yield results robust enough to be analyzed in a way that would credibly substantiate the CEQA impact analysis. Therefore, the County has inadequate information upon which to base its determination that most of the site can be aggressively mined, and the width of the habitat linkage substantially narrowed, while maintaining function of the linkage/corridor.

As discussed in this letter, the project biologists failed to report that the site's extensive areas of loose, alluvial soil provide high quality habitat for special-status species that are not covered under the MSCP and that have been greatly impacted by sand mining operations across the region. The California Glossy Snake, Southern California Legless Lizard, and Western Spadefoot all have high potential to occur on the site, and would experience significant adverse effects from the proposed actions, but no surveys were conducted to determine their presence or absence, abundance, or distribution across the site. Of these species, only the Western Spadefoot is so much as mentioned in the DEIR. Given their high potential for occurrence, and the lack of necessary survey information, the County must acknowledge potentially significant impacts to each of these special-status species. The County must take all feasible measures to reduce impacts to these species to below the level of significance.

R-O7-66 cont.

Because the RDEIR fails to provide adequate, objective, and credible information demonstrating that the proposed sand mining project would minimize impacts to BRCAs, sensitive resources, and special-status species, the County has no basis for finding that the proposed actions conform to the Subarea Plan Findings.

REVIEW OF THE RDEIR'S CEQA IMPACT ANALYSIS

As reviewed on pages 3–16 of this letter, the RDEIR fundamentally misrepresents the site's plant communities; provides inadequate information on the status and distribution of special-status species on the site; and does not incorporate the results of an adequate study of wildlife movement designed to meaningfully inform the RDEIR's CEQA impact analysis.

R-O7-67

As reviewed on pages 16–34 of this letter, the RDEIR claims that the project conforms to the requirements of the MSCP but fails to substantiate these claims with adequate survey data, accurate representation of the site's resources, and incorporation of relevant scientific information from the peer-reviewed literature.

The RDEIR's incomplete and inaccurate accounting of the existing conditions leads to a fatally flawed impact analysis.

Significant Impacts to Non-native Grassland

As discussed on pages 3–9 of this letter, the RDEIR misclassifies 93.1 acres of Non-native Grassland, a Tier III MCSP natural community, as Disturbed Habitat. Thus, project implementation would entail significant impacts to 93.1 acres of Non-native Grassland.

R-O7-68

R-O7-67 This comment summarizes the comments previously stated in the attachment, and which are responded to, above, in Responses to Comments R-O7-54 through R-O7-66. No further response is required.

R-O7-68 This comment reiterates or summarizes comments previously stated in the attachment. Please see Response to Comment R-O7-13 for a discussion on habitat classification and mapping. No further response is required.

R-O7-69

Significant Impacts to Southern Willow Scrub

As discussed on page 3–10 of this letter, the RDEIR misclassifies several acres of Southern Willow Scrub as Disturbed Wetland. Both are Tier I MSCP natural communities. Project implementation would entail significant impacts to several acres of Southern Willow Scrub habitat that are not acknowledged in the RDEIR.

R-O7-70

Potential Significant Impacts to Special-status Species for Which Adequate Surveys Were Not Conducted

As discussed on pages 3-4 of this letter, the project biologists failed to report that the site's extensive areas of loose, alluvial soil provide high quality habitat for special-status species that are not covered under the MSCP and that have been greatly impacted by sand mining operations across the region. The California Glossy Snake and Southern California Legless Lizard have high potential to occur on the site, and would experience significant adverse effects from the proposed actions, but no surveys were conducted to determine their presence or absence, abundance or distribution across the site. Given their high potential for occurrence, and the lack of necessary survey information, the RDEIR must acknowledge potentially significant impacts to each of these special-status species. The County must take all feasible measures, including compensatory mitigation, to reduce impacts to these species to below the level of significance.

R-O7-71

Western Spadefoot Impact Analysis is Inadequate and Self-contradictory

The Western Spadefoot, a California Species of Special Concern, is not a "covered" species under the MSCP. Because this toad is not uniformly distributed among the MSCP covered habitats (grassland, coastal sage scrub, etc.) but instead is sporadically distributed in association with certain seasonal pools adjacent to suitable upland aestivation habitats, the MSCP does not provide mitigation via the habitat tier mitigation ratios. An adequate site-specific CEQA analysis is required independent of the MSCP.

Western Spadefoot status and distribution on the site

CEQA impact analysis requires adequate information about the species' abundance and distribution on the project site. In this case, because no focused study was undertaken, the project biologists have no information on the species' occurrence on the project site. Nevertheless, the project biologists identify a "high potential" for Western Spadefoots to occur on the site. For the species to occur on the site, it is necessary that both aquatic and upland habitats be occupied, since spadefoots are aquatic only during the breeding season.

R-O7-72

Western Spadefoot life history and ecological requirements

An adequate CEQA impact analysis must consider all of the species' relevant natural history and habitat requirements. Page 2.2-33 of the DEIR identifies impacts to "0.50 acre of disturbed wetland, 0.32 acre of southern cottonwood-willow riparian forest, and

R-O7-69 This comment reiterates or summarizes comments previously stated in the attachment. Please see Response to Comment R-O7-13 for a discussion on habitat classification and mapping. No further response is required.

R-O7-70 This comment reiterates or summarizes comments previously stated in the attachment. Please see Response to Comment R-O7-11 for discussion related to California glossy snake and San Diegan legless lizard. No further response is required.

R-O7-71 This comment reiterates or summarizes comments previously stated in the attachment. Please see Response to Comment R-O7-14 for discussion related to western spadefoot habitat. No further response is required.

R-O7-72 This comment reiterates or summarizes comments previously stated in the attachment. Please see Response to Comment R-O7-14 and R-O7-24 for discussion related to western spadefoot habitat, Project impacts, and mitigation. No further response is required.

3.5 acres of constructed ponds with potential to support the species." **This analysis accounts for only a fraction of the species' natural history requirements.**

A recently published telemetry study of Western Spadefoots in southern California provides important current information on the species' life history and ecological requirements (Halstead et al. 2021), following on earlier telemetry studies in the same region (Baumberger 2013, Baumberger et al. 2019).

Western Spadefoots spend large parts of the year aestivating underground, often far away from their breeding ponds. As observed by Halstead et al. (2021:1385):

> The distance that western spadefoots move from breeding pools is a key metric for western spadefoot conservation. Distance from the breeding pool indicates how much terrestrial habitat around a breeding pool might be used by western spadefoots, and provides a direct link to the effective reserve sizes needed to preserve western spadefoot populations.
>
> . . .
>
> The need for core terrestrial habitats around amphibian breeding sites is documented (Semlitsch 1998, Semlitsch and Jensen 2001, Semlitsch and Bodie 2003, Harper et al. 2008, Searcy et al. 2013), as are the negative consequences of roads separating adult habitat from breeding pools (Becker et al. 2007, Brehme et al. 2018). Ensuring that enough terrestrial habitat exists to provide the life cycle needs for western spadefoots is best measured by the predictive distribution of distance from breeding pools. The 95th percentile of the posterior predictive distribution for western spadefoot asymptotic distance from the breeding pool was **486 m** at Crystal Cove. This predicted value encompassed the maximum distance from the breeding pool of all but 1 of the spadefoots at the site. [emphasis added in bold]

R-O7-72 cont.

Baumberger et al. (2019:6) found:

> The maximum distance the spadefoots were found from the pools **ranged from 16 to 262 m (Table 1, S1 Table), with a mean maximum distance of 69 m ± 61.48.** The spadefoots used a mean of 13 burrows (SD ± 8.5), and the mean distance between burrow locations was 18 m (SD ± 24.2). They used 4–31 unique burrow sites (mean 11 ± 7.8) during the study. Nine of the 15 spadefoots (60%) reused one or more burrows at least once after moving to a different burrow. Outside of their aestivation period, the spadefoots shifted their burrow location an average of every 8 ± 7 days, and 147 of 194 (~76%) movements between burrows were ≤ 25 m. [emphasis added in bold]

In order to mitigate potential adverse effects associated with development upon Western Spadefoots, and to accommodate the movement of the toads between breeding ponds and upland aestivation sites, the USGS (Rochester et al. 2017) recommended that the City of Santee protect an **undeveloped buffer measuring 300 to 400 meters** around Western Spadefoot breeding ponds. This range is consistent with conservation recommendations for the Western Spadefoot contained in the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (US Fish and Wildlife Service 2005:II-231):

> Based on calculations from upland habitat use data analyzed by Semlitsch and Brodie (2003), a minimum conservation area to preserve the ecological processes required for the conservation of amphibians may fall within a distance of approximately 368 meters (1,207 feet) from suitable breeding wetlands.

In light of the Western Spadefoot's extensive requirements for upland aestivation sites away from their aquatic breeding habitats, the project's impacts to this species necessarily extend far beyond the "0.50 acre of disturbed wetland, 0.32 acre of southern cottonwood-willow riparian forest, and 3.5 acres of constructed ponds with potential to support the species." Furthermore, Western Spadefoots regularly breed in ephemeral ponds, such as those that form on dirt roads. Because the project biologists made no effort to map the extent of ephemeral ponds on the site, the RDEIR provides no reliable information on the actual extent of aquatic breeding habitat on the site.

Because the RDEIR's analysis of potential impacts to the Western Spadefoot (1) is not based on a study to determine the species' status and distribution on the site, and (2) does not reflect the species' known life history and ecological requirements, the analysis is inadequate under CEQA.

R-O7-72 cont.

Page 2.2-33 of the DEIR states, "Temporal loss of potential habitat during mining and reclamation activities would not affect the local long-term survival of this species." Since the DEIR's analysis of the nature and extent of potential impacts fails to account for all of the potential impacts, the RDEIR provides no factual basis for this conclusion.

Page 2.2-33 of the RDEIR concludes, "Following reclamation, the project would provide additional, higher quality habitat for the species through revegetation and restoration of the expanded Sweetwater River floodplain." This superficial analysis fails to account for the Western Spadefoot's requirement for alluvial upland aestivation habitat away from its aquatic breeding sites. Because the purpose of the project is to remove the alluvium that makes the uplands suitable as aestivation habitat, the RDEIR has no basis for claiming that the project would "provide additional, higher quality habitat for the species."

For all of these reasons, the DEIR's analysis of potential impacts to the Western Spadefoot is inadequate. The project's significant impacts to the species are not limited to only a small area of aquatic breeding habitat, but must also account for the much larger areas of alluvial uplands required for aestivation. In the absence of focused survey data showing the actual extent of ephemeral breeding ponds, and occupied alluvial uplands, the project biologists should base their impact analysis on the known life history of the species, as reported in the scientific literature. That is to say, all of the site's Non-native Grasslands should be assumed to be occupied by aestivating Western Spadefoots.

To address the project's potentially significant impacts to the Western Spadefoot, the RDEIR identifies Mitigation Measure M-BIO-10:

> If western spadefoot toads, tadpoles, or egg masses are identified within the proposed impact area(s), the following measures shall be implemented: (1) A suitable relocation site(s) outside the proposed impact area(s) shall be identified by a qualified biologist. The relocation site(s) shall be located a minimum of 50 feet outside of the proposed impact area(s), or 100 feet if available, and shall be approved by CDFW; (2) All western spadefoot adults, tadpoles, and egg masses encountered in the proposed impact area(s) shall be collected and released in the identified relocation site(s); (3) The relocation site(s) shall be monitored annually for five years during and immediately following peak breeding season (late winter to March), such that

surveys can be conducted for adults as well as for egg masses and tadpoles. The results of annual monitoring shall be provided to CDFW in an annual report.

R-O7-72 cont.

This mitigation measure was not included in the original DEIR, but was recommended on page 8 of CDFW's letter dated February 28, 2022, commenting on the original DEIR. Moving toads, tadpoles, and egg masses from breeding pools to an off-site area does not account for the dozens of acres of required aestivation habitat that would be removed for project implementation. For this reason, implementation of Mitigation Measure M-BIO-10 would not reduce the project's potential impacts to the Western Spadefoot to a less-than-significant level.

The RDEIR's treatment of Western Spadefoot illustrates the document's fundamental incoherence and unreliability. Western Spadefoots are typically associated with grasslands, and do not aestivate in Disturbed Habitat, so the species would not have a "high potential" to occur on the site if the abandoned golf course actually fit the description of Disturbed Habitat. This is but one more line of evidence that the abandoned golf course is vegetated with Non-native Grassland and not Disturbed Habitat.

