by the Pajaro River/County line north, a segment of the UPRR line and SR-25 (Bolsa Road) to the northeast, and the steeper topography of the Lomerias Muertes Mountains (Flint Hills) to the west. The project consists of an application for a General Plan Amendment, Specific Plan, Zone Change, Vesting Tentative Map and Development Agreement to establish an automated vehicle testing and research and development business center incorporating up to 7,221,159 sqft of development.
- Ranch 35 Quarry Use Permit and Reclamation Plan (APN: 012-090-023). The Ranch 35 Quarry project site is located at 991 San Juan Highway immediately east of the U.S. 101/Highway 156 interchange and two miles northwest of the City of San Juan Batista in unincorporated, northwestern San Benito County. Stevens Creek Quarry, Inc. (SCQ) is seeking approval of use permit and reclamation plan from San Benito County to develop, operate, and ultimately reclaim the Ranch 35 Quarry, a new aggregate mining and processing operation. The Ranch 35 Quarry operation would include mining, processing, and materials recycling operations. Mining would occur in phases over an anticipated 75-year period with maximum annual sales not to exceed

> one million tons. Upon completion of the proposed mining, all mining equipment and ancillary structures would be removed, and the site would be reclaimed as grazing land in accordance with the proposed reclamation plan.

Recommended Potentially Feasible Mitigation Measures to minimize significant impacts or to potentially reduce impacts of the Project on cumulative impacts to less-than-significant levels include the following:

Mitigation Measure #4: Addition of Reasonably Foreseeable Probable Future Projects

The EIR should include the proposed projects listed above located in San Benito County and their potential direct, indirect, and cumulative impacts on biological resources in relation to the Project.

The EIR should evaluate proposed mitigation measures and CDFW recommendations in light of these additional projects that will exacerbate considerable cumulative impacts from the Project. This should include impacts of noise, light, construction, and operations on wildlife movement and mortality.

Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or U.S. Fish and Wildlife Service (USFWS)?

III. Mitigation Measure or Alternative and Related Impact Shortcoming

COMMENT #3: Mountain Lion

Sections: Impact 3.4-11: Project activities would result in adverse effects on mountain lions and their habitat, page 3.4-92; Mitigation Measure 3.4-11, page 3.4-94; Figure 3.4-4 Species Observations in the Project site and Vicinity.

Issue: The mountain lion, Southern California/Central Coast (CC) Evolutionarily Significant Unit, is currently a candidate species for threatened status under CESA and is afforded the same protection as a CESA-listed species (CEQA Guidelines, §15380, subds. (b)). Construction of Phases 1 and 2 mining pits and/or geotechnical setback areas would permanently impact coast live oak forest and woodland and northern coastal scrub/diablan sage scrub that may provide suitable mountain lion denning and/or foraging habitat. Implementation of the Project could result in direct mortality of young, loss of denning habitat, reduced reproductive success, reduced frequency, or duration of care for young resulting in reduced health or vigor of young. Unauthorized take of this species pursuant to CESA is a violation of Fish and Game Code section 2080 et seq.

The Santa Cruz Mountains, Diablo Range, Gabilan Range, and greater Central Coast area must be connected to one another, and to the Sierra-Nevada Mountains, for mountain lions to persist throughout the Central Coast (Dellinger *et al.* 2020). The impacts to gene flow for the species is the larger concern when contrasted with individual take. Isolation of subpopulations limits the genetic exchange of populations at risk of local extinction through genetic and environmental factors preventing the recolonization of suitable habitats following local extirpation, ultimately putting the species at risk of extinction. An effective way to reduce these impacts is avoidance of take and reduction of population impacts with Project design features such as increased wildlife crossing opportunities in the critical area of the Diablo Range to the Santa Cruz Mountains and connecting Coyote Valley which would allow movement for the Central Coast North (CC-N) into the Central Coast Central (CC-C) subpopulation areas to allow for genetic exchange along with habitat protections/land conservation easements for areas on either ends of wildlife crossings.

Mountain lions have a wide-ranging nature and large territories, as well as the need for dispersal (especially of young males). In order to maintain genetic diversity, large blocks of permanently conserved habitat and unobstructed and sizable safe travel corridors between them are essential for long-term population persistence and stability (Vickers, 2014). This area is essential for the viability of the CC-N subpopulation, particularly the Santa Cruz mountains, which is experiencing restricted gene flow. Greater landscape permeability would promote gene flow among distinct subpopulations. The CC-N population has low genetic diversity, and the CC-C population has relatively intermediate levels. Gene flow through maintenance of existing occupied habitat within improved and additional wildlife corridors will promote long-term persistence of isolated subpopulations (Gustafason *et al.* 2019). It is important that the CC-N subpopulation remain connected to adjacent mountain lion populations via suitable habitat and unobstructed sizeable movement corridors. Decreased and impeded connectivity in this area would quickly increase the decline in genetic diversity of mountain lions in southern and central parts of the State (Dellinger et al., 2020).

The draft EIR discusses lack of potential denning habitat for mountain lion within the Project area due to the open grassland and oak woodland landscape which would not provide sufficient concealment for dens. However, the draft EIR states that Project construction activity could disturb foraging or dispersing mountain lions, and the Project would result in loss of foraging habitat for mountain lions.

The SCVHA Geobrowser (SCVHA 2022) includes mapping of northern coastal scrub/diablan sage scrub habitat within the Project's Phase 2 impact area (approximate center coordinates are 36.929° N latitude and -121.562° W longitude, NAD 83 or WGS 84). This habitat type is likely to include thickets which may be suitable mountain lion denning sites; however, this habitat is not mapped within Figure 3.4-4.

The draft EIR also states that Project operational activities would result in a level of disturbance that would likely preclude mountain lions from using the Project area during hours of operation and would deter individuals from using certain undercrossings such as the Tar Creek/UPRR undercrossing.

The draft EIR states that the impacts of both Project construction and operation on mountain lions and their habitat are **less-than-significant after mitigation** but does not offer feasible and specific minimization measures and compensatory mitigation to completely offset impacts.

