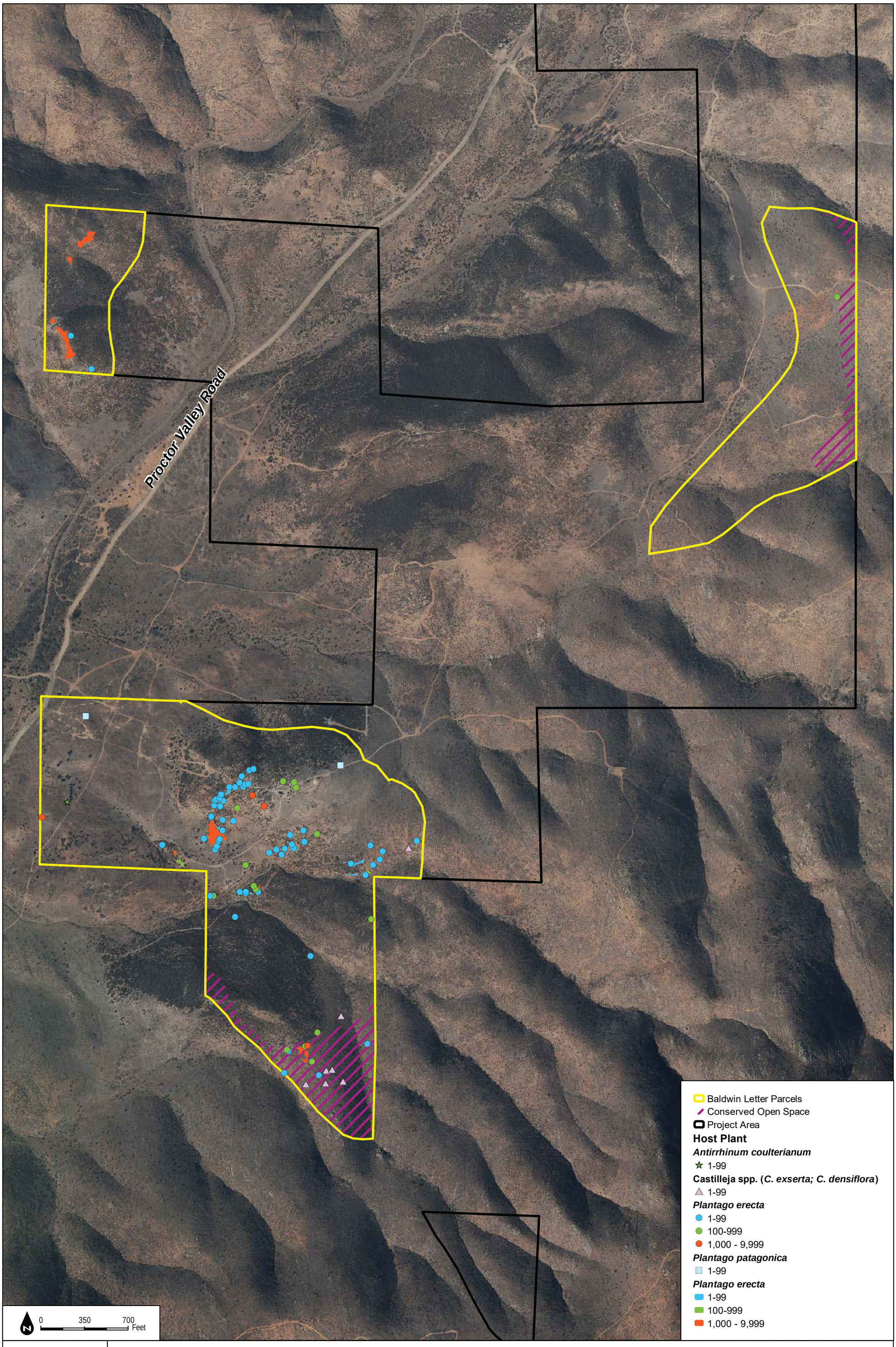

SOURCE: NAIP 2016, Hunsacker 2017, HELIX 2016

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Figure 4
Quino Checkerspot Butterfly Host Plants

Otay Ranch Village 14 and Planning Areas 16/19

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Findings: The Proposed Project would maximize habitat structural diversity of conserved areas by providing preservation of areas within PV2 and PV3 that include 0.1 acres of Quino checkerspot butterfly host plant and 20.1 acres of suitable habitat for this species and 0.8 acres of Hermes copper butterfly host plant. In addition, the Conserved Open Space includes 0.06 acres of waters/streambed. These areas would have otherwise been developed under the Otay Ranch GDP/SRP and County General Plan Development Footprint. Additional preservation would be provided within the Otay Ranch RMP Preserve, which is an integral component of the MSCP Preserve. The Otay Ranch RMP Preserve essentially functions as Otay Ranch's mitigation bank and possesses characteristics of high to very high habitat structural diversity and conservation of unique habitats and habitat features. Therefore, the proposed development within PV1, PV2, and PV3 would be in conformance with this criterion.

3. ***Provide for the conservation of spatially representative (e.g., north of I-8 vs south of I-8) examples of extensive patches of coastal sage scrub and other habitat types that were ranked as having high and very high biological value by the MSCP habitat evaluation model.***

   Discussion Specific to PV1, PV2, and PV3: Per Figure 4-1, Habitat Evaluation Model, of the MSCP County Subarea Plan, PV1 (18.9 acres) is designated as high habitat value (County of San Diego 1997). Of the 44.6 acres within PV2, 21.2 acres is considered to have very high habitat value, 9.2 acres is considered to have high habitat value, and 14.3 acres is considered to have moderate habitat value (Figure 5, Habitat Evaluation Model). Within PV3, 92.8 acres of the 134.5 acres is considered to have very high habitat value and 11.3 acres is considered to have high habitat value, while the remaining acreages vary from moderate (13.4 acres) to low (14.3 acres) habitat value, with 2.7 acres having no evaluation. Proposed development within PV1, PV2, and PV3 would have impacts to 98.1 acres of coastal sage scrub categorized as high or very high habitat value but would conserve 18.2 acres of coastal sage scrub that would be subject to development under the Otay Ranch GDP/SRP. Of the 18.2 acres of coastal sage scrub within Conserved Open Space, 10.8 acres is considered to have moderate to high habitat value and the remaining acreage is categorized as having low habitat value.

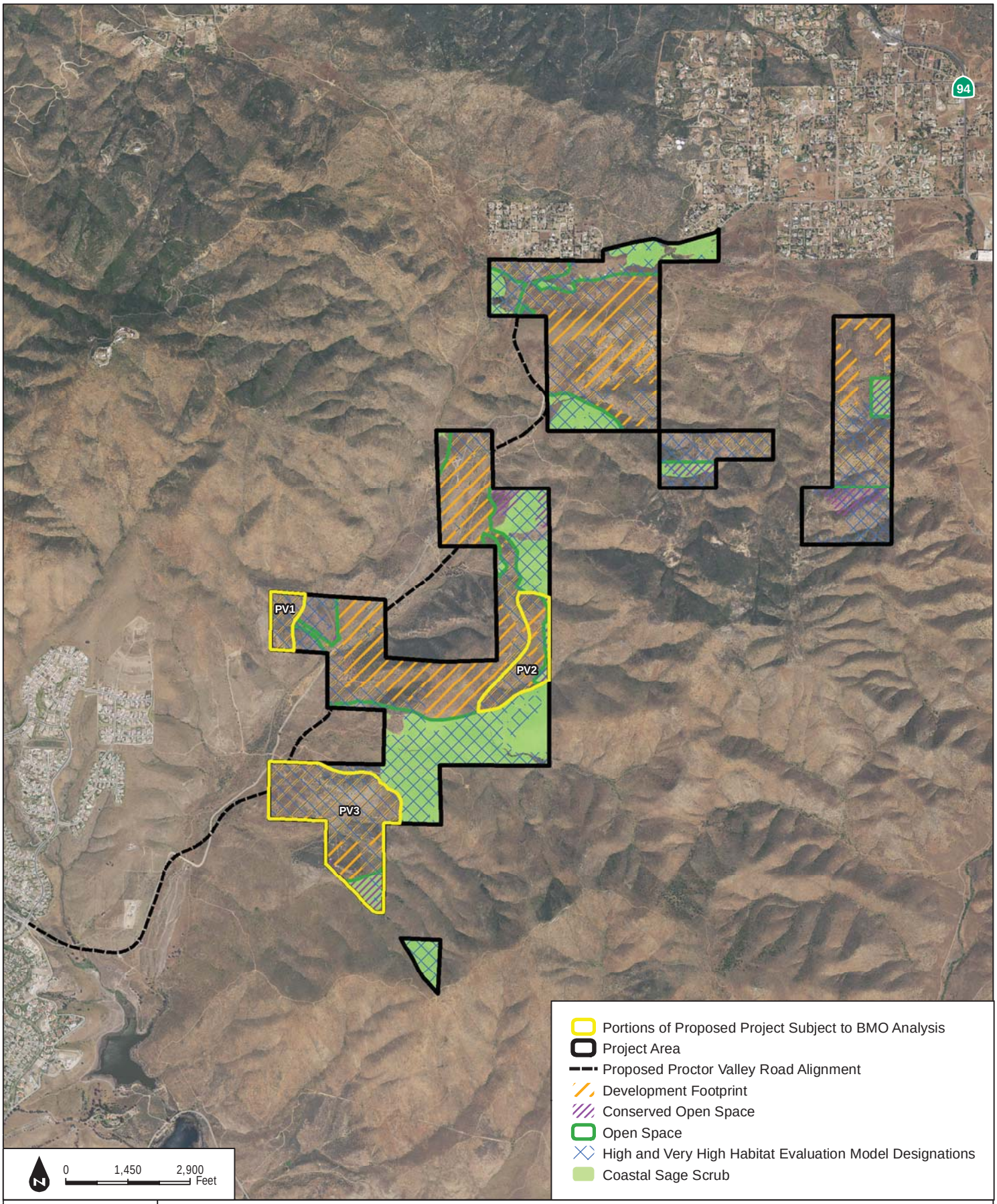
   Discussion in the Context of the Otay Ranch RMP Preserve: The overall mitigation requirements for the Proposed Project, including development on PV1, PV2, and PV3, are set forth in the conveyance obligation outlined in the Otay Ranch RMP. Pursuant to the Otay Ranch RMP Preserve Conveyance Obligation, the Proposed Project would convey 1.188 acres of Otay Ranch RMP Preserve for every 1 acre of Otay Ranch development, which may be satisfied with any acre of Otay Ranch RMP Preserve regardless of location, ownership, or habitat value. According to these requirements, the Proposed Project would be required to convey approximately 776.8 acres to the Otay

Ranch RMP Preserve. For PV1, PV2, and PV3, the development equals 203.5 acres (171.3 acres of impacts mitigated at the 1.188 ratio totals 203.5 acres), which would be conveyed specifically to mitigate the impacts of the development (Table 1).