RDEIR's Arroyo Toad Findings Based on Inadequate Information

R-O7-73

The project site was identified as critical habitat for the Arroyo Toad because it contains the primary constituent elements of suitable habitat for this endangered species. Page 2.2-52 of the RDEIR identifies no significant impacts to the Arroyo Toad based upon lack of observations during protocol surveys conducted in 2019. The 2019 survey provided inadequate information to evaluate the adequacy of that survey (e.g., no description of relevant site conditions; no photos of site conditions; no indication of survey routes; no list of amphibians detected). Also endangered species surveys are normally considered valid for one year, so a four-year-old study is outdated. Furthermore, updated surveys clearly should have been completed in 2023, after large areas of Southern Willow Scrub habitat regenerated throughout the Sweetwater River channel, greatly increasing the area of suitable Arroyo Toad habitat. In all of these ways, the RDEIR misrepresents the project's potentially significant impacts to the Arroyo Toad.

Unsupported Analysis of Potential Impacts to Raptor Foraging Habitat

Page 2.2-53 of the RDEIR states:

R-O7-74

> The Project site consists of an active and abandoned golf course, which has historically been subjected to frequent human visitation and ongoing disturbances related to golf course operations, such as regular mowing, irrigation, and pest management. In its current state, the Project site provides relatively low- to moderate- quality foraging opportunities for common raptors that are resident and migratory to the region. Although the Project site provides some function and value for raptor foraging, it has been a golf course for decades and has likely not functioned as a local or regional foraging resource of importance for raptors considering that species observed within the Project site are known to be tolerant to urbanization and other disturbances. Other more expansive areas occur in the local area and region that provide foraging habitat, such as the SDNWR to the south and west, and McGinty Mountain Ecological Reserve to the east.

R-O7-73 This comment reiterates or summarizes comments previously stated in the attachment. Please see Response to Comment R-O7-11 for discussion related to arroyo toad. No further response is required.

R-O7-74 Please see Response to Comment R-O7-13 for a discussion on habitat classification and mapping.

The commenter is referred to Response to Comment R-O7-15 regarding the number of biological surveys completed for the Project since 2018. These surveys included both directed and passive surveys for raptors and other species using the Project site. As noted in the comment and detailed in Section 2.2.1.1 of the RDEIR and Section 1.4.10 of the Biological Resources Technical Report recirculated with the RDEIR (FEIR and RDEIR Appendix C), several raptor species were observed within the Project site, flying over and at times foraging within the Project site. Nevertheless, the threshold of determining significance in accordance with County guidelines is whether the Project would result in the loss of functional foraging habitat for raptors. As stated in the RDEIR, although the Project site provides some function and value for raptor foraging, it has been a golf course for decades and has likely not functioned as a local or regional foraging resource of importance for raptors considering that species observed within the Project site are known to be tolerant to urbanization and other disturbances. Other more

R-O7-74 cont.

As shown in the photos on pages 6–10 of this letter, the project site consists of large areas of Non-native Grassland and turf, along with riparian woodlands and many large cottonwood trees. The area appears to be valuable to foraging raptors. This is especially true for the southwestern third of the project site, which has been closed to most human activity since course since 2017. Project biologists recorded seven raptors on the site: Turkey Vulture, Cooper's Hawk, Red-tailed Hawk, Red-shouldered Hawk, Barn Owl, American Kestrel, and Peregrine Falcon. Nevertheless, without conducting a raptor foraging study or any kind of detailed analysis, the project biologists conclude "the Project site has likely not functioned as a local or regional foraging resource of importance for raptors and would provide low quality foraging habitat in its current state." In the absence of a study or credible analysis supporting the DEIR's finding of no significant impact, the EIR should acknowledge potentially significant impacts to raptor foraging habitat. The EIR should identify potentially significant impacts to raptor foraging habitat and provide appropriate compensatory mitigation.

R-O7-75

Flawed Analysis of Regional Wildlife Corridors and Linkages

The DEIR's impact analysis, on page 2.2-67, justifies its finding of no significant impact by claiming, "The Project would conform to the goals and requirements of the County Subarea MSCP and BMO, including effects on habitat linkages and wildlife corridors." Pages 16–34 of this letter detail the many ways that the proposed action would violate the goals and requirements of the Subarea MSCP and BMO, and which undermine the RDEIR's finding that project actions would not result in significant impacts to regional wildlife corridors and linkages.

R-O7-76

Inadequate discussion of indirect effects

The RDEIR's analysis of this topic is on page 2.2-68. The first paragraph states:

> The Project occurs along the path of a constrained linkage that is already subjected to noise and nighttime lighting impacts associated with operation of the Cottonwood Golf Club. The reach of river traversing the Project site currently has low function as a wildlife corridor as it is narrow, lacks suitable vegetative cover, and is adjacent to developed golf course operations.

The RDEIR provides no information on the existing levels of noise and night-lighting in different parts of the project site. During my field visit on February 10, 2022, I saw very few lights around the project site, and no reason to expect that the site would experience much noise at night, when most terrestrial wildlife movement takes place. Furthermore, since an adequate study of wildlife movement was not conducted, the assertion that "the Project site currently has low function as a wildlife corridor" is inadequately supported and speculative.

The second paragraph states:

> Construction-related noise generated from mining and reclamation activities could temporarily impact wildlife. Mining operations and reclamation activities would require the daily use of heavy equipment that would elevate existing noise levels on site. Wildlife may be

R-O7-74 (cont.) expansive areas occur in the local area and region that provide foraging habitat, such as the SDNWR to the south and west, and McGinty Mountain Ecological Reserve to the east. Although the Project would result in the temporary loss of potential foraging habitat within subphases that are being actively mined, potential foraging opportunities for raptors would remain available in portions of the site outside of the active subphase. Since mining and reclamation activities as mining would occur incrementally in 20- to 30-acre subphases, the majority of the site would remain either undisturbed or in the five-year restoration and revegetation monitoring period and accessible for foraging throughout the mining period. As such, there would not be a permanent loss of functional foraging habitat at the site. Where a temporal loss may occur, it would occur only during the implementation of mining and reclamation activities for each incremental subphase, with the temporal loss at that subphase location being restored immediately following the mining and reclamation activities for the affected subphase. Considering the incremental temporal loss, restorative actions, and available functioning raptor foraging habitat within avoided areas during implementation of each subphase, a less than significant determination was made against this threshold. There would be no permanent loss of functioning raptor foraging habitat and the Project would not affect the local long-term survival of raptors within the local area.

R-O7-75 This comment reiterates or summarizes comments previously stated in the attachment. Please refer to Responses to Comments R-O7-54 through R-O7-66 which address the Project's conformance with the County's MSCP Subarea Plan. No further response is required.

R-O7-76 This comment reiterates or summarizes comments previously stated in the attachment. Please see to Response to Comment R-O7-61 for a discussion on indirect impacts to wildlife movement pertaining to noise and nighttime lighting, Response to Comment R-O7-17 for a discussion of the wildlife camera trapping survey methods and results, and Response to Comment R-O7-58 for a discussion regarding mountain lions. No further response is required.

> temporarily displaced from or avoid the Project site during construction activities but would be expected to return to the area was activities have ceased.

The RDEIR should specify the noise levels expected from project operations and evaluate them against the published literature on noise impacts to different wildlife species known to occur in the local area.

The second paragraph also states:

R-O7-76 cont.

> Larger wildlife species, such as mule deer or bobcat, would already be discouraged from utilizing the Project site based on results of biological surveys and wildlife camera surveys, current golf course activity and current golf course activity and lack of vegetative cover along the Sweetwater River.

As discussed in these comments, the project biologists conducted only a brief and superficial study of wildlife movement through the site. The study design that was not adequate to draw broad conclusions about the movement of species like Mountain Lion, which may move through a linkage only occasionally. Furthermore, the RDEIR fails to acknowledge that project implementation would decrease the suitability of the resulting habitat linkage for Mountain Lions (*cf.* Beier 1995).

Erroneous and Misleading Analysis of Habitat Linkage Width, Barriers

Page 2.2-68 erroneously states "The Project would not further constrain existing corridors or linkages in the local area." Page 2.2-69 erroneously states, "The Project would not narrow the existing wildlife linkage width." As reviewed in this letter, the project would reduce the existing MSCP-designated habitat linkage from its current width of 850 to 1,700 feet to a width of approximately 450 to 720 feet.

Page 2.2-69 erroneously states, "only 2.34 acres (1.1 percent) of the 211.94 acres of the on-site impacts would occur to native or sensitive habitats." The project would impact much more than 2.34 acres of native or sensitive habitats, as the project biologists have misclassified 93.1 acres of Tier III Non-native Grasslands as Disturbed Habitat and misclassified several acres of Tier I Southern Willow Scrub as Disturbed Wetlands.

R-O7-77

Page 2.2-69 erroneously states, "The project would not include the construction or placement of barriers in any wildlife movement paths." The topic of placing barriers to the movement of wildlife through the site is discussed on page 30 of this letter, which notes that project implementation involves installing 20-foot-tall bands of grouted riprap as grade-control structures across 1.74 acres of the floodplain. Two of these bands would span nearly the entire width of the post-project floodplain, one at the eastern edge of the project site and the other just west of the Steel Canyon Road bridge, and the third would be constructed across the mouth of Mexican Canyon. These bands of new hardscape pose a barrier to movement of some types of wildlife through the habitat linkage/movement corridor, which currently has no such barriers. The DEIR must analyze all potential effects of installing these riprap structures on the movement of various forms of wildlife through the project site.

R-O7-77 This comment reiterates or summarizes comments previously stated in the attachment. Please see Response to Comment R-O7-18 for a discussion of the habitat linkage width.

Please see Response to Comment R-O7-13 for a discussion on habitat classification and mapping.

Please see Response to Comment R-O7-62 for a discussion of barriers to wildlife movement and the grouted riprap drop structures that would be constructed within the Project site as part of site reclamation.

R-O7-77 cont.

The RDEIR's finding that "impacts associated with corridor width would be less than significant," is based upon erroneous assertions that must be corrected; then a new impact analysis must be prepared.

R-O7-78

Erroneous and Misleading Analysis of Visual Continuity

Page 2.2-70 erroneously states:

> Although 0.58 acre of riparian habitat would be impacted as part of Project implementation, these impacts are on the outer edges of existing habitat and would not adversely affect visual continuity within the wildlife linkage.

The project would impact much more than 0.58 acre of riparian habitat, since the RDEIR misclassifies several acres of Tier I Southern Willow Scrub as Disturbed Wetlands.

R-O7-79

County RPO Wetlands

Page 2.2-71 erroneously states:

> The Project would directly impact a total of 2.34 acres of riparian habitat or other sensitive natural communities, including 1.14 acres of County RPO wetlands.

The project would impact much more than 2.34 acres of riparian habitat or sensitive habitats, as the project biologists have misclassified 93.1 acres of Tier III Non-native Grasslands as Disturbed Habitat and misclassified several acres of Tier I Southern Willow Scrub as Disturbed Wetlands.

R-O7-80

Project does not minimize impacts to BRCA

Page 2.2-73 of the Biological Resources section of the RDEIR states:

> The Project minimizes impacts to BRCA in accordance with the MSCP and BMO. Impacts to BRCA would be less than significant.

As reviewed in this letter, the RDEIR provides no evidence or legitimate line of reasoning to support this finding that the project "minimizes impacts to BRCA in accordance with the MSCP and BMO."

R-O7-81

Impacts to BMO-identified Linkages

Page 2.2-73 of the Biological Resources section of the RDEIR states:

> The Project site is located within an identified habitat linkage in the South County MSCP. As part of the reclamation process, the Proposed Project would substantially improve the condition of the existing linkage through widening of the Sweetwater River floodplain and planting of riparian habitat. A riparian corridor would be re-established throughout the Project site which would encourage and facilitate wildlife movement within the region. Therefore, the Project would ultimately conserve and enhance the functions and values of the habitat linkage in accordance with the MSCP and BMO. Impacts to BMO-identified corridors would be less than significant.

R-O7-78 This comment reiterates or summarizes comments previously stated in the attachment. Please see Response to Comment R-O7-13 for a discussion on habitat classification and mapping. No further response is required.