Recommended Potentially Feasible Mitigation Measures to minimize significant impacts or to potentially reduce impacts of the Project on mountain lion to less-than-significant levels include the following:

Mitigation Measure #5: Habitat Assessment

CDFW recommends that a qualified biologist conduct a more thorough habitat assessment for all suitable denning, dispersal and foraging habitats within the Project area and surrounding area. The habitat assessment should include a field survey of coast live oak forest and woodland and northern coastal scrub/diablan sage scrub habitat to identify thickets, caves, or other natural cavities that may provide denning habitat. Mapping should also include the following: the Project area with identified wildlife linkages, identified Project undercrossing/overcrossing, and designated wildlife crossing locations and adjacent habitat to assist with development and implementation of avoidance, minimization, and mitigation measures. The results of the habitat assessment, field survey and mapping should be presented in the EIR.

Mitigation Measure #6: Den Survey and Buffers

CDFW recommends that the EIR include a measure stating that if the qualified biologist identifies potential denning habitat, a focused survey for dens should be conducted in advance of Project implementation. If a den with kittens is found, an appropriate buffer that will result in avoidance of impacts should be established between the Project activities and the den. The buffer should be clearly marked and maintained until kittens are no longer present. CDFW should be contacted within 24 hours if a den is found.

Mitigation Measure #7: Avoidance-Buffer for Corridor Areas

CDFW recommends that the EIR include a measure stating that during construction, movement corridors such as drainages and riparian areas maintain a minimum 0.25-mile buffer to minimize impacts to mountain lion movement through these areas.

Mitigation Measure #8: Compensatory Mitigation

Applying mitigation measures specific to species with very different life histories and habitat requirements to mountain lion is not acceptable, therefore the EIR should include mitigation measures that directly address all potential impacts of the Project to mountain lion, including measures to avoid "take" under CESA and compensatory mitigation for all habitat types, including denning, dispersal and foraging.

The only mitigation measure for mountain lion in the draft EIR is Mitigation Measure 3.4-11 which refers to implementation of Mitigation Measures 3.4-4c, 3.4-5b, and 3.4-15. Mitigation Measure 3.4-4c is specific to compensatory mitigation for impacts to habitat for California red-legged frog (*Rana draytonii*); Mitigation Measure 3.4-5b is specific to California tiger salamander (*Ambystoma californiense*); and Mitigation Measure 3.4-15 relates to wildlife movement (as discussed above in this letter).

Mitigation Measure 3.4-11, which, as stated above, references measures 3.4-4c and 3.4-5b which include compensatory mitigation at a 2:1 ratio for California red-legged frog and 1:1 ratio for California tiger salamander. If the 2:1 ratio or 1:1 ratio are expected to be implemented for mountain lion, the compensatory measure is not adequate to fully offset the permanent loss of suitable mountain lion denning or foraging habitat and does not meet the full mitigation standard under CESA. Furthermore, restoration of impacted areas after 30 years of Project operations does not reduce impacts to less--than-significant due to the large temporal loss of mountain lion habitat and its biological and ecological functions.

CDFW considers compensation for permanent impacts to mountain lion habitat in the absence of a proposed mitigation location to be a minimum of a 3:1 replacement ratio as appropriate. Mitigation lands should be established at a safe distance away from Project construction and operational activities to avoid disturbance and be protected in perpetuity under a conservation easement with an endowment established for long-term management of the lands.

Mitigation Measure #9: Take Authorization

CDFW highly recommends that the Project proponent obtain take authorization from CDFW through issuance of an Incidental Take Permit (ITP) if full avoidance of take during construction and/or operations is not feasible. The EIR must include all biologically appropriate and feasible take avoidance measures.

COMMENT #4: Tricolored Blackbird

Section: Impact 3.4-8.

Issue: Tricolored blackbird (*Agelaius tricolor*) is listed as threatened under CESA (CEQA Guidelines, §15380, subds. (c)(1)). Unauthorized take of this species pursuant to CESA is a violation of Fish and Game Code section 2080 et seq. Implementation of the proposed Project could result in loss of breeding and foraging habitats, nest abandonment, inability to reproduce, reduced reproductive success, loss or reduced health or vigor of eggs or young, and reduced frequency or duration of care for young resulting in reduced health or vigor of young.

Although the Project is not covered under the Santa Clara Valley Habitat Conservation Plan/Natural Community Conservation Plan (SCVHP), the SCVHP identifies suitable habitat within the Project area for tricolored blackbird. Section Impact 3.4-8 states tricolored blackbirds have not been observed within the Project area during surveys conducted from 2000 to 2017. However, the type of survey (e.g. protocol, focused, reconnaissance) including number and length of surveys are not specified and the survey radii of 250 feet is not large enough to detect tricolored blackbird colonies which may be impacted by the Project.

Recommended Potentially Feasible Mitigation Measures to minimize significant impacts or to potentially reduce impacts of the Project on tricolored blackbird to less-than-significant levels include the following:

Mitigation Measure #10: Habitat Assessment

CDFW recommends that a qualified biologist conduct a thorough habitat assessment in all potentially suitable nesting habitat for tricolored blackbirds within the Project area and within 0.25-mile of surrounding lands. The results of the habitat assessment should be described in the EIR.

The Status Review for Tricolored Blackbird (CDFW 2018) identifies three resources required for successful breeding: 1) secure nesting substrate, 2) a source of water, and 3) foraging habitat that provides sufficient food resources. The majority of tricolored blackbird breeding colonies have occurred in one of five nesting substrate types: 1) wetland vegetation [either cattail (*Typha* sp.) or bulrush (*Schoenoplectus* sp.)], 2) Himalayan blackberry, 3) thistle, usually milk thistle (*Silybum marianum*) or bull thistle (*Cirsium vulgare*), 4) stinging nettle (*Urtica* sp.), or 5) agricultural grain fields.

Mitigation Measure #11: Focused Surveys

Focused surveys for tricolored blackbird should be conducted in all suitable nesting habitat within 0.25-mile of the Project boundaries during the tricolored blackbird nesting season (March 1 through August 15) no more than 30 days prior to the start of construction work. The qualified biologist should report any active tricolored blackbird nesting colonies to CDFW within 24 hours of the observation.

Mitigation Measure #12: Nest Protection Buffer

If an active tricolored blackbird nesting colony is found during surveys, the qualified biologist should establish an appropriate protective buffer of at least 0.25-mile during Project construction-related activities. The qualified biologist should document gpreconstruction baseline monitoring of the nesting colony to characterize "normal" bird behavior. In addition to direct impacts, such as nest destruction, nesting birds might be affected by noise, vibration, odors and movement of workers or equipment. Depending on site characteristics, the sensitivity of the colony, and surrounding land uses, the qualified biologist should increase the buffer size to prevent disturbance at the active nesting colony from Project construction-related activities. The qualified biologist may reduce the buffer in consultation with CDFW if there is sufficient topographic relief to protect the colony from excessive noise or visual disturbance between the construction work and the active nest colony.