Beyond the mitigation requirements of the Otay Ranch RMP, the BMO mitigation ratios would require an additional 24.6 acres to mitigate the impacts of development on PV1, PV2, and PV3 for a total mitigation requirement of 228.1 acres. These 228.1 acres of mitigation would be located in either the on-site Otay Ranch RMP Preserve or the Conserved Open Space areas on-site and would be like-kind (or up-tiered) habitat. For example, development of PV1, PV2, and PV3 would impact 109.2 acres of coastal sage scrub. Based on the BMO-required mitigation ratios, the mitigation requirement for PV1, PV2, and PV3 would be 168.8 acres of coastal sage scrub. In the Project Area, there are 264.2 acres of coastal sage scrub in the Otay Ranch RMP Preserve and an additional 45.2 acres of coastal sage scrub within Conserved Open Space for a total of 309.4 acres. Therefore, there is more than sufficient like-kind habitat (309.4 acres) within the Project Area to mitigate the coastal sage scrub impacts from development of PV1, PV2, and PV3. The majority of this like-kind habitat is of high to very high habitat value (183 acres (59%) is designated as very high habitat value and 56.6 acres (18%) is designated as high habitat value), with much of it found in large patches.

Additional Otay Ranch RMP Preserve land would be acquired outside the boundaries of the Project Area to meet the 1.188 Otay Ranch RMP Preserve Conveyance Obligation requirements for the Proposed Project (776.8 acres of Preserve conveyance). Of the 776.8 acres of required conveyance, 426.7 of Otay Ranch RMP Preserve within the Project Area will be conveyed. The additional 350.1 acres required for mitigation would be purchased off site within the Otay Ranch RMP Preserve. Additional mitigation as a result of the BMO analysis may be satisfied through onsite or offsite conveyance or Conserved Open Space within the overall Project Area, including PV2 and PV3. It is anticipated that the off-site conveyance of land to the Otay Ranch RMP Preserve, which is required to meet the Proposed Project's overall conveyance obligations, would preserve additional areas of coastal sage scrub and other high to very high habitat value. Once the off-site mitigation location is determined, a biological assessment of that parcel would determine the amount of high habitat value.

Therefore, with the Otay Ranch RMP Preserve Conveyance Obligation requirements for impacts from development of PV1, PV2, and PV3 (i.e., 203.5 acres) and additional mitigation required by the BMO mitigation ratios (24.6 acres), the like-kind mitigation conveyed for impacts within PV1, PV2, and PV3 would provide for the conservation of spatially representative examples of extensive patches of coastal sage scrub and other habitat types that are ranked as having high and very high biological value by the MSCP County Subarea Plan habitat evaluation model.



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SOURCE: NAIP 2016; Hunsaker 2017

FIGURE 5

Habitat Evaluation Model

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Findings: As discussed previously, impacts to coastal sage scrub and other sensitive habitat types within PV1, PV2, and PV3 would be mitigated through either conveyance management and funding of 228.1 acres within the Otay Ranch RMP Preserve or preservation and management of Conserved Open Space on site through a conservation program and long-term funding. This mitigation would provide for conservation of spatially representative, extensive patches of coastal sage scrub and other high and very high biological values. The preservation in PV1, PV2, and PV3 includes 20.1 acres of Conserved Open Space, of which 7.1 acres is high/very high habitat value and contiguous to other areas considered to have high habitat value in the Otay Ranch RMP Preserve. As shown in Table 1, the 20.1 acres of Conserved Open Space helps to meet the habitat based mitigation requirements of this BMO analysis (Table 5). As stated previously, the Otay Ranch RMP Preserve is a component of the MSCP Preserve. Development of PV1, PV2, and PV3 would be consistent with this criterion.

4. ***Create significant blocks of habitat to reduce edge effects and maximize the ratio of surface area to the perimeter of conserved habitats using the criteria set out in Chapter 6, Section 6.2.3 of the MSCP [County Subarea] Plan. Potential impacts from new development on biological resources within the Preserve that should be considered in the design of any project include access, non-native predators, non-native species, illumination, drain water (point source), urban runoff (non-point source), and noise.***

   Discussion Specific to PV1, PV2, and PV3: The Preserve Edge Plan for PV1, PV2, and PV3 creates a 100-foot buffer between the Otay Ranch RMP Preserve and development. The Preserve Edge Plan identifies the limited uses and functions allowed within the 100-foot-wide Preserve edge and provides a list of plant species that are appropriate adjacent to the Otay Ranch RMP Preserve. The Preserve Edge Plan addresses drainage, toxic substances, lighting, noise, fuel modification, fencing, and invasive species in accordance with Chapter 3 of the Otay Ranch RMP and additional MSCP County Subarea Plan guidelines. The Preserve edge reduces development within PV1, PV2, and PV3 and adjacent to the Otay Ranch RMP Preserve by 34.6 acres.

   In addition, development would be prohibited in 20.1 acres of areas currently designated in the Otay Ranch GDP/SRP and County General Plan as low residential for development in PV2, and PV3, which would instead be categorized as Conserved Open Space, which would be protected under a Biological Open Space Easement. The 20.1 acres of Conserved Open Space is composed of approximately 6.1 acres located along the eastern edge of PV2 and approximately 14.0 acres within the southern portion of PV3. The 6.1 acres of Conserved Open Space along the eastern edge of PV2 is immediately adjacent to proposed development. Providing an additional 6.1 acres of Conserved Open Space along

the entire development edge would pull development away from designated Preserve and add to the adjacent open space habitat blocks. Since the 6.1 acres of PV2 is adjacent to development, fragmentation of large blocks of habitat would not occur. Providing 14 acres of Conserved Open Space within the southern portion of PV3 eliminates a finger of development south adjacent to the Otay Ranch RMP Preserve and Cornerstone Lands and reduces the development/Preserve interface edge by 1,400 feet. The Proposed Project relocates the existing Proctor Valley Road, an approved MSCP County Subarea Plan mobility element facility, onto PV3 to avoid potential impacts to vernal pools and fairy shrimp areas within the City of San Diego MSCP Cornerstone Lands, further reducing the footprint for residential development and edge effects.

The Conserved Open Space areas, the 100-foot buffer in the Preserve Edge Plan, and realignment of Proctor Valley Road further ensure preservation of the large blocks of habitat already set aside in the Otay Ranch RMP Preserve and other MSCP Preserve lands adjacent to PV1, PV2, and PV3.

Findings: Within PV2 and PV3, development would not occur within 20.1 acres that are adjacent to the significant blocks of habitat in the existing Otay Ranch RMP Preserve. These 20.1 acres were previously designated for development in the Otay Ranch GDP/SRP and County General Plan; however, they are now proposed to be protected from development as Conserved Open Space with a biological open space easement and, as such, would reduce the Preserve/development interface and contribute to large adjacent blocks of habitat. PV1, PV2, and PV3 would include a 100-foot buffer along the Otay Ranch RMP Preserve, as required in the Preserve Edge Plan to assist in regulating access, non-native predators, non-native species, illumination, drain water, and urban runoff. In addition, the alignment of Proctor Valley Road has been shifted onto PV3. These actions would reduce edge effects along the Preserve/development interface and contribute to the preservation of additional lands adjacent to existing Preserve lands. As noted previously, the Otay Ranch Preserve is a component of the larger MSCP Preserve, which interconnects to other open space blocks under agency ownerships. Thus, the proposed development of PV1, PV2, and PV3 would be consistent with this criterion.

5. ***Provide incentives for development in the least sensitive habitat areas.***

Discussion Specific to PV1, PV2, and PV3: As shown in Section 2.2.1, the majority of PV1, PV2, and PV3 contain sensitive habitat areas, with the exception of 4.2 acres of disturbed habitat and 0.1 acre of existing development. To reduce impacts to sensitive habitats, areas of Conserved Open Space are proposed for PV2 and PV3, which reduce the Development Footprint, as designated under the GDP/SRP, by 20.1 acres. Of the 20.1 acres of Conserved Open Space, 18.2 acres is mapped as coastal sage scrub, which is a

Tier II vegetation community under the BMO, and 1.9 acres is mapped as chamise chaparral, which is a Tier III vegetation community. The 4.3 acres of disturbed habitat/development would be included within the proposed Development Footprint. In addition, the reduction in development in PV3 would result in preservation of a location of a coastal California gnatcatcher pair and additional habitat for the pair.