R-O7-79 This comment reiterates or summarizes comments previously stated in the attachment. Please see Response to Comment R-O7-13 for a discussion on habitat classification and mapping. No further response is required.

R-O7-80 This comment reiterates or summarizes comments previously stated in the attachment. Please see Response to Comment R-O7-51 for discussion regarding Project impacts to riparian habitat and other sensitive natural communities, including BRCAs. No further response is required.

R-O7-81 This comment reiterates or summarizes comments previously stated in the attachment. Please see Response to Comment R-O7-18 for a discussion of the habitat linkage width, and Responses to Comments R-O7-54 through R-O7-66 which address the Project's conformance with the County's MSCP Subarea Plan. No further response is required.

BMO Design Criteria 1 states, "Habitat Linkages as defined by the BMO, rather than just Corridors, will be maintained."

Section 86.508(d) of the Biological Mitigation Ordinance (BMO) defines "Linkage" and "Corridor" as follows:

> "Corridor" is a specific route that is used for movement and migration of species. A corridor may be different from a "Linkage" because it represents a smaller or more narrow avenue for movement.

R-O7-81 cont.

The MSCP-designated habitat linkage through the project site occupies the 100-year floodplain, and measures between 850 and 1,700 feet wide. The proposed project would dramatically narrow the habitat linkage "to an average width of approximately 600 feet," and as narrow as 350-400 feet at the western end of the project, where it interfaces with the SDNWR.

Since Design Criterion 1 specifies that "Linkages . . . rather than just Corridors, will be maintained," and the proposed actions would dramatically narrow the existing Linkage, down to the width of a Corridor, the project clearly violates BMO Design Criterion 1. Therefore, a significant impact to the MSCP-designated habitat linkage must be identified.

Flawed and Inadequate Cumulative Impact Analysis

With regard to the project's contribution to cumulative impacts to wildlife movement, page 2.2-77 of the DEIR states:

> As the Proposed Project would ultimately be in conformance with the South County MSCP Subarea Plan and any other projects proposed in the vicinity would also have to follow the South County MSCP Subarea Plan, cumulative impacts would be considered fully mitigated.

R-O7-82

This letter identifies numerous ways in which the RDEIR misrepresents the biological resources present, or potentially present, on the project site. It also identifies numerous flaws and misrepresentations in the MSCP Findings of Conformance Statement. Thus, the project's cumulative impacts would not be fully mitigated.

Adverse ecological effects of sand and gravel operations across western San Diego County have elevated the ecological importance of the relatively few areas of alluvial soil that remain. As stated by Richmond and colleagues (2017:294-295):

> Large portions of the southwestern United States, particularly coastal areas of western San Diego County, California, near the USA-Mexico international border, have undergone rapid development that has either eliminated or encroached upon what little is left of alluvial sand and gravel habitats. These habitats are generally found in river and stream valleys, at the base of topographic features where there is a pronounced change in slope, and in intermountain valleys. Deposits typically consist of variable grain sizes that are compactable, but retain good internal drainage. This feature makes them a preferred substrate for numerous reptiles and amphibians occurring within the region, particularly those with burying or burrowing tendencies such as the southern California legless lizard (*Anniella stebbinsi*), the California glossy

R-O7-82 This comment reiterates or summarizes comments previously stated in the attachment. Please see Response to Comment R-O7-13 for a discussion on habitat classification and mapping, and Responses to Comments R-O7-54 through R-O7-66 which address the Project's conformance with the County's MSCP Subarea Plan. Cumulative impacts to biological resources are presented in Section 2.2.3 of the RDEIR and Sections 3.3, 4.3, 5.3, 6.3, and 7.3 of the Biological Resources Technical Report recirculated with the RDEIR (FEIR and RDEIR Appendix C).

Please see Response to Comment R-O7-11 for discussion related to California glossy snake and San Diegan legless lizard.

Please see Response to Comment R-O7-14 and R-O7-24 for discussion related to western spadefoot habitat, Project impacts, and mitigation.

R-O7-82 cont.

snake (*Arizona elgans occidentalis*), Blainville's horned lizard (*Phrynosoma blainvillii*), the Gilbert skink (*Plestiodon gilberti*), and the western spadefoot (*Spea hammondii*).

The project's contribution to this cumulative adverse effect is a significant impact that the DEIR does not acknowledge, discuss, or analyze. The project must be reconsidered to acknowledge and avoid cumulatively considerable impacts to alluvium-dependent special-status species, especially the California Glossy Snake and Western Spadefoot.

Inadequate Alternatives Analysis

The DEIR evaluates two potential alternatives, both of which call for intensive, large-scale mining of the project site. Both alternatives would violate the BMO Design Criteria for habitat linkages/movement corridors, and would not take into consideration the results of a wildlife movement study, since no such study has been completed for the proposed project. As such, there is no reason to expect that either project alternative could be completed without the type of significant adverse effects identified in this letter for the proposed project.

R-O7-83

The DEIR must evaluate at least one project alternative that would, in fact, comply with all BMO Design Criteria for linkages and corridors, as determined through a legitimate study of the existing patterns of wildlife movement through the project site. Such a study would involve using "camera traps" or other commonly used and widely accepted techniques for documenting patterns of movement of different wildlife species at night, when most such movement takes place.

A type of project compatible with the site's MSCP designation as a regional habitat linkage would be to convert the project site to a mitigation bank. In 2021, I spoke with Brian Monaghan at Wildlands, Inc., a mitigation banking company based in Rocklin, California. In 2017, before the previous landowner went into bankruptcy, Mr. Monaghan visited the site several times to conduct a detailed investigated into the site's potential for conversion to a wetland mitigation bank. In his opinion, the site has great potential for this use. Furthermore, Mr. Monaghan reports that San Diego County has a shortage of wetland mitigation credits available. Thus, it would be in the County's interest, as well as the public's interest, to evaluate a mitigation banking alternative in the EIR. Such an alternative would be consistent with the site's MSCP designation as a habitat linkage/movement corridor and would allow the landowner to profit on their investment.

COMMENTS ON THE CONCEPTUAL REVEGETATION/RECLAMATION PLAN

R-O7-84

In a separate letter, hydrologist Greg Kamman has identified a number of flaws in the RDEIR's hydrological analysis that call into question the likelihood of success of the proposed plans to revegetate the mined areas. Each of the points raised in Mr. Kamman's analysis must be fully addressed in order to substantiate the DEIR's claims about revegetation/reclamation of the site post-mining.

R-O7-83 Please see Response to Comment D-A6-24, which describes the rationale for alternative selection cited in Chapter 4.0 of the FEIR. The CEQA Guidelines provide several factors that should be considered with regard to the feasibility of an alternative. Those factors include: (1) site suitability; (2) economic viability; (3) availability of infrastructure; (4) general plan consistency; (5) other plans or regulatory limitations; (6) jurisdictional boundaries; and (7) whether the project applicant can reasonably acquire, control, or otherwise have access to the alternative site (if an off-site alternative is evaluated). In accordance with CEQA Guidelines Section 15126.6(a), the Project alternatives are assessed relative to their ability to (1) meet the basic objectives of the Project and (2) avoid or substantially lessen the significant effects of the Project. FEIR Section 4.1.1 describes preliminary alternatives that were considered but rejected because they did not accomplish most of the Project objectives or would result in greater impacts than the Proposed Project, and therefore, were not fully analyzed in this EIR. These included a Visual Screening Alternative, Reduced Footprint/Deeper Excavation Alterative, and Reduced Annual Mining Production/Increased Mining Duration Alternative.

Additionally, please see Responses to Comments R-O7-15, R-O7-17, and R-O7-52, which describe the "camera trap" surveys used to support the biological resources analysis.

R-O7-84 Please see Responses to Comments R-O7-54 and R-O7-86 through R-O7-93 regarding the proposed post-reclamation condition.

The comment references Section 5.2, *Financial Assurances*, of the Project's Conceptual Revegetation Plan (Appendix N of the Biological Resources Technical Report recirculated with the RDEIR) and states that the amount of "financial assurance" or "security" would be a sum not to exceed $30,000. The financial assurance for the native habitat restoration and revegetation mitigation is determined largely by the estimated cost of implementing the native habitat restoration and revegetation mitigation. Please see Topical Response 4, *Reclamation Assurance Mechanism.* The operator is required to provide a Financial Assurance Mechanism (FAM) to cover the full costs of reclamation,

R-O7-84 cont.

Restoration/revegetation efforts would continue for five years or until the County determines that performance standards have been satisfied for two consecutive years, at which time the project proponent may apply for release of an unspecified financial assurance, to be required by the County. Also at that time, the project proponent may request that SMARA declare the site successfully reclaimed. Page 1-15 of the RDEIR states that any areas not successfully restored within four years following the initial seeding "would be reevaluated to determine the measures necessary to improve revegetation success." With regard to financial assurances, page 22 of Appendix O, the Conceptual Wetland Mitigation Plan, states:

> A revegetation agreement shall be signed and notarized by the property owner following approval of this restoration plan and be accompanied by the required security as agreed upon by the County.

It is my understanding, from speaking to people who have been in consultation with the County and the Applicant during preparation of the RDEIR, that the amount of the "financial assurance" or "security" is a sum not to exceed $30,000 (if this is incorrect, please specify the actual amount of the performance bond that would be required). Given that tens of millions of dollars in aggregate would be removed from the site, the public can have no expectation that a "financial assurance" on the order of $30,000—or even ten times that amount—would represent a sufficient financial incentive to ensure full, long-term success of the revegetation/reclamation.

CONCLUSION

I appreciate the opportunity to evaluate the CEQA documentation for this important project. Please call me at 562-477-2181 if you have questions or wish to further discuss any matters; you may send e-mail to robb@hamiltonbiological.com.

Sincerely,

Robert A. Hamilton, President
Hamilton Biological, Inc.
http://hamiltonbiological.com

R-O7-85

Attachments: Literature Cited
CDFW Letter to City of Chula Vista dated April 21, 2021
Curriculum Vitae

cc: Jonathan Snyder, US Fish and Wildlife Service
David Zoutendyk, US Fish and Wildlife Service
Susan Wynn, US Fish and Wildlife Service
Dan Leavitt, US Fish and Wildlife Service
David Mayer, California Dept. of Fish and Wildlife
Heather Schmalbach, California Dept. of Fish and Wildlife

R-O7-84 (cont.) including revegetation. The amount is calculated in a Financial Assurance Cost Estimate (FACE) and is required to be updated annually to account for current prices and site conditions. The FACE is reviewed and approved by both the local lead agency and the California Department of Conservation's Division of Mines and Reclamation. The FAM cannot be released back to the operator until they have met standards of the approved reclamation plan, including the revegetation plan.

R-O7-85 The County acknowledges the attachments provided. However, the three attachments (list of literature cited, the entirety of a CDFW comment letter cited by the authority, and the author's curriculum vitae) do not raise any specific issues with the environmental analysis for the Project. No further response is required.

LITERATURE CITED

Anderson, D. R. 2001. The need to get the basics right in wildlife field studies. Wildlife Society Bulletin 29:1294–1297.

Baumberger, K. L., M. V. Eitzel, M. E. Kirby, and M. H. Horn. 2019. Movement and habitat selection of the Western Spadefoot (*Spea hammondii*) in southern California. PLOS ONE 14(10): e0222532. https://doi.org/10.1371/journal.pone.0222532

Becker, C. G., C. R. Fonseca, C. F. B. Haddad, R. F. Batista, and P. I. Prado. 2007. Habitat split and the global decline of amphibians. Science 318:1775–1777.

Beier, P. 1995. Dispersal of juvenile Cougars in fragmented habitat. Journal of Wildlife Management 59:228–237.

Brehme, C. S., S. A. Hathaway, and R. N. Fisher. 2018. An objective road risk assessment method for multiple species: ranking 166 reptiles and amphibians in California. Landscape Ecology 33:911–935.

Burton, A. C., E. Neilson, D. Moreira, A. Ladle, R. Steenweg, J. T. Fisher, E. Bayne, and S. Boutin. 2015. Wildlife camera trapping: a review and recommendations for linking surveys to ecological processes. Journal of Applied Ecology 52:675–685.