Mitigation Measure #13: Monitoring

The qualified biologist should monitor the behavior of any active tricolored blackbird nest sites within the buffer area at all times during construction-related Project activities and have the authority to stop construction work in the vicinity if the birds exhibit abnormal nesting behavior which may cause reproductive failure (nest abandonment and loss of eggs and/or young). Abnormal nesting behaviors which may cause reproductive harm include, but are not limited to: defensive flights/vocalizations directed towards Project personnel, standing up from a brooding position, interrupted feeding patterns, and flying away from the nest. Project construction within line of sight of the nest should not resume until the qualified biologist has consulted with CDFW and both the qualified biologist and CDFW confirm that the bird's behavior has normalized, or the young have fledged and are foraging independently. If the qualified biologist continues to detect signs of disturbance or behavioral changes, the buffer should be increased. If the qualified biologist determines that the colony is still at risk, the qualified biologist should notify CDFW to determine the best course of action to avoid nest abandonment or take of individuals.

Mitigation Measure #14: Take Authorization

The Project proponent should obtain take authorization from CDFW through issuance of an ITP if full avoidance during construction and/or operations is not feasible.

Mitigation Measure #15: Compensatory Mitigation

As compensatory mitigation for any potential loss of nesting and/or foraging habitat, the EIR should state that suitable habitat will be conserved or created and managed in perpetuity. Suitable habitat includes wetland or upland breeding habitat, of approximately one acre in size, that has associated foraging habitat (e.g. grassland,

irrigated pasture, pesticide-free alfalfa, organic rice, or sunflower) of appropriate size (depending on insect abundance during the breeding season but estimated at a minimum of 100 acres), as described in the Tricolored Blackbird Habitat Management Recommendations Matrix, produced by the Tricolored Blackbird Working Group, 2016; or an alternative mitigation option approved by CDFW. Mitigation lands should be established at a safe distance away from Project construction and operational activities to avoid disturbance and be protected in perpetuity under a conservation easement with an endowment established for long-term management of the lands.

COMMENT #5: California Tiger Salamander

Section: Impact 3.4-5, page 3.4-68.

Issue: California tiger salamander is listed as threatened under CESA (CEQA Guidelines, §15380, subds. (c)(1)). Implementation of the proposed Project could result in direct mortality through crushing or otherwise killing (e.g., excavation or grading) of California tiger salamander present in burrows within dispersal/refugia habitat, loss of suitable breeding and foraging habitats, and reduced reproductive success. Unauthorized take of this species pursuant to CESA is a violation of Fish and Game Code section 2080 et seq.

The SCVHP identifies suitable habitat within the Project area for California tiger salamander. The draft EIR states that surveys were conducted from 2000 to 2017 both in the vicinity of the Project area and within the Project area, however, the type, number of visits and length of each survey (e.g., protocol breeding surveys, focused visual encounter surveys, reconnaissance level surveys), are not specified.

The draft EIR states that past surveys confirmed presence of successful California tiger salamander breeding in two locations on the greater Sargent Ranch property. These successful breeding locations included the pond/seasonal wetland complex in a pond/wetland complex near Tick Creek and within a pond adjacent to Sycamore Creek, a tributary of Tar Creek (both approximately 0.85 mile north of the Project area).

The draft EIR states that surveys detected California tiger salamander larvae in a seasonal wetland located within the Project's proposed Phase 1 area, but that this wetland does not hold water long enough for breeding to be successful, however, the type of water year (average or above average rainfall or dry) is not described. The draft EIR also states that the stock pond in the Phase 2 geotechnical setback area and a pond along Sargent Creek immediately south of the Phase 4 mining area have been sampled, and no California tiger salamander have been detected although they could potentially be used by breeding California tiger salamander. Four larval surveys also detected successful California tiger salamander breeding in two ponds north of Tar Creek, at sites more than 2000 feet north of the Project area.

The draft EIR states that loss of potential California tiger salamander breeding habitat within Phase 2 would only be mitigated if successful breeding is recorded. However," successful breeding" is not defined (for example, whether it refers to documented breeding or confirmed metamorphosis).

The draft EIR states that a pond within the proposed Phase 4 area is potential California tiger salamander breeding habitat may be impacted through a reduction in watershed (i.e., a reduction of the area draining to the pond). However, the draft EIR does not include how this potential impact may be assessed or monitored.

Overall, the draft EIR states that known or potential California tiger salamander breeding ponds are located within dispersal distance of all four Project phases, and the entire Project area could be used by California tiger salamander as dispersal and refugial habitat. Although the draft EIR states that no suitable breeding habitat would be disturbed during construction, the protective buffer is not specified nor analyzes if indirect impacts would occur such as changes in hydrological input to the ponds. Project implementation is expected to result in permanent loss of approximately 400 acres of California tiger salamander dispersal/refugial habitat. The draft EIR includes a mitigation ratio of 1:1 for loss of dispersal/refugia habitat. CDFW must ensure full mitigation under CESA and based on the habitat assessment in the draft EIR, a ratio of 1:1 is too low to reduce impacts to ensure full mitigation or reduce impacts to less-than-significant.

The significance analysis for California tiger salamander is based on a combination of measures, including restoration of impacted areas after 30 years of Project implementation. However, loss of California tiger salamander breeding and upland habitat over 30 years is a significant temporal loss.

Recommended Potentially Feasible Mitigation Measures to minimize significant impacts or to potentially reduce impacts of the Project on California tiger salamander to less-than-significant levels include the following:

Mitigation Measure #16: Detailed Survey Data

CDFW recommends that the EIR more fully describe the survey methodologies used when surveys were conducted within the Project area and surrounding areas from 2000 to 2017. The data, when available, should include the water year type and precipitation amounts and the number and timing of surveys for each survey season. The EIR should fully analyze whether California tiger salamander absence or unsuccessful breeding may have been the result insufficient precipitation during the survey year to maintain the appropriate hydroperiod for California tiger salamander and whether an appropriate water year would increase suitability of the ponds for successful California tiger salamander breeding.

The analysis should also include a review of the hydrology with the pond in Phase 4, and an evaluation on whether Project implementation could result in modified flows within the watershed resulting in impacts to the hydroperiod and suitability of the pond for California tiger salamander breeding.