Discussion in the Context of the Otay Ranch RMP Preserve: As noted previously, the Development Footprint and Otay Ranch RMP Preserve boundary for the Proposed Project were designated in the Otay Ranch GDP/SRP and Otay Ranch PEIR after extensive analysis and consideration of the on-site habitat values, wildlife corridors, topography, and other existing constraints. The planning efforts were established to ensure that development occurred in habitat areas that were deemed to be lower priority than those placed in the 11,375-acre Otay Ranch RMP Preserve. The Development Footprint for the Proposed Project, which includes PV1, PV2, and PV3, conforms to the originally designated Otay Ranch GDP/SRP and Otay Ranch RMP Preserve boundary.

Findings: As described previously, the incentives to develop in the least-sensitive areas of Otay Ranch were provided through designation of the Development Footprint and Otay Ranch RMP Preserve boundary in the Otay Ranch GDP/SRP. PV1, PV2, and PV3 were previously designated as developable areas within the Otay Ranch GDP/SPR after extensive consideration of the on-site habitat values, wildlife corridors, topography, and other existing constraints within the Proposed Project, as well as the entire Otay Ranch overall. Thus, development of PV1, PV2, and PV3 would be consistent with the incentives to develop in the least-sensitive areas within Otay Ranch. In addition, the impacts to sensitive habitat would be further reduced compared to the previously designated Development Footprint by eliminating development of 20.1 acres within PV2 and PV3. Thus, the proposed development within PV1, PV2, and PV3 would be in conformance with this criterion.

6. ***Minimize impacts to narrow endemic species and avoid impacts to core populations of narrow endemic species.***

   Discussion Specific to PV1, PV2, and PV3: One narrow endemic species, variegated dudleya, has been observed within PV3. No other narrow endemic plant or wildlife species were observed within PV1, PV2, or PV3.

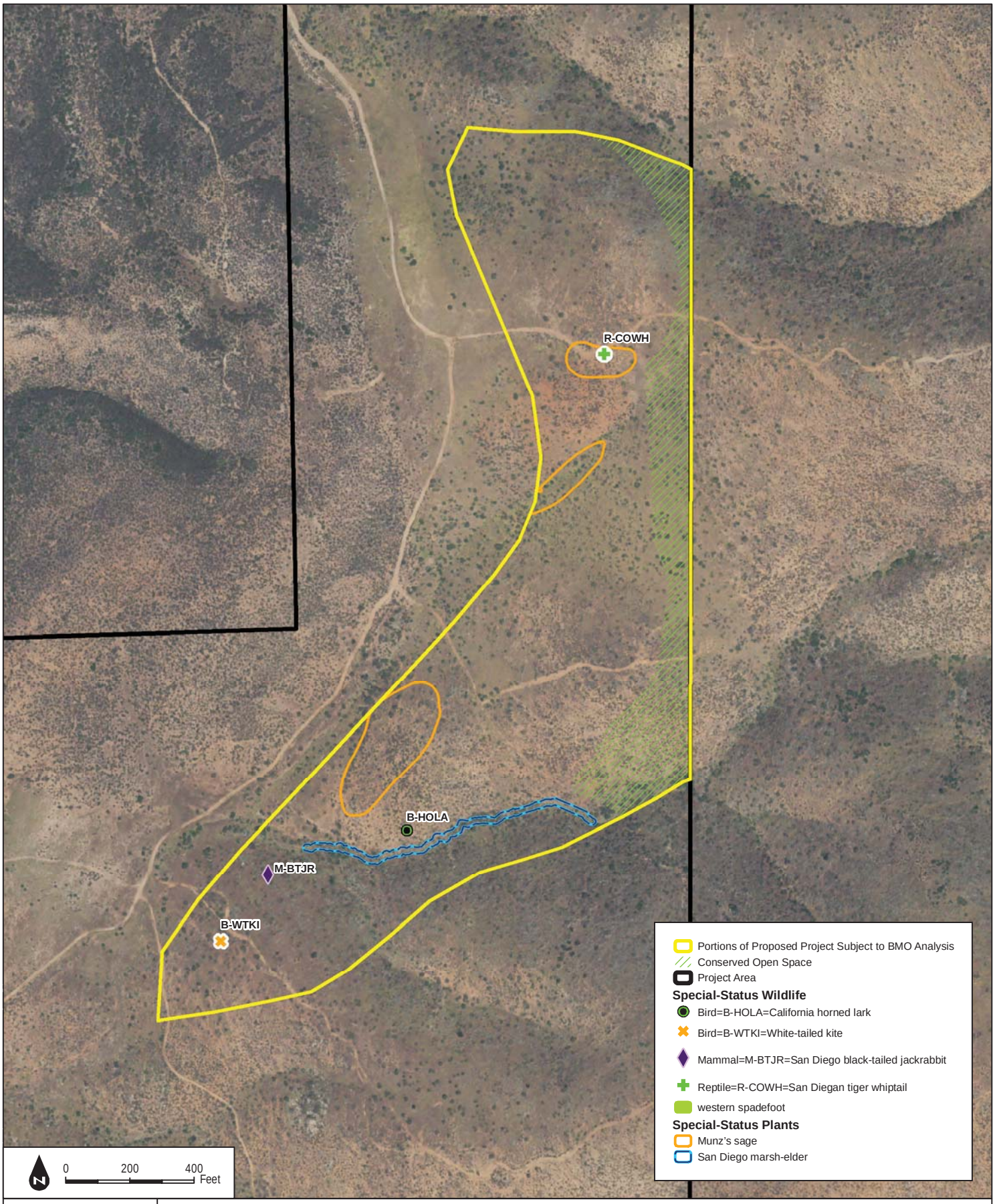
   Variegated dudleya is a narrow endemic species, an MSCP Covered Species, and a County Group A species. Two small populations were observed within PV3: 25 plants were observed within 1 population, and 10 plants were observed in the other (Figures 6a and 6b). All 35 individuals would be impacted by development within PV3. As shown on Figure 6, Sheet 2, of the Otay Ranch RMP, a population of variegated dudleya was

observed within the same general location as those identified in the update surveys conducted for the site[1].

Variegated dudleya is not on the list of critical populations of sensitive plant species within the MSCP County Subarea Plan (Attachment C of the BMO). The two populations located within the PV3 Development Footprint are not considered core populations because they are small populations (10 and 25 plants, respectively) and are not located adjacent to any other populations. In addition, the Otay Ranch RMP did not identify the populations within PV3 as core populations, necessitating a designation as RMP Preserve.

Avoidance of the two small populations of variegated dudleya within PV3 is not feasible for the following reasons. The two populations within PV3 are located approximately 400–500 feet from the Otay Ranch RMP Preserve. A redesign to avoid these two small populations would require the necessary 100-foot Preserve edge, meeting County Fire Department regulations, addressing topographic constraints, and ensuring that the populations were adjacent to the Preserve, which would result in the loss of up to 30 acres of developable land. A redesign to keep the secondary access road for fire safety would result in the loss of approximately 10 acres, but the population would be separated from the Otay Ranch RMP Preserve by a road. As previously discussed, further reduction in the Development Footprint would limit the ability to achieve the density and land use policies set forth in the County's General Plan and the Otay Ranch GDP/SRP. The development could be redesigned to include these populations within the private homeowners' association open space, but carving the populations out of the development and preserving them on their own would isolate the populations from other Preserve lands and expose the variegated dudleya populations to edge effects, which Table 3-5 of the MSCP County Subarea Plan specifically indicates should be minimized.

[1] The Otay Ranch RMP and PEIR determined that the population of variegated dudleya located on PV3, described above, did not warrant conservation.