Halstead, B. J., K. L. Baumberger, A. R. Backlin, P. M. Kleeman, M. N., Wong, E. A. Gallegos, J. P. Rose, J.P. and R. N. Fisher. 2021. Conservation implications of spatio-temporal variation in the terrestrial ecology of Western Spadefoots. Journal of Wildlife Management 85:1377–1393.

Harper, E. B., T. A. G. Rittenhouse, and R. D. Semlitsch. 2008. Demographic consequences of terrestrial habitat loss for pool-breeding amphibians: predicting extinction risks associated with inadequate size of buffer zones. Conservation Biology 22:1205–1215.

Hebblewhite, M., and D. T. Haydon. 2010. Distinguishing technology from biology: a critical review of the use of GPS telemetry data in ecology. Philosophical Transactions of the Royal Society B: Biological Sciences 365:2303–2312.

Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. State of California, The Resources Agency.

Oberbauer, T., 1996, Terrestrial Vegetation Communities in San Diego County Based on Holland's Descriptions. Report prepared for San Diego Association of Governments, San Diego, CA.

Oberbauer, T., M. Kelly, and J. Buegge. 2008. Draft Vegetation Communities of San Diego County. Based on *Preliminary Descriptions of the Terrestrial Natural Communities of California*, R. F. Holland, Ph.D., October 1986.

O'Connell, A. F., J. D. Nichols, and K. U. Karanth (eds.) 2011. Camera Traps in Animal Ecology: Methods and Analyses. Springer, New York, NY.

Meek, P. D., G. A. Ballard, and P. J. S. Fleming. 2015. The pitfalls of wildlife camera trapping as a survey tool in Australia. Australian Mammalogy 37:13–22.

Richmond, J. Q., C. J. Rochester, N. W. Smith, J. A. Nordland, and R. N. Fisher. 2017. Rare alluvial sands of El Monte Valley, California (San Diego County), support high herpetofaunal species richness and diversity, despite severe habitat disturbance. Southwestern Naturalist 61(4):294–306.

Rochester, C. J., K. L. Baumberger, and R. N. Fisher. 2017. Draft Final Western Spadefoot (*Spea hammondii*): Independent scientific advisor report for the City of Santee Multiple Species Conservation Plan (MSCP) Subarea Plan.

San Diego County. 2010a. Report Format and Content Requirements, Biological Resources. Fourth Revision, September 15.

Searcy, C. A., E. Gabbai-Saldate, and H. B. Shaffer. 2013. Microhabitat use and migration distance of an endangered grassland amphibian. Biological Conservation 158:80–87.

Semlitsch, R. D. 1998. Biological delineation of terrestrial buffer zones for pond-breeding salamanders. Conservation Biology 12:1113–1119.

Semlitsch, R. D. 2008. Differentiating migration and dispersal processes for pond-breeding amphibians. Journal of Wildlife Management 72:260–267.

Semlitsch, R. D., and J. B. Jensen. 2001. Core habitat, not buffer zone. National Wetlands Newsletter 23:5–6, 11.

Semlitsch, R. D., and J. R. Bodie. 2003. Biological criteria for buffer zones around wetlands and riparian habitats for amphibians and reptiles. Conservation Biology 17:1219–1228.

US Fish and Wildlife Service. 2005. Recovery plan for vernal pool ecosystems of California and southern Oregon. Portland, OR.

Williams, B. K., J. D. Nichols, and M. J. Conroy. 2002. Analysis and Management of Animal Populations. Academic Press, San Diego, CA.

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

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

April 12, 2021

Mr. Jeff Steichen
City of Chula Vista
276 Fourth Avenue
Chula Vista, CA 91910
JSteichen@chulavistaca.gov

Subject: City of Chula Vista Encompass Health (PROJECT) Mitigated Negative Declaration (MND), SCH #2021030287

Dear Mr. Steichen:

The California Department of Fish and Wildlife (CDFW) received a Notice of Intent to Adopt an MND from the City of Chula Vista (City) for the Project pursuant the California Environmental Quality Act (CEQA) and CEQA Guidelines.[1]

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

CDFW 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. (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 administers the Natural Community Conservation Planning (NCCP) program (Fish and Game Code 2800, *et seq.*). In November 2003, CDFW issued their permit for the City's Multiple Species Conservation Program (MSCP) Subarea Plan (SAP). The City's SAP is the mechanism by which the City has obligated to assemble a preserve consistent with the goals of the MSCP Subregional Plan.

[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.

PROJECT DESCRIPTION SUMMARY

Proponent: Encompass Health California

Objective: The Project will construct an 80-bed inpatient rehabilitation facility with supporting amenities on the 9.79-acre site in two phases: phase 1 consists of up to 50 beds and phase 2 provides an additional 30 beds. Site access will be provided through Shinohara Lane. The Project also contains minor off-site improvements, including utility connections.

Location: The Encompass Health Project is located at 517 Shinohara Lane, east of Interstate 805 (I-805), west of Brandywine Avenue, and north of Main Street, within the City.

Biological Setting: The Project lies north of the Otay River and the Project site contains coastal sage scrub (CSS, 0.14 acre), *Eucalyptus* woodland (0.02 acre), disturbed habitat (9.38 acres), and developed land including a concrete-lined v-ditch (0.49 acre). The Project will permanently impact 9.38 acres of disturbed habitat and 0.06 acre of CSS, and the City will mitigate for impacts to CSS through the Habitat Loss and Incidental Take (HLIT) process at a ratio of 1:1 or 1.5:1. The mitigation ratio will depend upon the mitigation location. While the MND identifies a number of options for mitigation including both on-site and off-site preservation and restoration, the location of mitigation was not specified.

Sensitive species with potential presence to occur on site include burrowing owl (*Athene cunicularia*) and Otay tarplant (*Deinandra conjugens*). Both are Covered Species under the Chula Vista SAP and the Otay tarplant is further considered a Narrow Endemic species under the Chula Vista MSCP.

Timeframe: A timeframe was not provided for the Project.

COMMENTS AND RECOMMENDATIONS

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

I. Potential Impacts to Tier III Uplands

Potential Impacts to Non-native Grassland

COMMENT #1:

Section: Biology Letter Report for Encompass Health Chula Vista, City of Chula Vista, California (BLR), Flora, Page: 2

Issue: The Project will impact land that has been classified as disturbed, but CDFW is concerned that this habitat exhibits characteristics of a Non-native Grassland (NNG), which is a Tier III upland habitat in the City's SAP. Aerial imagery suggests that the Project contains areas that are regularly mowed and maintained. The evidence suggests much of the ongoing disturbance is occurring

outside of requisite buffer areas to nearby development; therefore, CDFW recommends the City carefully reconsider if some or all of the areas presently shown as Disturbed should be more appropriately designated as NNG, and mitigated as such consistent with the SAP requirements. To be consistent with the SAP, NNG impacts outside of the preserve need to be mitigated at a ratio of 0.5 to 1.0 acre per acre of impact, dependent on the location of mitigation.

Specific impacts: Most of the Project site (9.38 acres) has been classified as disturbed. The BLR indicates on page 2 that the site has been previously graded. Historic aerials of the site show that only the northern portion of the site was graded sometime between 1991 to 1993 (historicarials.com 2021), recent satellite imagery shows that majority of the site has been mowed periodically over the last several years (Google Earth Pro 2021). The BLR notes that two of the predominant species on site are non-native grass species, *Avena barbata* and *Bromus madritensis*, and also states that the site contains potential suitable habitat for burrowing owls, which are primarily a grasslands species. These factors indicate that the disturbed habitat could alternatively be characterized as disturbed non-native grassland.

Why impact would occur: The Project has the potential to impact disturbed non-native grassland but does not provide appropriate mitigation for these impacts due to the characterization of the land as disturbed.

Evidence impact would be significant: Potential impacts to non-native grassland would be considered significant without mitigation.

Recommended Potentially Feasible Mitigation Measure(s)

Mitigation Measure #CDFW-REC-1a:

To reduce impacts to less than significant: The MND should reassess the Project site for potential impacts to non-native grassland. Areas that are dominated by grass species and/or require periodic mowing should be considered for designation as NNG and mitigated appropriately.

Mitigation Measure #CDFW-BIO-1b:

To reduce impacts to less than significant: Any impacts to non-native grassland outside of the preserve shall be included in the HLIT permit and shall be mitigated at a ratio of 0.5 to 1.0 acre per one acre of impact, dependent on the location of mitigation.

II. Potential Impacts to Covered and Narrow Endemic Species

COMMENT #2:

Otay Tarplant

Section: BLR Special Status Plants and Attachment C: Special-Status Plant Species Potentially Occurring within the Project Study Area, Page: 6

Issue: The BLR concludes that there is low suitability for Otay tarplant presence due to a lack of suitable clay soils required for the species; however, alternative information available indicates that a part of the site may be suitable for Otay tarplant. Additionally, the BLR did not provide the dates of rare plant or vegetation surveys. Periodic mowing of the site may further complicate the

evaluation of presence of rare plants. For these reasons, potential impacts to Otay tarplant could occur.

Specific impacts: The information provided does not note the dates of vegetation or rare plant surveys, so it is uncertain if surveys were conducted during the appropriate blooming season for Otay tarplant, which is May through June (Calflora 2021). Periodic mowing of the site may have also complicated survey efforts. Therefore, it is not certain that Otay tarplant is absent from the site.

Why impact would occur: The BLR notes that Otay tarplant requires suitable clay soils and that these soils are not present on site, but it does not provide the soil types that are present. The southeastern portion of the site is characterized as Salinas clay loam, 2 to 9 percent slopes, which indicates that clay is the predominant soil type (United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey 2021). Additionally, there are occurrences of Otay tarplant approximately 670 feet from the site (California Natural Diversity Database (CNDDB 2021). The NCCP Local Assistance Grant (LAG) study, *Enhancing the Resilience of Edaphic Endemic Plants,* characterizes the area near the Project as moderate to high suitability for Otay tarplant (Conservation Biology Institute (CBI) et al 2018).

Evidence impact would be significant: Potential impacts to Otay tarplant would be significant without avoidance and mitigation since it is both a covered species and narrow endemic species under the SAP.

Recommended Potentially Feasible Mitigation Measure(s)

Mitigation Measure # CDFW-BIO-2a:

To reduce impacts to less than significant: Prior to construction, focused rare plant surveys shall be conducted within suitable habitat for Otay tarplant during the appropriate blooming season (May 1 through June 30). Mowing shall cease on site for the growing season prior to rare plant surveys, with the exception of mowing allowed adjacent to existing, adjacent development for fire fuel reduction purposes at the direction of the local fire authority.

Mitigation Measure # CDFW-BIO-2b:

To reduce impacts to less than significant: Any Otay tarplant identified on site during rare plant surveys shall be mitigated according to the SAP and in consultation with CDFW and the United States Fish and Wildlife Service (USFWS), collectively known as the Wildlife Agencies.

III. Mitigation

COMMENT #3:

Burrowing Owl

Section: BRL Survey Methods and Fauna, Pages: 1 and 3

Issue: The MND and BRL note that burrowing owls were not detected on site, although suitable habitat is present. The survey methods used, and the mitigation measure provided to detect and minimize impacts to burrowing owls, are not consistent with the most effective methods of

detecting the species as described in CDFW's Staff Report on Burrowing Owl Mitigation (CDFW Staff Report), Appendix D: Breeding and Non-breeding Season Surveys and Reports (2012).

Specific impacts: The BRL notes that survey results indicate signs of occupation by burrowing owls, but then concludes from the habitat assessment that the suitable burrow habitat is marginal. One focused survey was conducted in January, which is outside the typical nesting season for burrowing owls. These methods are not consistent with the guidance in the CDFW Staff Report and breeding owls may have not been detected during survey efforts.

Why impact would occur: The CDFW Staff Report (2012) recommends 4 surveys to detect the presence of burrowing owls: 1) at least one site visit between 15 February and 15 April and 2) a minimum of three survey visits at least three weeks apart, between 15 April and 15 July, with at least one visit after 15 June. As noted above, the January survey conducted for the Project and the proposed mitigation measure are not consistent with the current guidance for the species.

Recommended Potentially Feasible Mitigation Measure(s)

Mitigation Measure #CDFW-BIO-3a:

To reduce impacts to less than significant: Pre-construction surveys for burrowing owls shall be conducted consistent with the CDFW Staff Report recommendations: 1) at least one site visit between 15 February and 15 April, and 2) a minimum of three survey visits at least three weeks apart, between 15 April and 15 July, with at least one visit after 15 June.