Mitigation Measure #17: Take Authorization

The draft EIR states (Page 3.4-69) that the Project may be required to obtain ITP approvals from both the USFWS and CDFW, given the 2000-2001 occurrences of California tiger salamander within the Project area, and that these federal and state permits would address the effects of both construction and operational activities. The draft EIR also states that USFWS and CDFW ITP approvals would include conditions to reduce and compensate for impacts to California tiger salamander, but that because resource agency permits and approvals have not yet been issued and the conditions of those permits are not yet known with certainty, Project construction could result in significant impacts on California tiger salamander.

Due to the high likelihood for California tiger salamander to be present within the Project area, CDFW strongly recommends that the Project proponent apply for an ITP under CESA to provide take authorization for California tiger salamander as a covered species. However, the EIR should clearly state, as a condition of approval, that the Project proponent will apply for an ITP well in advance of Project construction. As stated earlier in this letter, issuance of a CESA Permit is subject to CEQA documentation, and the CEQA document must clearly specify impacts, mitigation measures, and a mitigation monitoring and reporting program.

The EIR should also include an appropriate compensatory mitigation ratio. The proposed 1:1 mitigation ratio is not sufficient to fully mitigate all impacts of the Project to CTS habitat. CDFW recommends a minimum 3:1 ratio for permanent impacts to breeding and/or upland dispersal habitat, and a 1:1 mitigation ratio for temporary impacts in the absence of information regarding the compensatory mitigation site, and the full restoration of the temporarily disturbed habitat. This amount of mitigation may serve to meet the full mitigation standard required under CESA. The EIR should also state that mitigation lands will be protected in perpetuity under a conservation easement with an endowment established for long-term management of the lands.

COMMENT #6: Crotch's Bumble Bee

Issue: Crotch's bumble bee (*Bombus crotchii*) is a candidate endangered species under CESA (CEQA Guidelines, §15380, subds. (c)(1)). Implementation of the Project may result in direct mortality of this species through crushing or filling of active bee colonies and hibernating bee cavities, reduced reproductive success, loss of suitable breeding and foraging habitats, loss of native vegetation that may support essential foraging

habitat. Unauthorized take of this species pursuant to CESA is a violation of Fish and Game Code section 2080 et seq.

Bumblebees are critically important because they pollinate a wide range of plants over the lifecycles of their colonies, which typically live longer than most native solitary bee species. Crotch's bumble bee has been documented to occur within the vicinity of the Project area (CDFW 2022) and historic observations occur elsewhere in the County. Recent sightings of the species in the County have also been verified on Bumble Bee Watch (https://www.bumblebeewatch.org/).

The draft EIR fails to consider the potential for this species to occur within the Project area although suitable habitat, such as grassland and northern coastal scrub/diablan sage scrub that contain requisite habitat elements for the species, including small mammal burrows, are present within the Project area. The Project may impact foraging and nesting habitat due to construction of permanent facilities and associated infrastructure.

Recommended Potentially Feasible Mitigation Measures to minimize significant impacts or to potentially reduce impacts of the Project on Crotch's bumble bee to less-than-significant levels include the following:

Mitigation Measure #18: Habitat Assessment

CDFW recommends the EIR include a thorough habitat assessment for Crotch's bumble bee within the Project area and surrounding areas that may be impacted by Project construction and operations. The assessment should be conducted by a qualified entomologist knowledgeable with the life history and ecological requirements of Crotch's bumblebee, and include all areas of suitable overwintering, nesting and foraging habitats.

Suitable habitat includes areas of grasslands and upland scrub that contain requisite habitat elements such as small mammal burrows and forage plants. Potential nest habitat (late February to late October) could contain underground abandoned small mammal burrows, perennial bunch grasses and/or thatched annual grasses, brush piles, old bird nests, dead trees, or hollow logs. Overwintering sites (November through early February) utilized by mated queens in self-excavated hibernacula could be present in soft, disturbed soil, sand, well-drained, or loose soils, under leaf litter or other debris with ground cover requisites such as barren areas, tree litter, bare patches within short grass in areas lacking dense vegetation.

Mitigation Measure #19: Surveys

The EIR should state that pre-construction surveys will be conducted within the Project area and surrounding areas which may be impacted by Project construction and/or

operations. CDFW recommends following the guidance outlined in the California Bumble Bee Atlas Habitat surveys- Cali Bumble Bee Atlas – California Bumble Bee Atlas (<u>https://www.cabumblebeeatlas.org/habitat-surveys.html</u>).

The peak flying time for Crotch's bumblebee is March to August, but bees could be flying anytime between February 1 and October 31. Surveys between March and June are expected to have highest detection probability and are therefore the period recommended for pre-construction surveys. Surveys should be conducted no more than 30 days prior to start of Project construction activities, assessing all areas of suitable habitat for overwintering, nesting and foraging at, and within ,100 feet of the proposed work area. Surveys should include a minimum of three survey efforts, over a three-day period within a temperature range of 15C and 30C although bumblebees and can fly and forage at near freezing temperatures. If the surveyor suspects Crotch bumble bee detection or occupancy, CDFW should be consulted immediately.

Goals of the surveys should be to potentially identify the bee species through non-take methods (close lens photography), foraging plants, and potential ground nest sites onsite. Surveys should include examining flowering vegetation, any potential preferred nectar plants, small mammal burrows, bunch grasses, thatch, brush piles, old bird bests, dead trees, or hollow logs. Survey results, after the protocol was followed, would be good for one year (until the next flying period season) but a pre-activity survey would still be needed prior to ground-disturbing activities.

Mitigation Measure #20: Avoidance of Nesting Colonies

CDFW recommends that inactive small mammal burrows and thatched/bunch grasses be avoided whenever feasible. If an inactive burrow may be disturbed by Project activities, it should be resurveyed for Crotch's bumble bee presence within seven days prior to the scheduled disturbance. If Crotch's bumblebee has been detected during surveys, the qualified entomologist should identify the location of all nests in or adjacent to the Project site. If nests are identified, 15-meter no-disturbance buffer zones should be established around nests to reduce the risk of disturbance or accidental take. If Project activities may result in disturbance or potential take, the qualified entomologist should expand the buffer zone as necessary to prevent disturbance or take.