SOURCE: NAIP 2016; Hunsaker 2017

FIGURE 6a

Special-Status Species Occurrences

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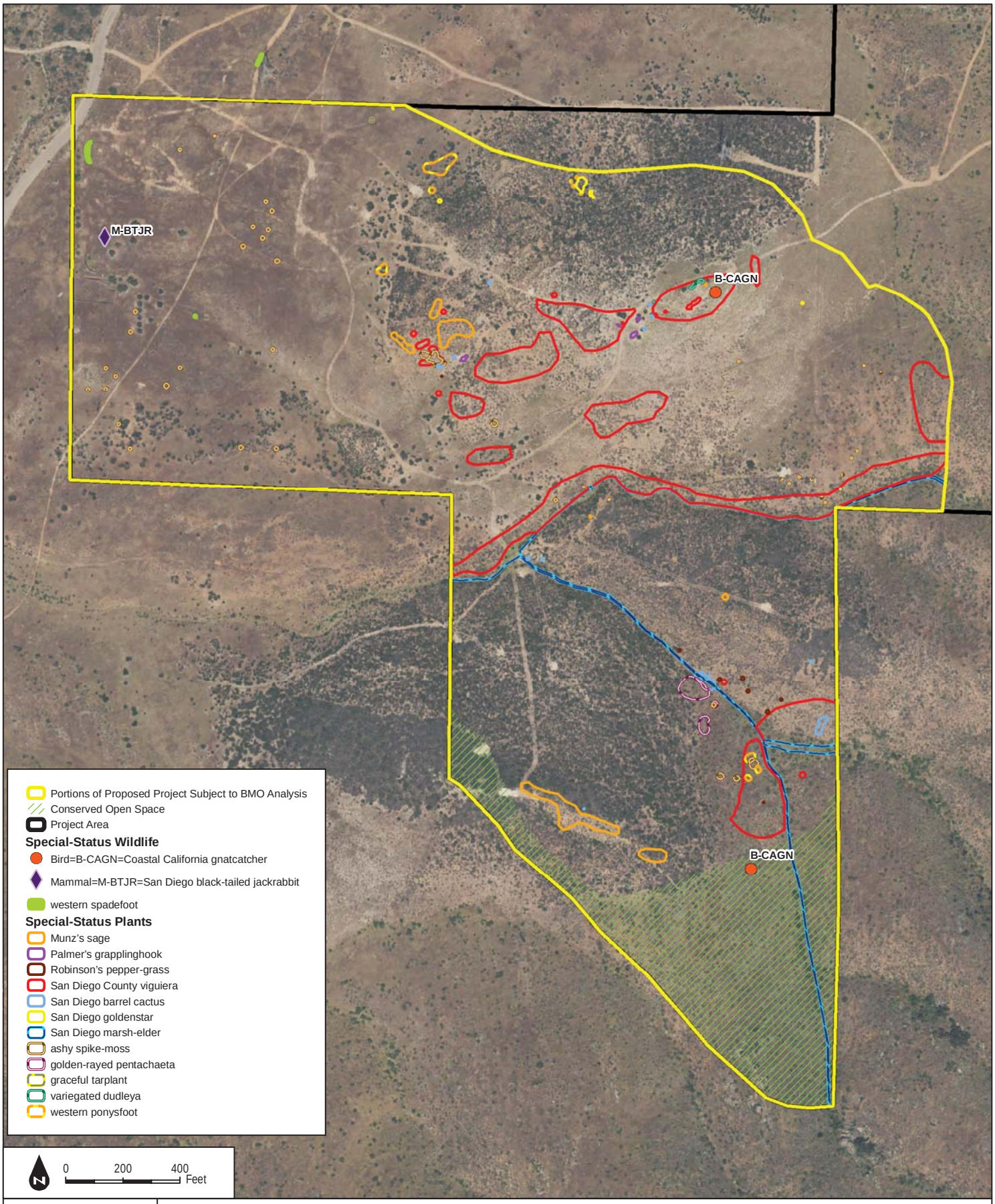

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SOURCE: NAIP 2016; Hunsaker 2017

FIGURE 6b

Special-Status Species Occurrences

Otay Ranch Village 14 and Planning Areas 16/19

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Although the two small populations of variegated dudleya within PV3 are not considered core populations per the Otay Ranch RMP, variegated dudleya is a narrow endemic species; therefore, a mitigation ratio of 3:1 is proposed. Mitigation would consist of translocating the existing populations through soil block salvage and placing them within areas of temporarily impacted Otay Ranch RMP Preserve within the Proposed Project or restoring disturbed areas within the Otay Ranch RMP Preserve and translocating the existing populations to this site. To achieve a 3:1 preservation goal, additional variegated dudleya individuals would be planted at the translocation site. Translocation of the existing populations along with planting of additional individuals would result in no net loss of variegated dudleya populations within PV3 (more information is in Section 2.4.1).

Discussion in the Context of the Otay Ranch RMP: Translocation and additional plantings within the MSCP/Otay Ranch RMP Preserve minimize impacts to this narrow endemic species. The Otay Ranch RMP states that variegated dudleya populations are either widespread throughout Otay Ranch or represented by large, localized populations. At the time of approval, the Otay Ranch RMP Preserve was anticipated to preserve approximately 75% of this species' on-site distribution within Otay Ranch, and the population observed within PV3 was not included within the Preserve boundary. Table 3-5 of the MSCP Plan states, "This species will be covered by the MSCP because 56% of major populations and 75% of known localities will be conserved. This species is on the MSCP [County Subarea Plan]'s list of narrow endemics, and therefore participating jurisdictions must specify in their subarea plans additional conservation measures for the species."

Findings: One narrow endemic species, variegated dudleya, was observed within PV3 during the original surveys conducted in support of the Otay Ranch RMP and the updated surveys conducted for the Proposed Project. No other narrow endemic plant or wildlife species were observed within PV1, PV2, or PV3. The two small populations (10 and 25 plants, respectively) of variegated dudleya within the PV3 Development Footprint do not represent core populations. Avoidance of variegated dudleya within PV3 is not feasible due to the reasons discussed previously. Impacts to variegated dudleya within PV3 would be mitigated at a 3:1 ratio through both translocation and additional plantings, resulting in no net loss of the population and minimization of impacts. Thus, the proposed development of PV1, PV2, and PV3 would be consistent with this criterion.

7. ***Preserve the biological integrity of linkages between BRCAs.***

Discussion Specific to PV1, PV2, and PV3: The linkages identified in the MSCP Plan are based on the *Baldwin Otay Ranch Wildlife Corridors Studies Report* (Wildlife Corridors Studies Report) (Ogden 1992). The wildlife corridor study identified two BRCA overlapping the Project Area. There are no identified linkages within or surrounding PV1, PV2, and PV3. PV1, PV2, and PV3 and the immediately surrounding areas are currently undeveloped, with

the exception of the adjacent existing Proctor Valley Road, which means that wildlife can move freely throughout the landscape. The wildlife corridor study identified specific local and regional corridors, which are not included in the boundaries of PV1, PV2, or PV3, used by wildlife. While wildlife may currently move throughout PV1, PV2, and PV3, these three parcels are not considered habitat linkages. Additionally, the MSCP Plan provides designated BRCA and linkages, which are appropriate for this analysis, on Figure 2-2.

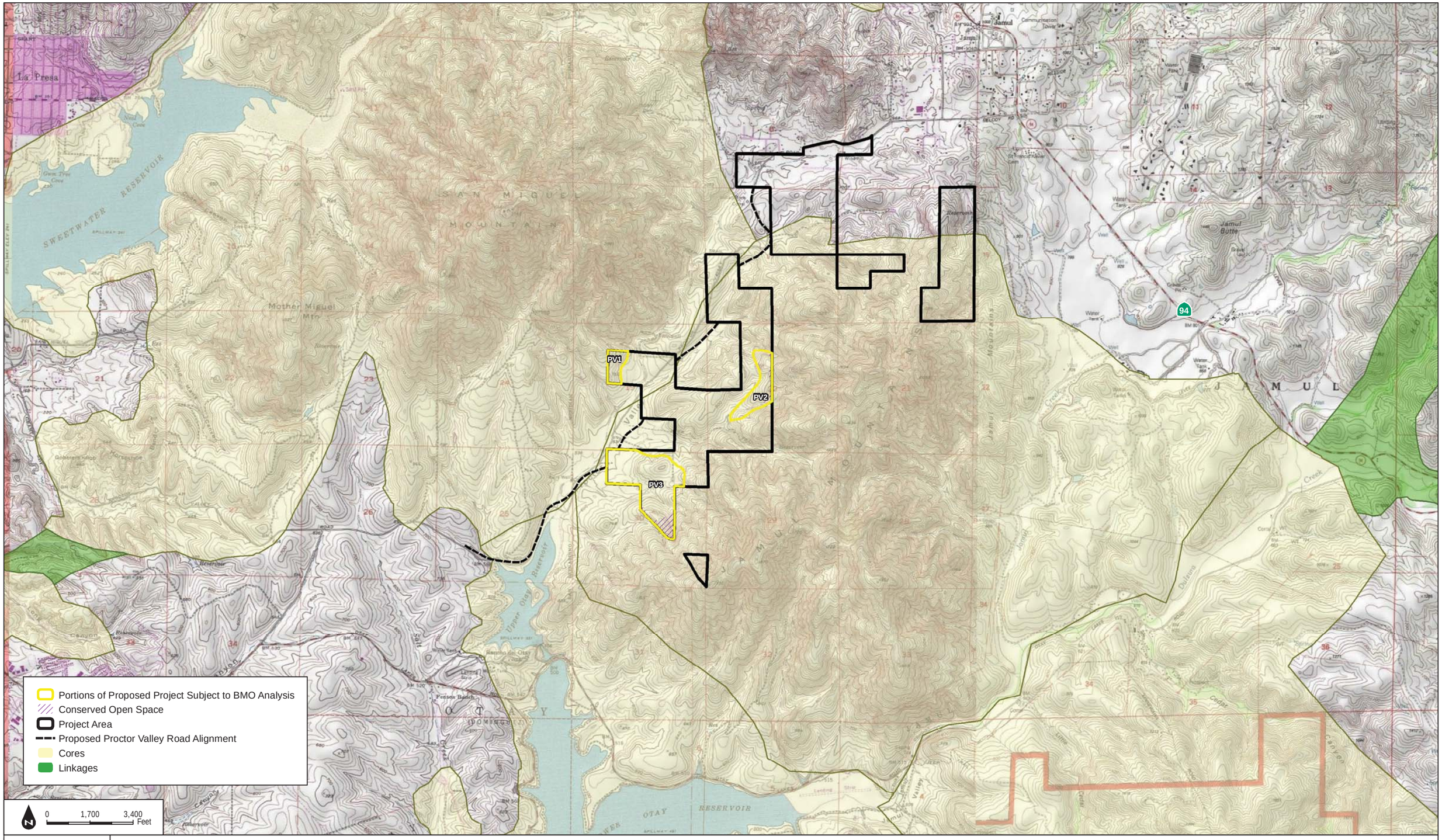
Because PV1, PV2, and PV3 would be consistent with the originally designated Otay Ranch GDP/SRP and Otay Ranch RMP Preserve boundaries, development of these three areas would not impact identified habitat linkages.