Mitigation Measure #CDFW-REC-3b:

Early coordination with the Wildlife Agencies is recommended if burrowing owls are identified during any survey.

COMMENT #4:

Mitigation Options

Section: MND, Mitigation Necessary to Avoid Significant Impacts, Page: 22

Issue: Both the MND and the BRL note several mitigation options available for the Project. CDFW recommends that off-site mitigation options be employed due to the isolated nature of the on-site habitat that will remain after Project completion.

Recommended Potentially Feasible Mitigation Measure(s)

Mitigation Measure #CDFW-REC-4: CDFW recommends the mitigation bank option for compensatory mitigation of impacts to sensitive habitat. As suggested in the MND, use of the San Diego County Water Authority's San Miguel Conservation Bank is appropriate; other banks may be determined to be appropriate by the City through the HLIT process.

Editorial Comments and Suggestions

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 California Natural Diversity Database (CNDDB). The CNNDB field survey form can be found at the following link: http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/CNDDB_FieldSurveyForm.pdf. The completed form can be mailed electronically to CNDDB at the following email address: CNDDB@wildlife.ca.gov. The types of information reported to CNDDB can be found at the following link: http://www.dfg.ca.gov/biogeodata/cnddb/plants_and_animals.asp.

FILING FEES

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

CONCLUSION

CDFW appreciates the opportunity to comment on the MND to assist the City in identifying and mitigating Project impacts on biological resources.

Questions regarding this letter or further coordination should be directed to Elyse Levy, Senior Environmental Scientist, at Elyse.Levy@wildlife.ca.gov.

Sincerely,

DocuSigned by:
David Mayer
D700B4520375406...

David A. Mayer
Environmental Program Manager I
South Coast Region

Attachments:
Attachment A: Recommended Mitigation Measures

ec: CDFW
Jennifer Turner, San Diego – Jennifer.Turner@wildlife.ca.gov
Jennifer Ludovissy, San Diego – Jennifer.Ludovissy@wildlife.ca.gov
Susan Howell, San Diego – Susan.Howell@wildlife.ca.gov
CEQA Program Coordinator, Sacramento – CEQACommentLetters@wildlife.ca.gov

Jonathan Snyder, USFWS – Jonathan_d_Snyder@fws.gov
State Clearinghouse, Sacramento – State.Clearinghouse@opr.ca.gov

REFERENCES

Calflora: Information on California plants for education, research and conservation, with data contributed by public and private institutions and individuals, including the Consortium of California Herbaria. [web application]. 2021. Berkeley, California: The Calflora Database [a non-profit organization]. Available: https://www.calflora.org/ [Accessed: April 6, 2021].

California Department of Fish and Game. 2012. Staff Report on Burrowing Owl Mitigation. California Natural Resources Agency. Appendix D.

California Fish and Game Code §2080, §2800, §3503

California Natural Diversity Database (01/04/21). [ds45]. Calif. Dept. of Fish and Wildlife. Biogeographic Information and Observation System (BIOS). Retrieved April 6, 2021 from https://apps.wildlife.ca.gov/bios/

California Office of Planning and Research. 2019 or current version. CEQA: California Environmental Quality Act. Statutes and Guidelines, CEQA Guidelines Appendix G.

Conservation Biology Institute (CBI), U.S. Geological Survey (USGS), and San Diego Management and Monitoring Program (SDMMP). 2018. Enhancing the Resilience of Edaphic Endemic Plants. Prepared for the California Department of Fish and Wildlife Natural Community Conservation Planning Local Assistance Grant P1582108-01.

Google Earth Pro. 2021, Project area map. 32°35'51.51.12 N, 117°01'53.57. eye alt. 1,352 ft. Maxar Technologies 2021. earth.google.com/web/. [Accessed: April 6, 2021].

historicarials.com 2021 https://www.historicaerials.com/viewer [Accessed: April 6, 2021].

United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). 2018. Web Soil Survey. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

Attachment A: Recommendations and Mitigation Measures

Biological Resources			
	Mitigation Measures	**Timing**	**Responsible Party**
CDFW-BIO-1b	Impacts to non-native grassland shall be included in the HLIT permit and shall be mitigated at a ratio of 0.5 to 1.0 acre per one acre of impact outside of the preserve, dependent on the location of mitigation.	Prior to and During Construction	City/Project Proponent
CDFW-BIO-2a	Prior to construction, focused rare plant surveys shall be conducted within suitable NNG or CSS habitat for Otay tarplant during the appropriate blooming season (May 1 through June 30). Mowing shall cease on site for the growing season prior to rare plant surveys.	Prior to and During Construction	City/Project Proponent
CDFW-BIO-2b	Any Otay tarplant identified on site during rare plant surveys shall be mitigated according to the SAP and in consultation with CDFW and the United States Fish and Wildlife Service (USFWS.	Prior to and During Construction	Project Proponent
CDFW-BIO-3a	Pre-construction surveys for burrowing owls shall be conducted consistent with the CDFW Staff Report recommendations: 1) at least one site visit between 15 February and 15 April, and 2) a minimum of three survey visits at least three weeks apart, between 15 April and 15 July, with at least one visit after 15 June.	Prior to and During Construction	Project Proponent
	Recommendations	**Timing**	**Responsible Party**
CDFW-REC-1a	The MND should reassess the Project site for potential impacts to non-native grassland. Areas that are dominated by grass species and/or require periodic mowing should be included in this habitat category.	Prior to and During Construction	Project Proponent
CDFW-REC-3b	Early coordination with the Wildlife Agencies is recommended if burrowing owls are identified during any survey.	Prior to, during construction, and after	Project Proponent
CDFW-REC-4a	CDFW recommends the mitigation bank option for compensatory mitigation of impacts to sensitive habitat. As suggested in the MND, use of the San Diego County Water Authority's San Miguel Conservation Bank is appropriate; other banks may be determined to be	Prior to, during construction, and after	Project Proponent

	appropriate by the City through the HLIT process.		

Robert A. Hamilton

President, Hamilton Biological, Inc.

Expertise

Endangered Species Surveys
General Biological Surveys
CEQA Analysis
Population Monitoring
Vegetation Mapping
Construction Monitoring
Noise Monitoring
Open Space Planning
Natural Lands Management

Education

1988. Bachelor of Science degree in Biological Sciences, University of California, Irvine

Professional Experience

1994 to Present. Independent Biological Consultant, Hamilton Biological, Inc.

1988 to 1994. Biologist, LSA Associates, Inc.

Permits

Federal Permit to survey for the Coastal California Gnatcatcher and Southwestern Willow Flycatcher

MOUs with the California Dept. of Fish and Game to survey for Coastal California Gnatcatcher, Southwestern Willow Flycatcher, and Coastal Cactus Wren.

California Scientific Collecting Permit

Robert A. Hamilton has been providing biological consulting services in southern California since 1988. He spent the formative years of his career at the firm of LSA Associates in Irvine, where he was a staff biologist and project manager. He has worked as an independent and on-call consultant since 1994, incorporating his business as Hamilton Biological, Inc., in 2009. The consultancy specializes in the practical application of environmental policies and regulations to land management and land use decisions in southern California.

A recognized authority on the status, distribution, and identification of birds in California, Mr. Hamilton is the lead author of two standard references describing aspects of the state's avifauna: *The Birds of Orange County: Status & Distribution* and *Rare Birds of California.* Mr. Hamilton has also conducted extensive studies in Baja California, and for seven years edited the Baja California Peninsula regional reports for the journal *North American Birds*. He served ten years on the editorial board of *Western Birds* and regularly publishes in peer-reviewed journals. He is a founding member of the Coastal Cactus Wren Working Group and in 2011 updated the Cactus Wren species account for *The Birds of North America Online*. Mr. Hamilton's expertise includes vegetation mapping. From 2007 to 2010 he worked as an on-call biological analyst for the County of Los Angeles Department of Regional Planning. From 2010 to present he has conducted construction monitoring and focused surveys for special-status bird species on the Tehachapi Renewable Transmission Project (TRTP). He is a former member of the Los Angeles County Significant Ecological Areas Technical Advisory Committee (SEATAC).

Mr. Hamilton conducts general and focused biological surveys of small and large properties as necessary to obtain various local, state, and federal permits, agreements, and clearances. He also conducts landscape-level surveys needed by land managers to monitor songbird populations. Mr. Hamilton holds the federal and state permits and MOUs listed to the left, and he is recognized by federal and state resource agencies as being highly qualified to survey for the Least Bell's Vireo. He also provides nest-monitoring services in compliance with the federal Migratory Bird Treaty Act and California Fish & Game Code Sections 3503, 3503.5 and 3513.

Board Memberships, Advisory Positions, Etc.

Friends of Colorado Lagoon, Board Member (2014–present)

Coastal Cactus Wren Working Group (2008–present)

Los Angeles County Significant Ecological Areas Technical Advisory Committee (SEATAC) (2010–2014)

American Birding Association: Baja Calif. Peninsula Regional Editor, North American Birds (2000–2006)

Western Field Ornithologists: Associate Editor of Western Birds (1999–2008)

California Bird Records Committee (1998–2001)

Nature Reserve of Orange County: Technical Advisory Committee (1996–2001)

California Native Plant Society, Orange County Chapter: Conservation Chair (1992–2003)

Professional Affiliations

American Ornithologists' Union

Cooper Ornithological Society

Institute for Bird Populations

California Native Plant Society

Southern California Academy of Sciences

Western Foundation of Vertebrate Zoology

Mr. Hamilton is an expert photographer, and typically provides photo-documentation and/or video documentation as part of his services.

Drawing upon a robust, multi-disciplinary understanding of the natural history and ecology of his home region, Mr. Hamilton works with private and public land owners, as well as governmental agencies and interested third parties, to apply the local, state, and federal land use policies and regulations applicable to each particular situation. Mr. Hamilton has amassed extensive experience in the preparation and independent review of CEQA documents, from relatively simple Negative Declarations to complex supplemental and recirculated Environmental Impact Reports. In addition to his knowledge of CEQA and its Guidelines, Mr. Hamilton understands how each Lead Agency brings its own interpretive variations to the CEQA review process.

Representative Project Experience

From 2008 to present, Mr. Hamilton has served as the main biological consultant for the Banning Ranch Conservancy, a local citizens' group that successfully defeated efforts to implement a large proposed residential and commercial project on the 400-acre Banning Ranch property in Newport Beach. Mr. Hamilton reviewed, analyzed, and responded to numerous biological reports prepared by the project proponent, and testified at multiple public hearings of the California Coastal Commission. In September 2016, the Commission denied the application for a Coastal Development Permit for the project, citing, in part, Mr. Hamilton's analysis of biological issues. In March 2017, the California Supreme Court issued a unanimous opinion (*Banning Ranch Conservancy v. City of Newport Beach*) holding that the EIR prepared by the City of Newport Beach improperly failed to identify areas of the site that might qualify as "environmentally sensitive habitat areas" under the California Coastal Act. In nullifying the certification of the EIR, the Court found that the City "ignored its obligation to integrate CEQA review with the requirements of the Coastal Act."

Insurance

$3,000,000 professional liability policy (Hanover Insurance Group)

$2,000,000 general liability policy (The Hartford)

$1,000,000 auto liability policy (State Farm)

Other Relevant Experience

Field Ornithologist, San Diego Natural History Museum Scientific Collecting Expedition to Central and Southern Baja California, October/November 1997 and November 2003.

Field Ornithologist, Island Conservation and Ecology Group Expedition to the Tres Marías Islands, Nayarit, Mexico, 23 January to 8 February 2002.

Field Ornithologist, Algalita Marine Research Foundation neustonic plastic research voyages in the Pacific Ocean, 15 August to 4 September 1999 and 14 to 28 July 2000.

Field Assistant, Bird Banding Study, Río Ñambí Reserve, Colombia, January to March 1997.

References

Provided upon request.