Mitigation Measure #21: Take Authorization

If surveys document presence of Crotch's bumblebee within the Project area, due to the difficulty of completely avoiding take of individuals of the species, CDFW strongly recommends that the Project proponent apply for an ITP under CESA to provide take authorization for Crotch's bumblebee as a covered species.

Mitigation Measure #22: Compensatory Mitigation

CDFW recommends that the EIR include compensatory mitigation for the loss of all suitable Crotch's bumblebee habitat. Bumble bee floral resources should be mitigated at a 3:1 ratio for permanent impacts in the absence of information regarding the compensatory mitigation site. Floral resources should be replaced as close to their original location as is feasible. If active Crotch's bumble bee nests have been identified and floral resources cannot be replaced within 200 meters of their original location, floral resources should be planted in the most centrally available location relative to identified nests. This location should be no more than 1.5-km from any identified nest. Replaced floral resources may be split into multiple patches to meet distance requirements for multiple nests. The draft EIR should state that mitigation lands will be protected in perpetuity under a conservation easement with an endowment established for long-term management of the lands.

COMMENT #7: Burrowing Owl

Section: Impact 3.4-7, page 3.4-77.

Issue: The proposed Project area provides suitable nesting, overwintering and foraging habitat for the western burrowing owl (*Athene cunicularia*) which is a rare species under CEQA (CEQA Guidelines, §15380 subds. (b)(2)) because it is designated by CDFW as a California SSC.

The draft EIR states that the Project would result in approximately 337.3 acres of disturbance of potential habitat for the burrowing owl. Implementation of the Project could result in loss of suitable breeding and foraging habitat, loss of foraging habitat resulting in reduced nesting success (loss or reduced health or vigor of eggs or young) and reduced reproductive success. Mitigation Measure 3.4-7 states that implementation of compensatory Mitigation Measures 3.4-5b and 3.4-4c for California red-legged frog and California tiger salamander would benefit burrowing owls; however, the draft EIR does not specify compensatory mitigation for western burrowing owls.

The draft EIR discusses a less-than-significant determination for western burrowing owl based on a combination of measures, including restoration of impacted areas after 30 years of Project operations. Loss of western burrowing owl habitat over 30 years is a significant temporal loss. Additionally, the draft EIR does not address permanent changes to impacted areas, such as lack of small mammal burrows, a potential change in soil type and friability, and compaction of soil.

Recommended Potentially Feasible Mitigation Measures to minimize significant impacts or to potentially reduce impacts of the Project on western burrowing owl to less-than-significant levels include the following:

Mitigation Measure #23: Surveys

Given the phased approach to construction and the long-term operational period of the Project and that the Project area would likely provide suitable burrowing owl habitat for the length of the 30-year term, CDFW recommends that protocol-level surveys be conducted annually according to the CDFW 2012 Staff Report on Burrowing Owl Mitigation that's available at

https://wildlife.ca.gov/Conservation/SurveyProtocols#377281284-birds. Additional preconstruction surveys may need to be conducted after gaps of approximately 30 days of construction activities in order to detect any recent colonization of owls within the work area.

Mitigation Measure #24: Compensatory Mitigation

The EIR should include a compensatory mitigation measure specific to the western burrowing owl and independent of other species (i.e. California red-legged frog and California tiger salamander) with different life histories and habitat requirements. Compensatory mitigation for both foraging and nesting burrowing owl habitat should be at a minimum 3:1 ratio, and either in advance of impacts of the Project or within a reasonable timeframe after construction in order to reduce the temporal loss of habitat available to nesting, overwintering or foraging owls. Compensatory mitigation areas should be established outside of the Project area prior to Project implementation and the draft EIR should state that mitigation lands will be protected in perpetuity under a conservation easement with an endowment established for long-term management of the lands.

COMMENT #8: Light Impact Analysis

Issue: The draft EIR (Section 2.4.8) states that lighting will be installed at the processing plant and at the rail loading area/spur. CDFW strongly recommends that no artificial lighting is installed as part of the Project in areas where lighting currently doesn't exist. Artificial light pollution has the potential to significantly and adversely affect wildlife species and the habitat that supports them and can serve as an impediment to wildlife movement and connectivity. Unlike the natural brightness created by the monthly cycle of the moon, the permanent and continuously powered lighting fixtures create an unnatural light regime that produces a constant light output. Continuous light output for 365 days a year can also have cumulatively significant impacts on fish and wildlife populations.

Artificial night lighting can disrupt the circadian rhythms of many wildlife species. Many species use photoperiod cues for communication (e.g., bird song; Miller 2006), determining when to begin foraging (Stone *et al.* 2009), behavior thermoregulation (Beiswenger 1977), and migration (Longcore and Rich 2004). Artificial night lighting has

also been found to impact juvenile salmonid overwintering success by delaying the emergence of salmonids from benthic refugia and reducing their ability to feed during the winter (Contor and Griffith 1995). For nocturnally migrating birds, direct mortality as a result of collisions with anthropogenic structures due to attraction to light (Gauthreux, 2006) is another direct effect of artificial light pollution. There are also more subtle effects, such as disrupted orientation (Poot *et al.* 2008) and changes in habitat selection (McLaren et al. 2018). Artificial night lighting, which can impair the ability of nocturnal animals to navigate through a corridor (Beier, 2006) has been implicated in the decline of reptile populations (Perry and Fisher, 2006). Most importantly, mountain lions tend to avoid lights within approximately 500 meters of their movement pathways (Barrientos *et al.* 2023).

Recommended Potentially Feasible Mitigation Measures to minimize significant impacts or to potentially reduce impacts of the Project on fish and wildlife to less-than-significant levels include the following:

Mitigation Measure #25: Light Output Analysis.

The EIR should include, as part of Isolux Diagrams, current light levels present during pre-Project conditions and the predicted Project light levels that will be created upon completion of the Project. The EIR should include appropriate and effective avoidance, minimization or mitigation measures if an increase in light output from current levels to the projected future levels is evident. These measures should be developed in coordination with CDFW and other resource agencies to offset indirect impacts to State listed species such as California tiger salamander and mountain lion. The EIR should also state that within 60 days of Project completion, a qualified biologist will conduct a ground survey that compares projected future light levels with actual light levels achieved upon completion of the Project through comparison of Isolux diagrams. If an increase from the projected levels to the actual levels is discovered, additional avoidance, minimization or mitigation measures may also be required in coordination with the natural resource agencies. This analysis should be conducted across all potential alternatives and compared in the EIR in table and map format.