Discussion in the Context of the Otay Ranch RMP: The wildlife corridor study identified specific local and regional corridors used by wildlife that would be maintained in the Otay Ranch RMP Preserve. There are no linkages within or surrounding the Village 14 and Planning Area 16/19 Project Area as identified on Figure 2-2 of the MSCP Plan. The designated Otay Ranch RMP Preserve areas adjacent to and surrounding PV1, PV2, and PV3 provide for wildlife corridors and movement to those linkages but are not identified linkages in the MSCP Plan.

Findings: As shown on Figure 7, Biological Resource Core Area, PV1, PV2, and PV3 do not contribute directly to the defined linkages as identified in the MSCP Plan. Thus, the proposed development on these three parcels would not impede existing linkages or otherwise compromise their functionality.

8. ***Achieve the conservation goals for Covered Species and habitats.***

   A total of three MSCP Covered plant species have been observed within PV2 and PV3: San Diego goldenstar, variegated dudleya, and San Diego barrel cactus. Additionally, one MSCP Covered wildlife species, coastal California gnatcatcher, has been observed within PV1, PV2, and PV3, and nine additional MSCP species have a high potential to occur (Table 4). The following text discusses these species and how PV1, PV2, and PV3 achieve conservation goals for Covered Species and their habitats. The conservation goals for Covered Species are presented in Table 3-5 of the MSCP Plan.



SOURCE: Hunsaker 2017; SANGIS 2016

FIGURE 7

Biological Resource Core Area

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Otay Ranch Village 14 and Planning Areas 16/19

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Discussion of Covered Plant Species Specific to PV1, PV2, and PV3: Development within PV3 would result in direct impacts to three Covered plant species: San Diego goldenstar, variegated dudleya, and San Diego barrel cactus. Development of PV1 would result in impacts to designated critical habitat for spreading navarretia (*Navarretia fossalis*) (Table 3), which is also a Covered Species. However, no individual spreading navarretia plants were observed within PV1, PV2, or PV3; therefore, there are no impacts to this species, mitigation is not required, and this species is not discussed further. There are no Covered plant species present within PV1 or PV2.

San Diego Goldenstar: A total of 17 San Diego goldenstar plants would be impacted in PV3. The conservation goal for this species as described in Table 3-5 of the MSCP Plan states that 8 of 11 major populations of San Diego goldenstar (73% of major populations) and 38% of grasslands within the MSCP Plan area would be conserved. This species is found in large quantities throughout the Project Area (approximately 4,952 individuals). The plant populations within PV3 would not be considered major populations since they are small and separate from the larger populations. In addition, these populations are not designated as major populations within the MSCP Area (SANDAG 2018). While PV1, PV2, and PV3 do not provide specifically for the preservation of San Diego goldenstar, the Proposed Project's contribution to the Otay Ranch RMP Preserve through on-site conveyance would preserve 2,902 individuals of the species, and an additional 688 individuals would be preserved through Conserved Open Space. Another 577 individuals within non-graded LDA would not be impacted by the Proposed Project (Table 3). However, to ensure no net loss of these populations, mitigation in the form of translocation of the existing populations, along with additional plantings, would be provided within Conserved Open Space in PV3. Therefore, the Proposed Project contributes to the overall conservation goals outlined for San Diego goldenstar.

Variegated Dudleya: Two populations (25 and 10 plants, respectively) of variegated dudleya would be impacted in PV3. Table 3-5 of the MSCP Plan states that 56% of major populations and 75% of known localities of variegated dudleya within the MSCP Plan area would be conserved. These populations are not designated as major populations within the MSCP Area (SANDAG 2018). Although PV1, PV2, and PV3 do not contribute to the overall conservation goals of the MSCP Plan by preserving additional populations of this species, to ensure that there are no net losses of this narrow endemic species, mitigation in the form of translocation of the existing populations, along with additional plantings, would be provided within Conserved Open Space in PV3. Therefore, with the proposed mitigation, development within PV3 would contribute to the overall conservation goals for variegated dudleya.

San Diego Barrel Cactus: A total of 36 San Diego barrel cactus individuals would be impacted in PV3. Table 3-5 of the MSCP Plan states that 81% of major populations within the

MSCP Plan area would be conserved. Table 3-5 also lists specific percentages for subareas; however, Otay Ranch is not listed as a subarea. These populations are not designated as major populations within the MSCP Plan (SANDAG 2018). While PV1, PV2, and PV3 do not provide specifically for the preservation of San Diego barrel cactus, the Proposed Project's contribution to the Otay Ranch RMP Preserve through on-site conveyance would preserve two individuals. To ensure that there is no net losses of this species, mitigation in the form of translocation of the existing populations, along with additional plantings, would be provided. Therefore, with the proposed mitigation, development within PV3 would contribute to the overall conservation goals for San Diego barrel cactus.

Discussion of Covered Plant Species in the Context of the Otay Ranch RMP: The Otay Ranch RMP outlines objectives and policies for the preservation of sensitive plant species within Otay Ranch (Policies 2.6 and 2.7, City of Chula Vista and County of San Diego 1996). Preservation goals for select sensitive plant species are identified and outlined within these policies, which apply Ranch-wide (City of Chula Vista and County of San Diego 1996). The percentage of populations retained within the Otay Ranch RMP Preserve includes the population estimates at the time of Otay Ranch RMP approval. Because the Proposed Project, which includes PV1, PV2, and PV3, conforms to the original Otay Ranch GDP/SRP boundary, any populations recorded within the portions of Otay Ranch RMP Preserve within the Project Area would contribute to attainment of the Ranch-wide Otay Ranch RMP conservation goals. Ranch-wide, the Otay Ranch RMP requires preservation of a minimum of 75% of the Otay Ranch populations of San Diego barrel cactus, 75% of the Otay Ranch populations of variegated dudleya, and 54% of the Otay Ranch populations of San Diego goldenstar. Pursuant to the Otay Ranch RMP, the Proposed Project, which includes PV1, PV2, and PV3, is not required to meet the Ranch-wide standard. Rather, the Otay Ranch RMP Preserve Conveyance Obligation satisfies the conservation goals. In addition, impacts to populations of variegated dudleya and San Diego barrel cactus were identified in the Otay Ranch RMP, which is incorporated to the MSCP Plan. As shown on Figure 6, Sheet 2, of the Otay Ranch RMP, populations of these species observed within the same general location as those identified in the update surveys conducted for the site. Therefore, it can be assumed that the conservation goals outlined in the Otay Ranch RMP anticipated impacts to these species as a part of the Proposed Project and specifically development of PV3.

Discussion of Covered Wildlife Species Specific to PV1, PV2, and PV3: PV1, PV2, PV3, or the Proposed Project as a whole do not contain key regional populations of Covered wildlife species. However, there is a high potential for some Covered wildlife species to occur on PV1, PV2, and PV3 (Table 4), and one Covered Species, coastal California gnatcatcher, was observed in PV3 (Figure 6).

Table 3
Summary of Direct Impacts to and Mitigation for Covered Plant Species
Within the Proposed Project (Including PV2 and PV3)

Species	Regulatory Status: Federal/State/ County/CRPR	Approximate Number of Individuals within Project Area	Approximate Number of Individuals Impacted (Project Area[a]/PV2 and PV3[b])	Approximate Number of Non-Impacted Individuals				Mitigation Requirements
				Non-Graded LDA	*Conserved Open Space*	*Designated Preserve*	*Non-graded Total*	
San Diego goldenstar (*Bloomeria clevelandii)*	None/None/Covered, Group A/1B.1	4,952	786, 17 of which are in PV3	577	688	2,902	4,167	None. Mitigated through preservation of populations within the Otay Ranch RMP Preserve.
Variegated dudleya (*Dudleya variegata)*	None/None/Covered, Group A, Narrow Endemic/ 1B.2	35	35, all of which are in PV3	—	—	—	—	3:1 mitigation to impact ratio. Mitigation consists of translocation and additional plantings.
Spreading navarretia (*Navarretia fossalis)*	FT/None/Covered, Group A/1B.1	Critical habitat	11.4 acres, 4 acres of which are in PV2	—	—	17.0	17.02	None. Species not observed and not expected to occur.
San Diego barrel cactus (*Ferocactus viridescens)*	None/None/Covered, Group B/2B.1	50	48, 36 of which are in PV3	—	—	2	2	2:1 mitigation to impact ratio. Mitigation consists of translocation and additional plantings.

CRPR = California Rare Plant Rank; LDA = Limited Development Area; RMP = Resource Management Plan
Federal Designations
FT: federally threatened
County Designations
Covered: Covered Species under the MSCP Plan
Group A: Plants rare, threatened or endangered in California and elsewhere

Narrow Endemic: As defined in the Biological Mitigation Ordinance, those plant species listed on Attachment E of document No. 0769999 on file with the Clerk of the Board.
Group B: Plants rare, threatened or endangered in California but more common elsewhere
CRPR
1B: Plants rare, threatened, or endangered in California and elsewhere
2B: Plants rare, threatened, or endangered in California but more common elsewhere
Threat Ranks
0.1: Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
0.2: Moderately threatened in California (20%–80% of occurrences threatened/moderate degree and immediacy of threat)

[a] Project Area impacts include impacts within designated development and Preserve, as well as portions of impacts within the LDA.
[b] Impacts to rare plants include impacts within the permanent and temporary footprints.