From 2012 to 2014, Mr. Hamilton collaborated with Dan Cooper on *A Conservation Analysis for the Santa Monica Mountains "Coastal Zone" in Los Angeles County*, and worked with Mr. Cooper and the County of Los Angeles to secure a certified Local Coastal Program (LCP) for 52,000 acres of unincorporated County lands in the Santa Monica Mountains coastal zone. The work involved synthesizing large volumes of existing baseline information on the biological resources of the study area, evaluating existing land use policies, and developing new policies and guidelines for future development within this large, ecologically sensitive area. A coalition of environmental organizations headed by the Surfrider Foundation selected this project as the "Best 2014 California Coastal Commission Vote" (http://www.surfrider.org/images/uploads/2014CCC_Vote_Chart_FINAL.pdf).

In 2010, under contract to CAA Planning, Mr. Hamilton served as principal author of the *Conservation & Management Plan for Marina del Rey, Los Angeles County, California*. This comprehensive planning document has two overarching goals: (1) to promote the long-term conservation of all native species that exist in, or that may be expected to return to, Marina del Rey, and (2) to diminish the potential for conflicts between wildlife populations and both existing and planned human uses of Marina del Rey (to the benefit of humans and wildlife alike). After peer-review, the Plan was accepted by the Coastal Commission as an appropriate response to the varied challenges posed by colonial waterbirds and other biologically sensitive resources colonizing urban areas once thought to have little resource conservation value.

Contact Information

Robert A. Hamilton, President
Hamilton Biological, Inc.

316 Monrovia Avenue
Long Beach, CA 90803

562-477-2181 (office, mobile)

robb@hamiltonbiological.com
http://hamiltonbiological.com

Third Party Review of CEQA Documents

Under contract to cities, conservation groups, homeowners' associations, etc., Mr. Hamilton has reviewed EIRs and other project documentation for the following projects:

- Piraeus Point (residential, City of Encinitas)
- Cottonwood Sand Mine (golf course to aggregate mine, County of San Diego)
- Alpine County Regional Park (park establishment, County of San Diego)
- Trails at Carmel Mtn. Ranch (golf course to residential, City of San Diego)
- Otay Village 13 (residential, County of San Diego)
- Otay Village 14, Planning Areas 16/19 (residential, County of San Diego)
- Western Snowy Plover Mgmt. Plan (resource management, City of Newport Beach)
- Sanderling Waldorf School (commercial, City of Encinitas)
- Diamond Bar General Plan (open space planning, City of Diamond Bar)
- UC San Diego Long-range Development Plan (institutional, UC Regents)
- El Monte Sand Mining Project (resource extraction, County of San Diego)
- Faria/Southwest Hills Annexation Project (residential, City of Pittsburg)
- Los Cerritos Oil Consolidation/Wetland Restoration Project (resource extraction/habitat restoration, City of Long Beach)
- Safari Highlands Ranch (residential, City of Escondido)
- Newland Sierra (residential, County of San Diego)
- Harmony Grove Village South (residential, County of San Diego)
- Vegetation Treatment Program (statewide fire management plan, California Department of Forestry and Fire Protection)
- Watermark Del Mar Specific Plan (residential, City of Del Mar)
- Newport Banning Ranch (residential/commercial, City of Newport Beach)
- Davidon/Scott Ranch (residential, City of Petaluma)
- Mission Trails Regional Park Master Plan (open space planning, City of San Diego)
- Esperanza Hills (residential, County of Orange)
- Warner Ranch (residential, County of San Diego)
- Dog Beach, Santa Ana River Mouth (open space planning, County of Orange)
- Gordon Mull subdivision (residential, City of Glendora)
- The Ranch at Laguna Beach (resort, City of Laguna Beach)
- Sunset Ridge Park (city park, City of Newport Beach)
- The Ranch Plan (residential/commercial, County of Orange)
- Southern Orange County Transportation Infrastructure Improvement Project (Foothill South Toll Road, County of Orange)
- Gregory Canyon Landfill Rest. Plan (proposed mitigation, County of San Diego)
- Montebello Hills Specific Plan EIR (residential, City of Montebello; 2009 and 2014 circulations)
- Cabrillo Mobile Home Park (illegal wetland filling, City of Huntington Beach)
- Newport Hyatt Regency (timeshare conversion project, City of Newport Beach)
- Lower San Diego Creek "Emergency Repair Project" (flood control, County of Orange)
- Tonner Hills (residential, City of Brea)
- The Bridges at Santa Fe Units 6 and 7 (residential, County of San Diego)
- Villages of La Costa Master Plan (residential/commercial, City of Carlsbad)
- Whispering Hills (residential, City of San Juan Capistrano)
- Santiago Hills II (residential/commercial, City of Orange)
- Rancho Potrero Leadership Academy (youth detention facility, County of Orange)
- Saddle Creek/Saddle Crest (residential, County of Orange)
- Frank G. Bonelli Regional County Park Master Plan (County of Los Angeles)

Selected Presentations

Hamilton, R. A. Six Legs Good/Invertebral Limit. 2012-2020. 60-to-90-minute multimedia presentation on the identification and photography of dragonflies, damselflies, butterflies, and other invertebrates, given at Audubon Society chapter meetings, Irvine Ranch Conservancy, etc.

Hamilton, R. A. Birds of Colorado Lagoon. 2018-2019. 60-minute multimedia presentation on the history and avifauna of Colorado Lagoon in southeastern Long Beach, given at Audubon Society chapter meetings.

Hamilton, R. A., and Cooper, D. S. 2016. Nesting Bird Policies: We Can Do Better. Twenty-minute multimedia presentation at The Wildlife Society Western Section Annual Meeting, February 23, 2016.

Hamilton, R. A. 2012. Identification of Focal Wildlife Species for Restoration, Coyote Creek Watershed Master Plan. Twenty-minute multimedia presentation given at the Southern California Academy of Sciences annual meeting at Occidental College, Eagle Rock, 4 May. Abstract published in the Bulletin of the Southern California Academy of Sciences No. 111(1):39.

Hamilton, R. A., and Cooper, D. S. 2009-2010. Conservation & Management Plan for Marina del Rey. Twenty-minute multimedia presentation given to different governmental agencies and interest groups.

Hamilton, R. A. 2008. Cactus Wren Conservation Issues, Nature Reserve of Orange County. One-hour multimedia presentation for Sea & Sage Audubon Society, Irvine, California, 25 November.

Hamilton, R. A., Miller, W. B., Mitrovich, M. J. 2008. Cactus Wren Study, Nature Reserve of Orange County. Twenty-minute multimedia presentation given at the Nature Reserve of Orange County's Cactus Wren Symposium, Irvine, California, 30 April 2008.

Hamilton, R. A. and K. Messer. 2006. 1999-2004 Results of Annual California Gnatcatcher and Cactus Wren Monitoring in the Nature Reserve of Orange County. Twenty-minute multimedia presentation given at the Partners In Flight meeting: Conservation and Management of Coastal Scrub and Chaparral Birds and Habitats, Starr Ranch Audubon Sanctuary, 21 August 2004; and at the Nature Reserve of Orange County 10th Anniversary Symposium, Irvine, California, 21 November.

Publications

Hamilton, R. A. 2022. Book review: Bird Versus Bulldozer. *Western Birds* 53:335–339.

Hamilton, R. A. 2022. Book review: All About Birds, California. *Western Birds* 53:177–179.

Hamilton, R. A. 2022. Book review: Sacramento County Breeding Birds. *Western Birds* 53:83–85.

Gómez de Silva, H., Villafaña, M. G. P., Nieto, J. C., Cruzado, J., Cortés, J. C., Hamilton, R. A., Vásquez, S. V., and Nieto, M. A. C. 2017. Review of the avifauna of The Tres Marías Islands, Mexico, including new and noteworthy records. *Western Birds* 47:2–25.

Hamilton, R. A. 2014. Book review: The Sibley Guide to Birds, Second Edition. *Western Birds* 45:154–157.

Cooper, D. S., R. A. Hamilton, and S. D. Lucas. 2012. A population census of the Cactus Wren in coastal Los Angeles County. *Western Birds* 43:151–163.

Hamilton, R. A., J. C. Burger, and S. H. Anon. 2012. Use of artificial nesting structures by Cactus Wrens in Orange County, California. *Western Birds* 43:37–46.

Hamilton, R. A., Proudfoot, G. A., Sherry, D. A., and Johnson, S. 2011. Cactus Wren (*Campylorhyn-chus brunneicapillus*), *in* The Birds of North America Online (A. Poole, ed.). Cornell Lab of Ornithology, Ithaca, NY.

Hamilton, R. A. 2008. Cactus Wrens in central & coastal Orange County: How will a worst-case scenario play out under the NCCP? *Western Tanager* 75:2–7.

Erickson, R. A., R. A. Hamilton, R. Carmona, G. Ruiz-Campos, and Z. A. Henderson. 2008. Value of perennial archiving of data received through the North American Birds regional reporting system: Examples from the Baja California Peninsula. *North American Birds* 62:2–9.

Erickson, R. A., R. A. Hamilton, and S. G. Mlodinow. 2008. Status review of Belding's Yellowthroat *Geothlypis beldingi*, and implications for its conservation. Bird Conservation International 18:219–228.

Hamilton, R. A. 2008. Fulvous Whistling-Duck (*Dendrocygna bicolor*). Pp. 68-73 *in* California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California (Shuford, W. D. and T. Gardali, eds.). Studies of Western Birds 1. Western Field Ornithologists, Camarillo, CA, and California Department of Fish and Game, Sacramento, CA.

California Bird Records Committee (R. A. Hamilton, M. A. Patten, and R. A. Erickson, editors.). 2007. Rare Birds of California. Western Field Ornithologists, Camarillo, CA.

Hamilton, R. A., R. A. Erickson, E. Palacios, and R. Carmona. 2001–2007. *North American Birds* quarterly reports for the Baja California Peninsula Region, Fall 2000 through Winter 2006/2007.

Hamilton, R. A. and P. A. Gaede. 2005. Pink-sided × Gray-headed Juncos. *Western Birds* 36:150–152.

Mlodinow, S. G. and R. A. Hamilton. 2005. Vagrancy of Painted Bunting (*Passerina ciris*) in the United States, Canada, and Bermuda. *North American Birds* 59:172–183.

Erickson, R. A., R. A. Hamilton, S. González-Guzmán, G. Ruiz-Campos. 2002. Primeros registros de anidación del Pato Friso (*Anas strepera*) en México. Anales del Instituto de Biología, Universidad Nacional Autónoma de México, Serie Zoología 73(1):67–71.

Hamilton, R. A. and J. L. Dunn. 2002. Red-naped and Red-breasted sapsuckers. *Western Birds* 33:128–130.

Hamilton, R. A. and S. N. G. Howell. 2002. Gnatcatcher sympatry near San Felipe, Baja California, with notes on other species. *Western Birds* 33:123–124.

Hamilton, R. A. 2001. Book review: The Sibley Guide to Birds. *Western Birds* 32:95–96.

Hamilton, R. A. and R. A. Erickson. 2001. Noteworthy breeding bird records from the Vizcaíno Desert, Baja California Peninsula. Pp. 102-105 *in* Monographs in Field Ornithology No. 3. American Birding Association, Colorado Springs, CO.

Hamilton, R. A. 2001. Log of bird record documentation from the Baja California Peninsula archived at the San Diego Natural History Museum. Pp. 242–253 *in* Monographs in Field Ornithology No. 3. American Birding Association, Colorado Springs, CO.

Hamilton, R. A. 2001. Records of caged birds in Baja California. Pp. 254–257 *in* Monographs in Field Ornithology No. 3. American Birding Association, Colorado Springs, CO.

Erickson, R. A., R. A. Hamilton, and S. N. G. Howell. 2001. New information on migrant birds in northern and central portions of the Baja California Peninsula, including species new to Mexico. Pp. 112–170 *in* Monographs in Field Ornithology No. 3. American Birding Association, Colorado Springs, CO.

Howell, S. N. G., R. A. Erickson, R. A. Hamilton, and M. A. Patten. 2001. An annotated checklist of the birds of Baja California and Baja California Sur. Pp. 171–203 *in* Monographs in Field Ornithology No. 3. American Birding Association, Colorado Springs, CO.

Ruiz-Campos, G., González-Guzmán, S., Erickson, R. A., and Hamilton, R. A. 2001. Notable bird specimen records from the Baja California Peninsula. Pp. 238–241 *in* Monographs in Field Ornithology No. 3. American Birding Association, Colorado Springs, CO.