Mitigation Measure #26: Light Output Limits

The EIR should state that all Light-Emitting Diode's (LED) or bulbs installed as a result of the Project will be rated to emit or produce light at or under 2700-kelvin that results in the output of a warm white color spectrum.

Mitigation Measure #27: Light Pole Modifications and Shielding

All light poles or sources of illumination that are proposed to be installed or replacement installations of existing light sources should be designed with the appropriate shielding to avoid excessive light pollution into natural landscapes or aquatic habitat within the

Project area. In addition, the light pole arm length and mast heights should be modified to site-specific conditions to reduce excessive light spillage into natural landscapes or aquatic habitat within the Project area. The EIR should also include an analysis to determine if placing the light poles at non-standard intervals could further reduce excessive light pollution in sensitive natural landscapes or aquatic habitat.

COMMENT #9: Special-Status Plant Species

Section: Impact 3.4-1, page 3.4-42. Appendix E Biological Resources: Biotic Evaluation Sargent Ranch Quarry, Table 3 Special-status species that could occur in the project vicinity, page 41; Sargent Ranch Quarry Biotic Evaluation Peer Review – Revised, Table A. Special-Status Plant Species Potentially Occurring on the Project Site, page 5.

Issue: The draft EIR states that 10 rare plants could potentially occur within the Project area and adjacent areas. These plants are considered rare under CEQA (CEQA Guidelines, §15380 subds. (b)(2)) due to being designated a California Rare Plant Rank status by the California Native Plant Society. Special-status plants are typically narrowly distributed endemic species. These species are susceptible to habitat loss and habitat fragmentation.

The draft EIR does not clearly specify whether a desk review or full field reconnaissance of suitable habitat for special-status plants was conducted. The draft EIR does not state that any field investigation was conducted in narrowing the potential occurrences from many potential rare plant species (Table 3 and Table A as referenced above) to 10 species. Mitigation Measure 3.4-1a discusses that a focused field survey, not protocollevel survey, would be conducted for the 10 potential plant species identified.

A desk review of general habitats for special-status plant potential occurrences is not sufficient to identify Project impacts or the significance of those impacts under CEQA. The Project site is considerable in size, with over 400 acres being impacted, and a desk review would likely miss certain habitat types such as northern coastal scrub/diablan sage scrub that will be impacted by Project implementation and is potential habitat for special-status plant species.

The draft EIR does not state that recent protocol-level floristic surveys have been conducted. Mitigation Measure 3.4-1a discusses that a focused field survey will be conducted, however, this is not a protocol-level survey. Protocol-level surveys would increase potential for locating special-status plants and would sufficiently inform the Project impacts under CEQA. However, the Project implementation will occur over 30 years which may increase the potential of not detecting special-status plants through time if there are new occurrences. Therefore, protocol-level surveys should also be conducted prior to each Project component or phase that may result in impacts to special-status plants.

Mitigation Measure 3.4-1a states that the surveys will be conducted within the Project area and, additionally, 50 feet from those areas. This measure also states that, if special-status plant species are found, a 50-foot buffer would be established to avoid impacts. This survey and buffer distance should not be uniformly applied and should be increased if warranted by site-specific conditions. For example, special-status plants located downstream or in lower elevational areas could be impacted by hydrological changes or decrease in water quality and special-status plants down wind of earth moving activities could be impacted by dust coverage that may cause a reduction in photosynthesis and respiration.

Recommended Potentially Feasible Mitigation Measures to minimize significant impacts or to potentially reduce impacts of the Project on special-status plants to less-than-significant levels include the following:

Mitigation Measure #28: Protocol-level Surveys

Protocol-level floristic surveys should be conducted prior to Project implementation and, subsequently, prior to each Project component or phase that may result in direct impacts or indirect impacts (e.g. related to topography and wind, see Issue above) to special-status plants. Protocol-level surveys should occur when above ground plant material is evident and when identifying features, such as flowers and fruit, are identifiable. Multiple site visits during the survey season may be necessary to make observations during the appropriate phenological stage of all special-status plant species. *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018) shall be used to develop appropriate protocol-level surveys.

Mitigation Measure #29: Buffers

To avoid indirect impacts, an appropriate buffer distance should be established between the special-status plant occurrence and the Project impact areas. Appropriate buffer distance should be based upon review of site-specific conditions (e.g. special-status plants located downstream or in lower elevational areas in relation to the impact location, special-status plants being down wind of earth moving activities, and other conditions).

Mitigation Measure #30: Compensatory Mitigation

A review of protocol-level survey results (Mitigation Measure #23 above) should be conducted to establish appropriate compensatory mitigation ratios specific to each special-status plant species. Compensatory mitigation ratios should be developed based on the biological factors specific to each species and should be sufficient to compensate for the loss of those species.

Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS?

COMMENT #10: Sensitive Natural Plant Communities

Section: 3.4.3.3, page 3.4-16; Impact 3.4-16 Project activities would conflict with County ordinances and policies intended to protect biological resources, page 3.4-113.

Issue: The draft EIR identified coast live oak woodland and forest as being impacted (i.e. removed) by the Project. The coast live oak woodland and forest natural community (alliance code 71.060.00) includes nine associations that are designated as sensitive natural communities (rank G3S3 or rarer). For the black sage scrub alliance, five associations occur that are designated as sensitive natural communities (rank G3S3 or rarer).

Loss of oak woodland habitat over 30 years is a significant temporal loss. The importance of oak woodlands is further supported through the Oak Woodlands Conservation Act (Fish & G. Code §1360–1372). A temporal loss also exists for regaining the specific habitat that oak trees provide such as trunk and branch cavities, downed woody debris, and snags. The draft EIR includes a compensatory mitigation at a 2:1 ratio which is too low. The mitigation measures also do not discuss the timing of mitigation or location of the compensatory mitigation sites. The draft EIR states that oak revegetation will be monitored for five years. Oaks are very slow growing trees and monitoring of oaks/oak woodland habitat should be for at least 10 years. Additionally, due to recent drought conditions, monitoring of revegetation in the area (e.g. various projects in the County) has found a lack of meeting success criteria and resulted in further replanting and ongoing irrigation. A longer monitoring period with appropriate corrective measures should account for such climate uncertainties.

Recommended Potentially Feasible Mitigation Measures to minimize significant impacts or to potentially reduce impacts of the Project on sensitive natural plant communities to less-than-significant levels include the following:

Mitigation Measure #31: Natural Community Survey and Mapping

Survey and mapping of natural communities should be conducted by for all impact areas by a qualified biologist that has been trained in natural community identification. Natural communities should be identified to the alliance and association level, including oak woodland, scrub, and other communities within the Project area.