Table 4
Permanent Impacts to MSCP Covered Wildlife Species Present within the Development Footprint of the Proposed Project (Which Includes PV1, PV2, and PV3) or with High Potential to Occur

Species Common Name (Scientific Name)	Regulatory Status: Federal/State/ MSCP/County Group	Basis for Impact Evaluation	Total Project Area Development Footprint Impacts[a] (acres)	Non-impacted Project Area		Additional Otay Ranch RMP Preserve Conveyance[b] (acres)
				Conserved Open Space and Non-Graded LDA (acres)	*Otay Ranch RMP Preserve (acres)*	
orangethroat whiptail (*Aspidoscelis hyperythra*)	USFWS: None CDFW: SSC MSCP: Covered County: Group 2	High potential to occur. There are 1,239.0 acres of modeled habitat within the Project Area. Modeled habitat for this species includes chamise chaparral, disturbed chamise chaparral, coastal sage scrub, disturbed coastal sage scrub, disturbed habitat, eucalyptus woodland, mulefat scrub, oak riparian forest, and southern mixed chaparral.	724.8 (174.5 in PV1, PV2, and PV3)	144.7~~145.7~~ (20.1 of Conserved Open Space in PV2 and PV3)	388.0	350.1
Blainville's horned lizard (*Phrynosoma blainvillii*)	USFWS: None CDFW: SSC MSCP: Covered County: Group 2	Observed within the Otay Ranch Village 14 Development Footprint and Preserve within Planning Area 16 but not specifically within PV1, PV2, or PV3. There are 1,328.7 acres of modeled habitat within the Project Area. Modeled habitat for this species includes chamise chaparral, disturbed chamise chaparral, coastal sage scrub, disturbed coastal	788.6 (175.3 in PV1, PV2, and PV3)	144.3~~145.3~~ (20.1 of Conserved Open Space in PV2 and PV3)	415.7	350.1

Table 4
Permanent Impacts to MSCP Covered Wildlife Species Present within the Development Footprint of the Proposed Project (Which Includes PV1, PV2, and PV3) or with High Potential to Occur

Species Common Name (Scientific Name)	Regulatory Status: Federal/State/ MSCP/County Group	Basis for Impact Evaluation	Total Project Area Development Footprint Impacts[a] (acres)	Non-impacted Project Area		Additional Otay Ranch RMP Preserve Conveyance[b] (acres)
				Conserved Open Space and Non-Graded LDA (acres)	*Otay Ranch RMP Preserve (acres)*	
		sage scrub, disturbed habitat, eucalyptus woodland, mulefat scrub, oak riparian forest, non-native grassland, and southern mixed chaparral.				
Cooper's hawk (*Accipiter cooperii*) (nesting)	USFWS: None CDFW: WL MSCP: Covered County: Group 1	Observed within the Project Area but not specifically within PV1, PV2, or PV3. There is 3.6 acres of modeled nesting habitat and 1,336.5 acres of modeled foraging habitat within the Project Area. Nesting modeled habitat for this species includes eucalyptus woodland and oak riparian forest. Foraging modeled habitat for this species includes chamise chaparral, cismontane alkali marsh, coastal sage scrub, disturbed chamise chaparral, disturbed coastal sage scrub, eucalyptus woodland, mulefat scrub, oak riparian forest, non-native grassland, and southern mixed chaparral.	0.2 nesting; 789.7 foraging (0 nesting; 175.3 foraging in PV1, PV2, and PV3)	0 nesting; 144.4~~145.4~~ foraging (20.1 of Conserved Open Space in PV2 and PV3)	3.5 nesting; 422.6 foraging	350.1
Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)	USFWS: None CDFW: WL MSCP: Covered County: Group 1	Observed within the Project Area but not specifically within PV1, PV2, or PV3. There are 1,325.1 acres of modeled nesting/foraging habitat within the Project Area. Nesting and foraging modeled habitat for this species includes chamise chaparral, disturbed chamise chaparral, coastal sage scrub, disturbed coastal sage scrub, mulefat scrub, non-native grassland, and southern mixed chaparral.	788.4 (175.3 in PV1, PV2, and PV3)	144.3~~145.3~~ (20.1 of Conserved Open Space in PV2 and PV3)	412.2	350.1

Table 4
Permanent Impacts to MSCP Covered Wildlife Species Present within the Development Footprint of the Proposed Project (Which Includes PV1, PV2, and PV3) or with High Potential to Occur

Species Common Name (Scientific Name)	Regulatory Status: Federal/State/ MSCP/County Group	Basis for Impact Evaluation	Total Project Area Development Footprint Impacts[a] (acres)	Non-impacted Project Area		Additional Otay Ranch RMP Preserve Conveyance[b] (acres)
				Conserved Open Space and Non-Graded LDA (acres)	*Otay Ranch RMP Preserve (acres)*	
golden eagle (*Aquila chrysaetos*) (nesting and wintering)	USFWS: BCC CDFW: FP, WL MSCP: Covered County: Group 1	Observed within the Project Area but not specifically within PV1, PV2, or PV3. There are 1,325.5 acres of modeled foraging habitat within the Project Area. Foraging modeled habitat for this species includes coastal sage scrub (including disturbed and Baccharis dominated), chamise chaparral (including disturbed), southern mixed chaparral, and non-native grassland. These vegetation communities are based on the MSCP definition of foraging habitat and the crosswalk with the Project Area specific data.	789.4 foraging (175.3 in PV1, PV2, and PV3)	144.3~~145.3~~ foraging (20.1 of Conserved Open Space in PV2 and PV3)	411.5 foraging	350.1
burrowing owl (*Athene cunicularia*) (burrow sites and some wintering sites)	USFWS: BCC CDFW: SSC MSCP: Covered County: Group 1	Direct observations of these species did not occur during focused surveys. Incidental sighting of white wash, feathers, and pellets were observed at one specific location in the central portion of the Project Area during rare plant surveys (not within PV1, PV2, or PV3). There are 115.3 acres of burrowing owl survey areas mapped within the Project Area based on the burrowing owl habitat assessment.	71.8 (0 in PV1, PV2, and PV3)	0~~0.4~~ (0 in PV1, PV2, and PV3)	29.6	350.1
coastal California gnatcatcher (*Polioptila californica californica*)	USFWS: FT CDFW: SSC MSCP: Covered County: Group 1	Observed within the Project Area, including PV3. There are 1,113.7 acres of modeled nesting/foraging habitat within the Project Area. Nesting and foraging modeled habitat for this species includes chamise chaparral, disturbed chamise chaparral, coastal sage scrub, disturbed coastal sage scrub, mulefat scrub,	691.8 (174.5 in PV1, PV2, and PV3)	115.2~~116.2~~ (20.1 of Conserved Open Space in PV2 and PV3)	325.0	350.1

Table 4
Permanent Impacts to MSCP Covered Wildlife Species Present within the Development Footprint of the Proposed Project (Which Includes PV1, PV2, and PV3) or with High Potential to Occur

Species Common Name (Scientific Name)	Regulatory Status: Federal/State/ MSCP/County Group	Basis for Impact Evaluation	Total Project Area Development Footprint Impacts[a] (acres)	Non-impacted Project Area		Additional Otay Ranch RMP Preserve Conveyance[b] (acres)
				Conserved Open Space and Non-Graded LDA (acres)	*Otay Ranch RMP Preserve (acres)*	
		and southern mixed chaparral.				
western bluebird (*Sialia mexicana*)	USFWS: None CDFW: None MSCP: Covered County: Group 2	Observed within the Project Area but not within PV1, PV2, or PV3. There are 943.4 acres of modeled foraging habitat within the Project Area. Nesting and foraging modeled habitat for this species includes coastal sage scrub, disturbed coastal sage scrub, disturbed habitat, eucalyptus woodland, mulefat scrub, oak riparian forest, and non-native grassland.	543.1 (110 in PV1, PV2, and PV3)	105.6~~106.6~~ (20.1 of Conserved Open Space in PV2 and PV3)	307.8	350.1
mule deer (*Odocoileus hemionus*)	USFWS: None CDFW: None MSCP: Covered County: Group 2	Observed within the Project Area. There are 1,267.1 acres of modeled habitat within the Project Area. Modeled habitat for this species includes chamise chaparral, cismontane alkali marsh, coastal sage scrub, developed, disturbed chamise chaparral, disturbed coastal sage scrub, disturbed habitat, eucalyptus woodland, mulefat scrub, oak riparian forest, non-native grassland, and southern mixed chaparral.	801.0 (175.3 in PV1, PV2, and PV3)	116.4~~117.4~~ (20.1 of Conserved Open Space in PV2 and PV3)	370.6	350.1
Cougar (*Puma concolor*)	USFWS: None CDFW: None MSCP: Covered County: Group 2	Observed within the Project Area (indirect observation of scat) but not within PV1, PV2, or PV3. There are 1,043.4 acres of modeled habitat within the Project Area. Modeled habitat for this species includes chamise chaparral, disturbed chamise chaparral, coastal sage scrub, disturbed coastal sage scrub, disturbed habitat, eucalyptus woodland,	558.3 (175.3 in PV1, PV2, and PV3)	134.3~~135.3~~ (20.1 of Conserved Open Space in PV2 and PV3)	363.8	350.1

Table 4
Permanent Impacts to MSCP Covered Wildlife Species Present within the Development Footprint of the Proposed Project (Which Includes PV1, PV2, and PV3) or with High Potential to Occur

Species Common Name (Scientific Name)	Regulatory Status: Federal/State/ MSCP/County Group	Basis for Impact Evaluation	Total Project Area Development Footprint Impacts[a] (acres)	Non-impacted Project Area		Additional Otay Ranch RMP Preserve Conveyance[b] (acres)
				Conserved Open Space and Non-Graded LDA (acres)	*Otay Ranch RMP Preserve (acres)*	
		mulefat scrub, oak riparian forest, non-native grassland, and southern mixed chaparral.				
American badger (*Taxidea taxus*)	USFWS: None CDFW: SSC MSCP: Covered County: Group 2	Observed within the Project Area by sign only but not within PV1, PV2, or PV3. There are 940.6 acres of modeled habitat within the Project Area. Modeled habitat for this species includes coastal sage scrub, chamise, disturbed chamise chaparral, disturbed coastal sage scrub, disturbed habitat, mulefat scrub, and non-native grassland.	543.7 (175.3 in PV1, PV2, and PV3)	105.6~~106.6~~ (20.1 of Conserved Open Space in PV2 and PV3)	304.3	350.1

Notes: CDFW = California Department of Fish and Wildlife; LDA = Limited Development Area; MSCP = Multiple Species Conservation Program; RMP = Resource Management Plan; USFWS = U.S. Fish and Wildlife Service

[a] Acreages in parentheses are impacts associated with PV1, PV2, and PV3.