Wurster, T. E., R. A. Erickson, R. A. Hamilton, and S. N. G. Howell. 2001. Database of selected observations: an augment to new information on migrant birds in northern and central portions of the Baja California Peninsula. Pp. 204–237 *in* Monographs in Field Ornithology No. 3. American Birding Association, Colorado Springs, CO.

Erickson, R. A. and R. A. Hamilton, 2001. Report of the California Bird Records Committee: 1998 records. *Western Birds* 32:13–49.

Hamilton, R. A., J. E. Pike, T. E. Wurster, and K. Radamaker. 2000. First record of an Olive-backed Pipit in Mexico. *Western Birds* 31:117–119.

Hamilton, R. A. and N. J. Schmitt. 2000. Identification of Taiga and Black Merlins. *Western Birds* 31:65–67.

Hamilton, R. A. 1998. Book review: Atlas of Breeding Birds, Orange County, California. *Western Birds* 29:129–130.

Hamilton, R. A. and D. R. Willick. 1996. The Birds of Orange County, California: Status and Distribution. Sea & Sage Press, Sea & Sage Audubon Society, Irvine.

Hamilton, R. A. 1996–98. Photo Quizzes. *Birding* 27(4):298-301, 28(1):46-50, 28(4):309-313, 29(1): 59-64, 30(1):55–59.

Erickson, R. A., and Hamilton, R. A. 1995. Geographic distribution: *Lampropeltis getula californiae* (California Kingsnake) in Baja California Sur. *Herpetological Review* 26(4):210.

Bontrager, D. R., R. A. Erickson, and R. A. Hamilton. 1995. Impacts of the October 1993 Laguna fire on California Gnatcatchers and Cactus Wrens. *in* J. E. Keeley and T. A. Scott (editors). Wildfires in California Brushlands: Ecology and Resource Management. International Association of Wildland Fire, Fairfield, Washington.

Erickson, R. A., R. A. Hamilton, S. N. G. Howell, M. A. Patten, and P. Pyle. 1995. First record of Marbled Murrelet and third record of Ancient Murrelet for Mexico. *Western Birds* 26: 39–45.

Erickson, R. A., and R. A. Hamilton. 1993. Additional summer bird records for southern Mexico. *Euphonia* 2(4): 81–91.

Erickson, R. A., A. D. Barron, and R. A. Hamilton. 1992. A recent Black Rail record for Baja California. *Euphonia* 1(1): 19–21.

cbec
eco engineering
Hydrology | Hydraulics | Geomorphology | Design | Field Services

August 15, 2023

Ms. Carmen Borg
Shute, Mihaly & Weinberger LLP
396 Hayes Street
San Francisco, CA 94102-4421

Subject: Review of Recirculated Draft Environmental Impact Report
Cottonwood Sand Mine Project, San Diego County, CA

Dear Ms. Borg:

I have been retained by Shute, Mihaly & Weinberger LLP (SMW) to review the Recirculated Draft Environmental Impact Report (RDEIR dated June 2023) for the Cottonwood Sand Mine Project located in San Diego County, California. The purpose of this review is to evaluate if the project may impact surrounding properties and the environment. Previously, I reviewed and commented on the DEIR issued in December 2021. My comment letter (dated February 24, 2022) on the 2021 DEIR is provided as Attachment A.

My review of the RDEIR included Chapter 1.0 (Project Description, Location, and Environmental Setting), Appendix C (Biological Resources Technical Report), and Appendix P (Stormwater Quality Management Plan [SWQMP] for Priority Development Projects). My comments are restricted to materials presented in this chapter and appendices including how new information addresses or expands on my comments to the original DEIR. Based on my review of these materials, it is my professional opinion that the RDEIR is inadequate in evaluating the potential significant impacts of project actions on hydrology, water quality and biological resources. The rationale for this opinion is presented below.

539 Bret Harte Road, San Rafael, CA 94901 USA
T 916.668.5244 F 916.669.8886 g.kamman@cbecoeng.com
www.cbecoeng.com

Environmentally sustainable solutions for the water resources industry

R-O7-86

R-O7-86 The County acknowledges this attachment, which is a letter prepared by Greg Kamman, PG, CHG. Please see Responses to Comments R-O7-87 through R-O7-93, below, for responses to specific comments provided in this letter.

R-O7-87

1. Inaccurate Hydraulic Analysis of Flood Impacts

The Conclusions and Certification section of the SWQMP (PDF page 39 of Appendix P) states that prior hydraulic (HEC-RAS) modeling results presented in Appendix O (CEQA-Level Drainage Study for the Cottonwood Sand Mining Project) of the 2021 DEIR are correct. Item #1 of my prior comment letter (Attachment A) describes how hydraulic model analysis of the final (Phase 4) project grades is inaccurate and do not support the conclusion that the project will not significantly impact the 100-year flood water surface levels. Therefore, the DEIR conclusion of less than significant impacts to flooding hazards is not substantiated as Comment #1 in my February 24, 2023, letter is still applicable.

R-O7-88

2. Inaccurate Estimate of Future Water Demands and Impacts on Groundwater Supply

DMA Exhibit 1 (on-site) Mining Phases (pdf page 16 of RDEIR Appendix P [SWQPM]) cites, "Per Geo-Logic, the November 5, 2021, Groundwater Investigation Report indicates that the depth range for shallow groundwater is 25 to 70 feet below grade." As indicated on Figure 9 the November 5, 2021, Groundwater Investigation Report by Geo-Logic, the depth to groundwater in monitoring wells at the site range from 0 to 33 feet below ground surface (bgs); recorded water levels are 0' to 25' bgs in Lakes#11 monitoring well and 6' to 33' in the Ivanhoe #11 monitoring well). These monitoring data indicate groundwater conditions at the site are much shallower than reported in the RDEIR SWQPM.

Regarding where groundwater may be encountered and exposed in the three excavation pits during various phases of the project, the RDEIR states (page 1-22), "Exposure of groundwater as a free water surface at any given time in each of three pits would be limited to approximately five acres in size." However, as documented in Item #2 of my February 2022 comment letter (Attachment A), groundwater conditions under final project grades will lead to much more extensive exposure (in space and time) leading to significant evaporative losses that aren't quantified or accounted for in the original DEIR and RDEIR. Thus, the RDEIR has not adequately evaluated or substantiated how the project will impact groundwater supply and Comment #2 in my February 24, 2022, letter (Attachment A) still applies.

R-O7-89

3. Incomplete Analysis of Sediment Erosion and Water Quality Impacts

A note on DMA Exhibit 1 (on-site) Mining Phases (pdf page 16 of RDEIR Appendix P [SWQPM]) states, "There are no permanent storm water control BMPs for the Mining Areas." This implies that there are no permanent erosion and water quality control BMPs associated with the 20-foot-tall rock riprap channel erosion barriers (drop structures) that span the entire project floodplain width located at the upstream end of the project and Steele Canyon Road. In addition, there is nothing new in the RDEIR and SWQPM pertaining to the description/design of the drop structures that alter my prior Comment #3 in Attachment A. Therefore, my Comment #3 to the DEIR (Attachment A), which concludes that the project does not evaluate potential drop structure erosion impacts on water quality, is still relevant and applicable.

R-O7-90

4. Potential Impacts of Reclamation Grading Plan

R-O7-87 The comment states that the hydraulic model analysis is based on inaccurate post-reclamation grades and that the Project would result in significant impacts associated with 100-year floods. Please see Response to Comment R-O7-27 for a response to the attachment author's prior letter dated February 24, 2023, which addresses both issues noted in this comment.

R-O7-88 Please see Response to Comment R-O7-28 and R-O7-29, above, and Response to Comment D-O8-81, which address depth to groundwater and incorrect statements that the Project would significantly impact groundwater supply.

R-O7-89 Please see Topical Response 12 and Response to Comment R-O7-30. The referenced statement in DMA Exhibit 1 that "There are no permanent storm water control BMPs for the Mining Areas" is correct. The drop structures are associated with DMAs in the SWQMP and identified as self-mitigating areas that do not require permanent storm water control BMPs. As stated in Section 6.1, *Self-mitigating DMAs*, of the PDP SWQMP (RDEIR and FEIR Appendix P), the drop structures are identified as incidental impervious areas within the applicable DMAs and would meet all design requirement criteria for self-mitigating areas. The proposed drop structures were designed to resist erosion with the purpose of addressing potential impacts related to erosion and sediment transport downstream from high velocity flow during high river flow conditions. By design, these structures would reduce effects related to erosion and water quality and would not result in significant impacts.

R-O7-90 Please see Topical Response 5 regarding backfill. Backfill quality testing and documentation would be completed in general accordance with the Department of Toxic Substances Control (DTSC) guidance from 2001, entitled, DTSC Information Advisory Clean Imported Fill Material Fact Sheet. The SWMQP refers to the future SWPPPs. The SWPPPs would specify the specific backfill

R-O7-90 cont.

The revised Project Description in the RDEIR indicates that 2.5 million cubic yards (CY) of backfill material will need to be imported to achieve final (Phase 4) site grades. Section 1.2.1.1 of the RDEIR states that most of this backfill material will include "inert" debris, "consisting of excavated soil material from development projects, clean demolition materials, and possibly concrete, asphalt and rock", all imported from off-site. However, the RDEIR does not indicate how the project will ensure that this "inert" material is uncontaminated. If contaminated, imported backfill can significantly impact water quality to domestic and ecological supplies. It is my professional opinion that the RDEIR Project Description and SWQMP fails to indicate that imported backfill used onsite will be screened in compliance with the San Diego Regional Water Quality Control Board (RWQCB) Order #R9-2014-0014, the EPA Region 9 Regional Screening Levels (RSLs), and the California Department of Toxic Substances Control (DTSC) Soil Screening Levels (SSLs) for Soil for Residential or Commercial/Industrial use. In addition, the Project Description and SWQMP fails to indicate that the placement and exposure of backfill material consisting of concrete, asphalt, and rock, especially in the floodplain and channel, will be completed in a manner that prohibits scour and erosion.

R-O7-91

The RDEIR project description now includes additional truck trips (58 per day over a 10-year period) to import backfill material. The mechanical placement and grading of this material per project plans will also be necessary. Page S-14 of the RDEIR indicates that Air Quality and GHG potential impacts were reanalyzed, but the results of these analyses are not included in recirculation of DEIR for public review and comment because it was determined that no significant impact would occur. Although the additional fill import truck trips are discussed as having been incorporated into the new analyses, it is unclear if the additional backfill "mobile and processing equipment" were too. The RDEIR also states that the reanalysis included "correcting overly conservative assumptions applied in the DEIR." If there have been significant changes to the analysis, the RDEIR should include this "new information" regardless of findings of significance. This same comment applies to the Health Risk Assessment (HRA), VMT and noise assessments.

R-O7-92

5. Potential Impacts to Existing Riparian Habitat

There is nothing new pertaining to the RDEIR Project Description that alters my prior Comment #5 to the DEIR (see Attachment A) about potential impacts to existing riparian habitat. Therefore, because the RDEIR has not sufficiently analyzed potential adverse impacts and mitigations to existing riparian habitat areas, my Comment #5 to the DEIR is still valid.

R-O7-93

6. No Analysis on Impacts of Aggregate Wash Fines Reuse

There is nothing new in the RDEIR Project Description that alters my prior Comment #6 to the DEIR (see Attachment A) pertaining to the potential impacts associated with the final placement of wash fines in the channel and floodplain corridor. Therefore, it is my opinion that the RDEIR has not sufficiently analyzed potential adverse impacts and mitigations to water quality, water resources, and ecological conditions and my Comment #6 to the DEIR is still justified.

R-O7-90 (cont.) screening requirements imposed upon the Project. Regarding potential for scour and erosion, a SWPPP, erosion control plan, and associated BMPs would be implemented during the Project's mining and backfill operations to address potential erosion and water quality impacts. In the post-mining (reclaimed) condition, the Project site would include a greater amount of native vegetation than the existing golf course condition, which would likely reduce water quality impacts compared to existing conditions.

R-O7-91 Please see Topical Response 1, which describes why only portions of the DEIR were recirculated for public review; and Topical Response 3 for a discussion of the revisions to the air quality and GHG analyses. The equipment and activity necessary to achieve the "mechanical placement and grading" of backfill material was included in the DEIR; no new or different equipment would be necessary to handle the imported material, as the same equipment assumed in the modeling for reclamation with wash fines would be used for the imported material. It was only the truck trips that had been erroneously omitted from the DEIR Project description. Updates to the technical studies to clarify that the erroneously omitted truck trips do not result in new significant impacts or substantially more severe significant impacts are included in the FEIR.