Mitigation Measure #32: Compensatory Mitigation and Revegetation

Compensatory mitigation for loss of sensitive natural communities (e.g., oak woodland and scrub) should be based on species and size of trees to be impacted and at a minimum 5:1 replacement ratio. Appropriate compensatory mitigation should be through preservation and protection in perpetuity of equal or higher quality habitat, or through creation, enhancement, and/or restoration. Replanted or restored mitigation sites should be monitored for a 10-year period. A mitigation and monitoring plan should be developed and include success criteria to be met at the end of the monitoring period. If success criteria are not met, the mitigation plan should include adaptive management actions along with additional years of monitoring as well as additional mitigation for the temporal loss.

COMMENT #11: Sensitive Aquatic Habitat

Sections: Impact 3.4-14. Project activities would result in substantial adverse effects on jurisdictional wetlands, other waters, and riparian habitats, page 3.4-99; 3.4.2 Regulatory Setting, 3.4.2.2 State, *California Fish and Game Code – Lake and Streambed Alteration Agreement*, page 3.4-3.

Issue: The draft EIR states the proposed Project includes installation of bridges, culvert crossings, mining pits, and a new well. Implementation of the Project could result in permanent relocation of a stream channel, removal of riparian habitat, diversion or obstruction of natural flows, substantial change of the bed, bank, or channel, and deposition of debris, sediment, or other materials in waterways.

The draft EIR states that an LSA Agreement would be needed for impacts to oakdominated mixed riparian habitat and for obstruction of flow or alteration of bed or bank. Substantial diversion or obstruction of natural flow, change in stream bed or bank, or deposit of debris into streams without necessary permitting would be a violation under Fish and Game Code §1602.

The Project includes complete removal of sections of existing stream channel. However, the draft EIR does not fully analyze Project alternatives that may avoid these impacts through redesign of Project components. The draft EIR states that the creek will be impacted by improvements to the access road that crosses Tick Creek, and that a culvert crossing will be installed on Sargent Creek, but details on these infrastructures and resultant impacts to biological resources are not provided. Alternative crossing designs that reduce bank and bed impacts and also allow for unrestricted channel flow should be evaluated.

The proposed well appears to be located approximately 200 feet from the center of Tar Creek. This well, at full quarry operations, would be used to extract 384,000 gallons per day. CDFW is concerned that this well could potentially divert water from Tar Creek.

The draft EIR states that flow intercepted or redirected during mining would be restored when the Project site is reclaimed. Loss of or reduced flow over 30 years is a significant temporal loss. Properly designed restoration of flow should occur as soon as feasible after each phase of Project construction.

Loss of riparian habitat over 30 years is a significant temporal loss. The draft EIR states that, if riparian vegetation on Sargent Creek is degraded due to interception or reduction of flows, compensatory mitigation will be applied at a 1.5:1 ratio. Compensatory mitigation for permanent loss of riparian habitat must be adequate to completely offset the impacts.

Recommended Potentially Feasible Mitigation Measures to minimize significant impacts or to potentially reduce impacts of the Project on sensitive aquatic habitats to less-than-significant levels include the following:

Mitigation Measure #33: Hydrology Analysis

The EIR should include a hydrological analysis to determine if well operation would adversely affect surface or subsurface flow in Tar Creek. If well operation could adversely affect aquatic or riparian resources, the EIR should include adequate avoidance, minimization, or mitigation measures to reduce the impacts to fish, wildlife and plant species to less-than-significant levels.

Mitigation Measure #34: Notification of Lake or Streambed Alteration

Fish and Game Code §1602 requires an entity to notify CDFW prior to commencing any activity that may (a) substantially divert or obstruct the natural flow of any river, stream, or lake; (b) substantially change or use any material from the bed, bank, or channel of any river, stream, or lake: (c) deposit debris, waste or other materials that could pass into any river, stream, or lake. Project construction activities may necessitate that the Project proponent submit a Notification of LSA to CDFW. CDFW is required to comply with CEQA in the issuance of an LSA Agreement. Additional information can be found at https://www.wildlife.ca.gov/Conservation/LSA.

The Notification should include streams, creeks, including Sargent Creek, Tar Creek and Tick Creek and any tributary, intermittent streams, ephemeral streams, and drainage channels that may be impacted by the Project. The Notification should include well operation if it could substantially divert water from Tar Creek.

Mitigation Measure #35: Project Component Design or Redesign

A more thorough analysis should be conducted on the feasibility of redesigning Project components to avoid removal of stream sections. To reduce impacts of the Project resulting from 30 years of flow intersection or redirection, flow should be fully restored

after each Project phase or Project component within a phase. The EIR should include a stream restoration plan prepared by a geomorphologist or restoration expert and restoration of streams with high quality riparian vegetation should be prioritized.

The EIR should fully analyze and describe the impacts to Tick Creek resulting from proposed improvements to the access road that crosses the creek, and installation of the culvert crossing on Sargent Creek. A hydrologic and hydraulic analysis should be conducted in support of designing Sargent Creek and Tick Creek crossings to allow for 100-year event flow or if the watershed area is small (i.e., Tick Creek) crossings be designed so that culverts can pass flows without erosion of bed or bank. The EIR should include an analysis of designs that have less impact to creek bed and bank, such as free-span bridge design, which should be prioritized as a design option.

Mitigation Measure #36: Riparian Monitoring Plan

The EIR should include a riparian monitoring plan that includes the assessment of revegetation success, channel design stability, and potential vegetation decline due to well operation. The riparian monitoring plan should include additional revegetation/restoration planting success criteria, in addition to survival, such as percent cover, tree height, and health and vigor. Monitoring should occur over a 10-year period and include a methodology to assess both direct impacts from riparian habitat removal and indirect impacts from degradation of habitat as a result of well operation.