[b] The 350.1 acres of additional Otay Ranch RMP Preserve conveyance is not guaranteed to provide habitat for these species, particularly for burrowing owl, which has more specific requirements than the presence of habitat.

Status Legend
Federal
BCC: Bird of Conservation Concern
FT: Federally Threatened
State
SSC: Species of Special Concern
WL: Watch List
FP: Fully Protected
MSCP
Covered: Covered species under the MSCP Plan
County
Group 1
Group 2

Impacts specifically associated with PV1, PV2, and PV3 are also provided in Table 4. Impacts to covered wildlife species that are known to occur, or those that have a high potential to occur, within the entire Project Area, are also outlined in Table 4. Table 4 also provides data regarding on-site preservation of habitat. Impacts and Preserve acreage for the entire Project Area are included in this analysis to provide the context for the BMO analysis of PV1, PV2, and PV3. Conservation goals, as outlined in Table 3-5 of the MSCP Plan, for each of the covered wildlife species listed in Table 4 were reviewed to ensure that the development of PV1, PV2, and PV3 would not impede the conservation goals.

Orangethroat Whiptail: Orangethroat whiptail (*Aspidoscelis hyperythra*) was not observed within PV1, PV2, or PV3; however, there is high potential for this species to occur. A total of 174.5 acres of modeled habitat for orangethroat whiptail would be impacted by development in PV1, PV2, and PV3, and 20.1 acres of modeled habitat would be preserved as Conserved Open Space. The conservation goals within the MSCP Plan outline preservation of known locations and potential habitat. Because PV1, PV2, and PV3 do not encroach into the 11,375-acre hardline Otay Ranch RMP Preserve (which is a component of the MSCP Preserve), and the Proposed Project would meet its conveyance requirements, development of these three parcels would not impeded the conservation goals for this species as outlined in Table 3-5 of the MSCP Plan.

Blainville's Horned Lizard: Blainville's horned lizard (*Phrynosoma blainvillii*) has a high potential to occur in PV1, PV2, and PV3. A total of 175.3 acres of modeled habitat for Blainville's horned lizard would be impacted by development in PV1, PV2, and PV3, and 20.1 acres of modeled habitat would be preserved as Conserved Open Space. The conservation goals within the MSCP Plan outline preservation of known locations and potential habitat. Because PV1, PV2, and PV3 do not encroach into the 11,375-acre hardline Otay Ranch RMP Preserve (which is a component of the MSCP Preserve), and the Proposed Project would meet its conveyance requirements, development of these three parcels would not impeded the conservation goals for this species as outlined in Table 3-5 of the MSCP Plan.

Cooper's Hawk: A Cooper's hawk (*Accipiter cooperii*) was observed flying overhead during biological surveys in 2014, but since much of the Project Area is likely used by this species, the observations were not mapped. This species has a high potential to forage within PV1, PV2, and PV3; however, these areas do not contain suitable nesting habitat. A total of 175.3 acres of modeled habitat for Copper's hawk would be impacted by development in PV1, PV2, and PV3, and 20.1 acres of modeled habitat would be preserved as Conserved Open Space. The conservation goals within the MSCP Plan outline preservation of known locations and potential habitat (both foraging and nesting). Because

PV1, PV2, and PV3 do not encroach into the 11,375-acre hardline Otay Ranch RMP Preserve (which is a component of the MSCP Preserve), and the Proposed Project would meet its conveyance requirements, development of these three parcels would not impeded the conservation goals for this species as outlined in Table 3-5 of the MSCP Plan.

Southern California Rufous-Crowned Sparrow: Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) was not observed in PV1, PV2, or PV3. Based on observations in coastal sage scrub habitat elsewhere in the Proposed Project, there is a high potential for this species to occur in these parcels. A total of 175.3 acres of modeled habitat for this species would be impacted by development in PV1, PV2, and PV3. A total of 20.1 acres of modeled habitat would be preserved as Conserved Open Space. The conservation goals within the MSCP Plan outline preservation of known locations and potential habitat. Because PV1, PV2, and PV3 do not encroach into the 11,375-acre hardline Otay Ranch RMP Preserve (which is a component of the MSCP Preserve), and the Proposed Project would meet its conveyance requirements, development of these three parcels would not impeded the conservation goals for this species as outlined in Table 3-5 of the MSCP Plan.

Golden Eagle: Golden eagle (*Aquila chrysaetos*) was not observed within PV1, PV2, or PV3. There is a high potential for this species to forage in these parcels. A total of 175.3 acres of modeled foraging habitat for this species would be impacted by development in PV1, PV2, and PV3. A total of 20.1 acres of modeled habitat would be preserved as Conserved Open Space within PV2 and PV3.

Table 3-5 of the MSCP Plan and the County's Section 10 permit require that approved development avoid lethal take of any golden eagle and human disturbance of any active golden eagle nest. In addition, approved development projects must maintain a 4,000-foot disturbance avoidance buffer around any active golden eagle nest within Preserve lands. PV1, PV2, and PV3 are not within 4,000 feet of an active golden eagle nest. Although the historical known golden eagle nest locations and the artificial nest locations are located within 4,000 feet of PV1,[2] these features are no longer occupied. Since the Proposed Project, which includes PV1, PV2, and PV3, remains within the designated Otay Ranch RMP Preserve and Development Footprint, development of these parcels would not result in loss of golden eagle foraging habitat beyond that described in Table 3-5 of the MSCP

[2] Coarse measurements based on best-guess approximations of these historical nest locations places them within 3,065–3,541 feet from the nearest Project impact boundary (i.e., the nearest point where Project development would result in at least temporary human disturbance) (H.T. Harvey & Associates 2017).

Plan. A full analysis regarding golden eagle habitat is provided in Appendix C of the Biological Resources Technical Report prepared for the Proposed Project. Importantly, several of the Take Authorized Areas (identified for future development in the MSCP Plan and MSCP County Subarea Plan) located within the MSCP County Subarea Plan area have been converted entirely to MSCP Preserve. These areas include Hidden Valley Estates, Las Montanas, Otay Ranch Village 15, and Daley Ranch, and each include suitable golden eagle foraging habitat that was expected to be developed but would now be preserved.

Development of PV1, PV2, and PV3 would not have a significant impact on golden eagle because such development would (1) not cause lethal take of the species, (2) not disturb any active golden eagle nest, and (3) not place human activity within 4,000 feet of any active golden eagle nest located inside the MSCP Preserve. In addition, as discussed previously, the Proposed Project, which includes PV1, PV2, and PV3, would be consistent with the MSCP Plan's assumptions regarding preservation of golden eagle foraging habitat (total preservation of 53% for the MSCP Plan and 54% for the MSCP County Subarea Plan).

Burrowing Owl: In 2014, a habitat assessment and focused surveys for burrowing owl were conducted for the Project Area as required in Table 3-5 of the MSCP Plan. During these surveys, no burrowing owl or sign were observed in PV1, PV2, or PV3. In 2015, burrowing owl sign consisting of white wash, feathers, and pellets were observed at one specific location in the central portion of the Project Area (outside of PV1, PV2, and PV3) during rare plant surveys. Development of PV1, PV2, and PV3 would not result in impacts to mapped burrowing owl habitat. The conservation goals within the MSCP Plan outline preservation of known locations and preservation of both known and potential habitat. Because PV1, PV2, and PV3 do not encroach into the 11,375-acre hardline Otay Ranch RMP Preserve (which is a component of the MSCP Preserve), the Proposed Project would meet its conveyance requirements, and there are no known locations of burrowing owl within the Development Footprint, development of these three parcels would not impeded the conservation goals for this species as outlined in Table 3-5 of the MSCP Plan.

Coastal California Gnatcatcher: Development within PV3 would result in direct impacts to habitat associated with one male coastal California gnatcatcher (Figure 6). This male was observed along the edge of the development and Preserve boundary, and it is likely that the surrounding area of coastal sage scrub within the Otay Ranch RMP Preserve supports this individual. A pair of coastal California gnatcatcher was observed within Conserved Open Space within PV3, but it would not be directly impacted because

it is located in Conserved Open Space and would be protected by a biological open space easement or conveyed to the Otay Ranch RMP Preserve. In addition, 174.5 acres of modeled habitat for this species would be impacted by development in PV1, PV2, and PV3, and 20.1 acres of modeled habitat would be preserved as Conserved Open Space. Conservation provided through implementation and conformance with the Otay Ranch RMP and BMO habitat mitigation requirement would provide mitigation for direct impacts to Covered sensitive species, including coastal California gnatcatcher, to reduce impacts to a less-than-significant level.