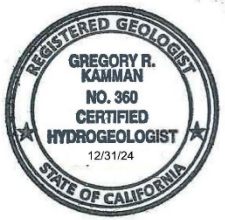
R-O7-92 The comment reiterates comments made in the author's prior letter, submitted during the public review period for the DEIR. Please see Responses to Comments D-O8-13 and D-O8-18, which respond to these comments made on the DEIR.

R-O7-93 The comment reiterates comments made in the author's prior letter, submitted during the public review period for the DEIR. Please see Response to Comment D-O8-81, which responds to the comment made on the DEIR.

Please feel free to contact me with any questions regarding the material and conclusions contained in this letter.

Sincerely,

Greg Kamman, PG, CHG
Senior Ecohydrologist



Review of Recirculated Draft Environmental Impact Report
Cottonwood Sand Mine Project, San Diego County, CA

R-O7-94

ATTACHMENT A

Kamman's February 24, 2022, Comment Letter to DEIR

cbec, inc.

R-O7-94 Please see Response to Comments D-O8-1 through D-O8-97, where the Shute, Mihaly & Weinberger Attorneys for the Sierra Club San Diego Chapter's comment letter dated February 28, 2022, that was enclosed with the August 18, 2023, RDEIR comment letter is included in full. The duplicative letter is not enclosed herein.

cbec
eco engineering
Hydrology | Hydraulics | Geomorphology | Design | Field Services

February 24, 2022

Ms. Carmen Borg
Shute, Mihaly & Weinberger LLP
396 Hayes Street
San Francisco, CA 94102-4421

Subject: Review Draft Environmental Impact Report
Cottonwood Sand Mine Project, San Diego County, CA

Dear Ms. Borg:

I am a hydrologist with over thirty years of technical and consulting experience in the fields of geology, hydrology, and hydrogeology. I have been providing professional hydrology and geomorphology services in California since 1989 and routinely manage projects in the areas of surface- and groundwater hydrology, water supply, water quality assessments, water resources management, and geomorphology. Most of my work has been in the Coast Range watersheds of California. My areas of expertise include: characterizing and modeling watershed-scale hydrologic and geomorphic processes; evaluating surface- and ground-water resources/quality and their interaction; assessing hydrologic, geomorphic, and water quality responses to land-use changes in watersheds and causes of stream channel instability; assisting and leading in the development of CEQA environmental compliance documents and project environmental permits; and designing and implementing field investigations characterizing surface and subsurface hydrologic and water quality conditions. I earned a Master of Science degree in Geology, specializing in sedimentology and hydrogeology as well as an A.B. in Geology from Miami University, Oxford, Ohio. I am a Certified Hydrogeologist (CHG) and a registered Professional Geologist (PG) in the state of California. A copy of my resume is attached.

I have been retained by Shute, Mihaly & Weinberger LLP (SMW) to review the Draft Environmental Impact Report (DEIR) for the Cottonwood Sand Mine Project located in San Diego County, California, and evaluate if the project may impact surrounding properties and the environment. Specifically, I have reviewed the DEIR, technical appendices, and project documents. Based on my review of these materials, it is my professional opinion that the DEIR is inadequate in evaluating the potential significant impacts of project actions on hydrology, water quality and biological resources. The rationale for this

539 Bret Harte Road, San Rafael, CA 94901 USA
T 916.668.5244 F 916.669.8886 g.kamman@cbecoeng.com
www.cbecoeng.com

Environmentally sustainable solutions for the water resources industry

opinion is based on multiple findings presented below.

1. Inaccurate Hydraulic Analysis of Flood Impacts

DEIR states (pg. 3.1.5-19) that based on modeling results, the proposed project would not increase the 100-year water surface elevations at the majority of cross-section locations. The flooding analysis and HEC-RAS Hydraulic Model simulation results for the various project Phases are contained in Appendix O to the DEIR. I assume that the Phase 4 model and simulation results reflect the final project grades. To compare model cross-section geometry to the Phase 4 project grades presented on the proposed project Plot Plan and Reclamation Plan (MUP-18-023-PlotPlanAndReclamationPlan), I created Figure 1, which plots the model cross-section locations (also referred to as River Stations [RS] in Appendix O) onto the Reclamation Plan sheets.

When comparing the land surface profiles of the Phase 4 model cross-sections to the Phase 4 Reclamation Plan grades, I observed some discrepancies at the west end of the project where final grade elevations will be higher than existing grades (western area or red shading on Figure 1). It appears to me that the Phase 4 (final grade) hydraulic model does not incorporate the elevated fill surface into cross-section profiles (RS-10 through RS-90) in this area, but instead uses existing condition ground surface elevations. Figures 2a through 2d are a schematic presentation of the approximate areas and thicknesses of missing fill proposed under Phase 4, and representative of final grades, within each cross-sectional profile for RS-10 through RS-90.

The Phase 4 hydraulic analysis presented in Appendix O is flawed as it does not consider for the elevated surfaces in the fill area located in and between RS-10 and RS-90. If captured accurately in the model cross-sections, this entire fill area would obstruct and alter flow patterns, likely raising 100-year flood water surface elevations higher than those reported for this area. This would compound the on-site increases in 100-year water surface elevations reported at RS-20 and RS-60 reported for the Phase 4 hydraulic model simulations. It is my opinion that because the hydraulic model does not include these fill areas in model geometry, the Phase 4 flood analysis presented in Appendix O is inaccurate and provides incorrect estimates of the on- and off-site 100-year water surface elevations. Therefore, the DEIR conclusion of less than significant impacts to flooding hazards is not substantiated. It may also have bearing on the validity of the hydraulic analysis results used to inform the Letter of Map Revision (LOMR Case No. 20-09-2025P dated December 1, 2020, effective April 14, 2001) associated with the project and cited on page 3 of Appendix O.

2. Inaccurate Estimate of Future Water Demands and Impacts on Groundwater Supply

The DEIR states that project groundwater demands are primarily associated with mining operations and evapotranspiration from post-reclamation vegetation communities and estimated future groundwater demands are significantly less than current golf course operation demands. Based on my review, it appears the Groundwater Investigation report provided as Appendix R to the DEIR estimates future vegetation water demands is based on existing condition grades not the post-Reclamation grades.

Comparison of available groundwater level data against Phase 4 (final) grades indicates there will be large areas of ground lowering that will intersect the groundwater table, creating surface ponding and generating losses due to evaporation. To illustrate this future condition, I prepared Figures 3 and 4. Figure 3 was modified from Figure 9 of Appendix R to include the post-Reclamation (Phase 4) ground surface elevations at the well sites located at the upstream/east (well Ivanhoe #11) and downstream/west (well Lakes #11) boundaries of the project site. As indicated on Figure 3, the ground surface elevation will be lowered by approximately 18 feet in elevation at well Ivanhoe #11 and by approximately 6 feet at well Lakes #11. Comparing final project grades to historic groundwater levels at these locations indicates that lowering site grades will result in reduce depth to groundwater and increased frequency and duration of groundwater intersecting and/or rising above the ground surface. As a result, the exposure of exposed groundwater to evaporation would occur for increased lengths of time, with prolonged (multi-month to annual) exposure during wet years. The aerial extent of land lowering relative to groundwater table elevations through the site is depicted in Figure 4, which plots the historical range of groundwater table elevations (blue lines), as inferred from the Ivanhoe #11 and Lakes #11 wells, against existing grades (thin black lines) and final grades (thick black lines) along the project profile. Figure 4 depicts areas and depths of potential future groundwater ponding throughout the project site.

The future losses of groundwater exposed above the ground surface by evaporation are not acknowledged or quantified in the DEIR, therefore potential impacts on groundwater supply have not been accurately quantified. Therefore, DEIR statement that the proposed Project would have less than significant impacts to groundwater storage is not substantiated by the technical studies that support the claim.

The lowering of the ground surface associated with project implementation will also result in depths to groundwater that are shallower than evaluated in the DEIR. Reduced depth to groundwater may lead to changes in the aerial extent of vegetation communities as mapped in the Reclamation Plan as well as increased evapotranspiration demands on shallow groundwater over those evaluated in the DEIR. The shallower groundwater table and routine ponding, where exposed, may also impact the survival of less water-tolerant vegetation communities, impacting the viability of the proposed Reclamation vegetation. The feasibility of the proposed Reclamation revegetation plan is also impacted by altered exposure to shallow groundwater and seasonal/wet-year ponding.

3. Incomplete Analysis of Sediment Erosion and Water Quality Impacts

The project proposes construction of a 20-foot-tall rock riprap channel erosion barrier (drop structure) that spans the entire project width where the upstream end of the mined-out project floodplain transitions with the existing upstream river corridor. A second corridor-spanning drop structure is proposed immediately downstream of the Steele Canyon Road crossing. The drop structures would be constructed as a riprap faced3:1 (horizontal: vertical) ramp down into the pit with the base keyed into the earthen bed within the pit. The drop structures are intended to mitigate for potential erosion and upstream head cutting.

Page 5 of drainage study (Appendix O) states that simulated 100-year flow velocities within the site at the completion of mining would be less than 6 feet per second (ft/s) and not considered erosive. However, these velocities are representative of the 100-year flow, when the site is broadly and deeply

inundated and pits and depressions are full of water and much of the drop structures may be submerged. Based on my experience, without the presence of pit ponding and submergence, these types of structures would create high velocities during periods of moderate to high river flow when water is cascading over and down the face of the drop structures causing erosion in the pit at the toe (base) of the structure. These types of flows occur during storms of lesser magnitude than a 100-year event or during the onset of high flow events as flow magnitudes are ramping up to their peak and there is no pre-existing ponding.

The hydraulic analysis presented in Appendix O does not effectively evaluate or address the hydraulics of the drop structure – the modeling approach presented over-simplifies the system, eliminating the high flow velocities that would result if the pits were not full of ponded water. If a broader range of flood flows and starting conditions (i.e., presence/absence of ponding) were modeled, it is likely that there would be higher velocities, turbulent flow hydraulics and significant scour potential at the base of the drop structures. Thus, this mitigation (drop structure) imparts a potential adverse erosion impact and would elevate sediment and turbidity (TDS) concentrations of storm flow and adversely impact revegetation efforts within the pit. However, the hydraulic analysis presented in the DEIR masks and therefore disregards this project condition.

4. Questionable Feasibility of Reclamation Grading Plan

The Project proposes some very large and deep over-excavation pits during the early mining Phases that will require backfilling to attain the Phase 4 (final) post-project grades. There are also areas where finished grades will be significantly higher (up to 10 feet) than existing grades (two shaded areas of Figure 1). I refer to these two shaded areas on Figure 1 as "mounded areas" below.

The DEIR states (pg. 1-3) that approximately 4.3 million cubic yards (MCY) of material are proposed to be extracted, producing 3.8 MCY of sand and gravel for market use and the remaining 10 percent (0.5 MCY) consisting of waste material undesirable for processing. I assume the waste material appears to be the primary source of backfill material to fill over-excavation pits and create mounded areas higher than existing grades as the DEIR does not reference other sources of backfill material, either generated from the project or imported from off-site.

Based on a preliminary review of the Project Plot and Reclamation Plans, I was skeptical that there is sufficient waste material generated by the project to backfill over excavation areas and create the final post-project grades. To evaluate this issue, cbec staff georeferenced and digitized the Project Plot and Reclamation Plan contours to generate digital elevation models (DEM) of existing conditions, cumulative excavation, and final project grades. Shaded relief maps of these DEMs are presented in Figures 5 through 7. All DEM surface generation and analysis was performed using GIS and GIS analysis software.

To estimate the total volume of material extracted by the project, a volume estimate between the existing condition and cumulative excavation DEMs was performed. This comparison yielded a total extraction volume of 4.7 MCY, a slightly higher value than reported in the DEIR. To estimate the total volume of fill material required to achieve the final project grade, a volume comparison was performed between the cumulative excavation and final grade DEMs. This comparison indicates that 3.4 MCY of fill material is required to achieve the post-project final grade, a value that is almost 7 times the higher than the estimated waste material volume.