Mitigation Measure #37: Compensatory Mitigation

Compensatory mitigation for riparian habitat removal should be based on species composition and size and be at a minimum 3:1 ratio for native species but up to 10:1 for slow-growing native species such as oaks. Compensatory mitigation should be provided for degradation of riparian vegetation due to intercepted flow, redirected flow, and well operation. The EIR should include science-based criteria for determining ratios in increments proportional to the amount of vegetation degradation. Compensatory mitigation areas should be established outside of the Project construction footprint and protected long-term.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations. (Pub. Resources Code, § 21003, subd. (e)). Accordingly, please report any special-status species and natural communities detected during Project surveys to the CNDDB. The CNDDB field survey form can be filled out and submitted online at the following link: https://wildlife.ca.gov/Data/CNDDB/Submitting-Data. The types of information reported

to CNDDB can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

ENVIRONMENTAL DOCUMENT FILING FEES

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

Due to the issues presented in this letter, CDFW concludes that the draft EIR does not adequately identify or mitigate the Project's significant, or potentially significant, impacts on biological resources. Deficiencies in the Lead Agency CEQA document can affect later project approvals by CDFW in its role as a Responsible Agency. In addition, because of these issues, CDFW has concerns that the County may not have the basis to approve the Project or make "findings" as required by CEQA unless the environmental document is modified to eliminate and/or mitigate significant impacts, as reasonably feasible (CEQA Guidelines, §§ 15074, 15091 & 15092).

Questions regarding this letter or further coordination should be directed to Brenda Blinn, Senior Environmental Scientist (Supervisory), at (707) 339-0334 or <u>Brenda.Blinn@wildlife.ca.gov</u>; or, Marcus Griswold, Senior Environmental Scientist (Specialist), at (707) 815-6451 or <u>Marcus.Griswold@wildlife.ca.gov</u>.

Sincerely,

-DocuSigned by: Erin Chappell

Erin Chappell Regional Manager Bay Delta Region

ec: Office of Planning and Research, State Clearinghouse (SCH No. 2016072058) Craig Weightman, CDFW Bay Delta Region – <u>Craig.Weightman@wildlife.ca.gov</u>

REFERENCES

- Barrientos, R. et al. 2023. Nearby night lighting, rather than sky glow, is associated with habitat selection by a top predator in human-dominated landscapes, Philosophical Transactions of the Royal Society B: Biological Sciences. https://royalsocietypublishing.org/doi/10.1098/rstb.2022.0370
- Beier, P. 2018. A rule of thumb for widths of conservation corridors. Conservation Biology. (0) 0:1-3. DOI: 10.1111/cobl.13256.
- Beiswenger, R. E. 1977. Diet patterns of aggregative behavior in tadpoles of Bufo americanus, in relation to light and temperature. Ecology 58:98–108.
- California Department of Fish and Wildlife (CDFW) 2022. Biogeographic Information and Observation System (BIOS).<u>https://www.wildlife.ca.gov/Data/BIOS</u>.
- California Department of Fish and Wildlife (CDFW). 2018. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities.
- California Department of Fish and Wildlife (CDFW). 2016. California State Wildlife Action Plan, Transportation Planning Companion Plan. Prepared by Blue Earth Consultants, LLC., Sacramento, CA.
- California Department of Transportation (Caltrans). 2009. Wildlife Crossings Design Manual.
- Contor R. and J.S. Griffith. 1995. Nocturnal emergence of juvenile rainbow trout from winter concealment relative to light intensity. Hydrobiologia Vol. 299: 179-18.
- Dellinger J. A., K. D. Gustafson, D. J. Gammons, H. B. Ernest, and S. G Torres. 2020. Minimum habitat thresholds required for conserving mountain lion genetic diversity. Ecology and Evolution. 10:10687–10696.
- Diamond T.D., Sandoval A., Sharma N.P., Vernon M.E., Cowan P.D., Clevenger A.P., and Lockwood S.C. 2022. Enhancing ecological connectivity and safe passage for wildlife on highways between the southern Santa Cruz Mountains, Gabilan Range, and Diablo Range in California. Palo Alto, CA: Pathways for Wildlife and Peninsula Open Space Trust. Openspacetrust.org/connectivity-study.
- FHWA. 2011. Wildlife Crossing Structure Handbook: Design and Evaluation in North America.

- Ford, A. T., E. J. Sunter, C. Fauvelle, C. Bradshaw, B. L. Ford, B. Hutchen, J. Phillipow, N. and Teichman, K. J. Noise. 2020. Effective corridor width: linking the spatial ecology of wildlife with land use policy. European Journal of Wildlife Research 69: 1-10.
- Gustafson K.D., Gagne R.B, Vickers T.W, Seth P. D. Riley, Christopher C. Wilmers, Vernon C. Bleich, Becky M. Pierce, Marc Kenyon, Tracy L. Drazenovich, Jeff A. Sikich, Walter M. Boyce, and Holly B. Ernest. 2018. Genetic source–sink dynamics among naturally structured and anthropogenically fragmented puma populations. Conservation Genetics (2019) 20:215–227.
- Harrison, R. 1992. Toward a Theory of Inter-Refuge Corridor Design. Available from: https://www.jstor.org/stable/2386251#metadata_info_tab_contents.
- ICF International. 2012. Final Santa Clara Valley Habitat Plan. Santa Clara County, California, USA.
- Longcore, T., and C. Rich. 2004. Ecological light pollution Review. Frontiers in Ecology and the Environment 2:191–198.
- McLaren, et. al. 2018. Artificial light at night confounds broad-scale habitat use by migrating birds.
- Miller, M. W. 2006. Apparent effects of light pollution on singing behavior of American robins. The Condor 108:130–139.
- Pathways for Wildlife. 2020. Wildlife Permeability and Hazards across Highway 152 Pacheco Pass: Establishing a Baseline to inform Infrastructure and Restoration. A report prepared for the Santa Clara Valley Habitat Agency.
- Perry, G. and R.N. Fisher. 2006. Night lights and reptiles: Observed and potential effects. In Ecological Consequences of Artificial Night Lighting, edited by C. Rich and T. Longcore, pp. 169-191. Washington, D.C.: Island Press.
- Poot, H., B. J. Ens, H. de Vries, M. A. H. Donners, M. R. Wernand, and J. M. Marquenie. 2008. Green light for nocturnally migrating birds. Ecology and Society 13(2): 47

Rhode Island Department of Transportation. 2021. Road-Stream Crossing Design Manual.

- Santa Cruz Land Trust. 2023. <u>https://experience.arcgis.com/experience/716de4f11000</u> <u>44779354ea8a3c8aff9f/</u>: Existing Conditions Report.
- Stone, E. L., G. Jones, and S. Harris. 2009. Street lighting disturbs commuting bats. Current Biology 19:1123–1127. Elsevier Ltd.