The conservation goals within the MSCP County Subarea Plan outline preservation of both known and potential habitat, as well as core areas where the species occurs and known locations. As a condition of coverage, Table 3-5 of the MSCP County Subarea Plan states, "No cleaning of occupied habitat within the cities' MHPAs [Multiple Habitat Planning Areas] and within the County's Biological Resource Core Areas may occur between March 1 and August 15" (County of San Diego 1997). PV3, as part of the Proposed Project, includes mitigation measures that would reduce impacts to any special-status bird species occurring within the development. Those measures include biological monitoring to prevent disturbance outside of the limits of grading, temporary construction fencing, and noise-reduction measures during the nesting season. Specific to coastal California gnatcatcher, no clearing, grading, or grubbing activities may occur within habitat identified by a qualified biologist as being occupied by coastal California gnatcatcher during the nesting season for the species (February 15 to August 15, annually). If construction occurs during the nesting season, a nesting survey for coastal California gnatcatcher shall be conducted prior to the onset of construction. Construction may occur if active breeding territories can be avoided, and construction activities can be managed to limit noise levels in occupied habitat within 500 feet of the Proposed Project, or noise attenuation measures, such as temporary sound walls, would be implemented to reduce noise levels below 60 A-weighted decibels (dBA) equivalent sound level (L_{eq}) or below existing ambient noise levels (whichever is greater).

Development of PV1, PV2, and PV3 would not impeded the conservation goals for coastal California gnatcatcher as outlined in Table 3-5 of the MSCP Plan for the following reasons: (1) PV1, PV2, and PV3 do not encroach into the 11,375-acre hardline Otay Ranch RMP Preserve (which is a component of the MSCP Preserve); (2) the Proposed Project would meet its conveyance and BMO mitigation requirements; (3) one pair would be preserved within Conserved Open Space; and (4) mitigation measures that would reduce impacts to any special-status bird species occurring within the development have been incorporated.

Western Bluebird: Western bluebird (*Sialia mexicana*) was not observed within PV1, PV2, or PV3 during surveys conducted within the Project Area. There is a high potential for this species to occur in these parcels. A total of 110 acres of modeled habitat for this species would be impacted by development in PV1, PV2, and PV3, and 20.1 acres of modeled habitat would be preserved as Conserved Open Space. The conservation goals within the MSCP Plan outline preservation of potential habitat. Because PV1, PV2, and PV3 do not encroach into the 11,375-acre hardline Otay Ranch RMP Preserve (which is a component of the MSCP Preserve), and the Proposed Project would meet its conveyance requirements, development of these three parcels would not impeded the conservation goals for this species as outlined in Table 3-5 of the MSCP Plan.

Mule Deer: Mule deer (*Odocoileus hemionus*) was not observed within PV1, PV2, or PV3 during surveys conducted within the Project Area. There is a high potential for this species to occur in these parcels. A total of 175.3 acres of modeled habitat for this species would be impacted by development in PV1, PV2, and PV3, and 20.1 acres of modeled habitat would be preserved as Conserved Open Space. The conservation goals within the MSCP Plan outline preservation of BRCAs and associated linkages. PV2 and PV3 are located within the Jamul Mountains BRCA (also identified as BRCA 6 in the MSCP Plan), and PV1 is located within the Sweetwater Reservoir/San Miguel Mountain/Sweetwater River BRCA (BRCA 7), both of which are included in the conservation goals. Because PV1, PV2, and PV3 do not encroach into the 11,375-acre hardline Otay Ranch RMP Preserve (which is a component of the MSCP Preserve), and the Proposed Project would meet its conveyance requirements, development of these three parcels do not impeded the conservation goals for this species as outlined in Table 3-5 of the MSCP Plan. In addition, the Proposed Project would include four wildlife crossings outside the boundaries of PV1, PV2, and PV3, which would help ensure that this species can continue to move throughout the BRCAs as associated linkages.

Cougar: Cougar (*Puma concolor*) sign was not observed within PV1, PV2, or PV3 during surveys conducted within the Project Area. There is a high potential for this species to occur in these parcels. A total of 175.3 acres of modeled habitat for this species would be impacted by development in PV1, PV2, and PV3, and 20.1 acres of modeled habitat would be preserved as Conserved Open Space. Similar to mule deer, the conservation goals within the MSCP Plan outline preservation of BRCAs and associated linkages, and BRCAs 6 and 7 are included in the goals for this species. Because PV1, PV2, and PV3 do not encroach into the 11,375-acre hardline Otay Ranch RMP Preserve (which is a component of the MSCP Preserve), and the Proposed Project would meet its conveyance requirements, development of these three parcels would not impeded the

conservation goals for this species as outlined in Table 3-5 of the MSCP Plan. In addition, the Proposed Project would include four wildlife crossings outside the boundaries of PV1, PV2, and PV3, which would help to ensure that this species can continue to move throughout the BRCAs as associated linkages.

American Badger: American badger (*Taxidea taxus*) was not mapped specifically within PV1, PV2, or PV3. There is a high potential for this species to occur. A total of 175.3 acres of modeled habitat for this species would be impacted by development in PV1, PV2, and PV3, and 20.1 acres of modeled habitat would be preserved as Conserved Open Space. The conservation goals within the MSCP Plan outline preservation of potential habitat. Because PV1, PV2, and PV3 do not encroach into the 11,375-acre hardline Otay Ranch RMP Preserve (which is a component of the MSCP Preserve), and the Proposed Project would meet its conveyance requirements, development of these three parcels would not impeded the conservation goals for this species as outlined in Table 3-5 of the MSCP Plan.

Discussion of Covered Wildlife Species in the Context of the Otay Ranch RMP: The Otay Ranch RMP outlines objectives and policies for the preservation of sensitive wildlife species within Otay Ranch (Policies 2.5, 2.8, and 2.11). As stated in Section 3.3.3.7 of the MSCP County Subarea Plan, "all conditions and exceptions listed in the Otay Ranch approval documents, including the Resource Management Plan (Volume I) are hereby incorporated by reference, with respect to easement requirements, revegetation requirements, allowed facilities within the Preserve area, etc." Because the MSCP County Subarea Plan and Implementing Agreement incorporate the Otay Ranch RMP into the MSCP Preserve, any Otay Ranch project that participates in, and is consistent with, the MSCP Plan is deemed to have mitigated its California Environmental Quality Act impacts on any affected Covered Species.

Preservation goals for select sensitive wildlife species are identified and outlined within these policies, which apply Ranch-wide (City of Chula Vista and County of San Diego 1996). Ranch-wide, the Otay Ranch RMP requires preservation of a minimum of 52% of Otay Ranch populations of coastal California gnatcatcher, preservation of a minimum of 75% of Otay Ranch populations of wildlife species recognized as Category 2 candidate species by the U.S. Fish and Wildlife Service (USFWS) (see Table 5 of the Otay Ranch RMP), and preservation of raptor nesting, roosting, and foraging habitat. Since the RMP is a component of the MSCP County Subarea Plan, these ranch-wide goals are incorporated into the MSCP. As stated in Section 3.3.3.7 of the MSCP County Subarea Plan, "All conditions and exceptions listed in the Otay Ranch approval documents, including the Resource Management Plan (Volume I) are hereby incorporated by

reference, with respect to easement requirements, revegetation requirements, allowed facilities within the Preserve area, etc." (County of San Diego 1997).

The percentage of populations retained within the Otay Ranch RMP Preserve, as shown in Table 5 of the Otay Ranch RMP, includes the population estimates at the time of Otay Ranch RMP approval. Because the Proposed Project, which includes PV1, PV2, and PV3, conforms to the original Otay Ranch GDP/SRP boundary, any populations recorded within the portions of the Otay Ranch RMP Preserve within the Project Area would contribute to attainment of the Ranch-wide Otay Ranch RMP conservation goals. Pursuant to the Otay Ranch RMP, the Proposed Project, which includes PV1, PV2, and PV3, is not required to meet the Ranch-wide standard. Rather, the Otay Ranch RMP Preserve Conveyance Obligation satisfies the conservation goals. In the context of the Otay Ranch RMP Preserve conveyance, which is part of the MSCP Preserve, it is important to note the Proposed Project's habitat contribution with respect to individual species habitat as follows:

Orangethroat Whiptail: The Proposed Project would convey 388.0 acres of on-site suitable habitat for orangethroat whiptail to the Otay Ranch RMP Preserve, with an additional 144.7~~145.7~~ acres designated as Conserved Open Space or non-graded LDA. There are 20.1 acres of suitable habitat within Conserved Open Space in PV2 and PV3. The conveyance requirement for the Proposed Project would result in an additional 353.1 acres of off-site habitat conveyed to the Otay Ranch RMP Preserve. It is highly likely that this off-site area would contain suitable habitat for orangethroat whiptail.

Blainville's Horned Lizard: The Proposed Project would convey 415.7 acres of on-site suitable habitat for Blainville's horned lizard to the Otay Ranch RMP Preserve with an additional 144.3~~145.3~~ acres designated as Conserved Open Space or not impacted by the Proposed Project (i.e., non-impacted LDA). There are 20.1 acres of suitable habitat within Conserved Open Space in PV2 and PV3. The conveyance requirement for the Proposed Project would result in an additional 353.1 acres of off-site habitat conveyed to the Otay Ranch RMP Preserve. It is highly likely that this off-site area would contain suitable habitat for Blainville's horned lizard.

Cooper's Hawk: The Proposed Project would convey 422.6 acres of on-site foraging habitat and 3.5 acres of suitable nesting habitat for Cooper's hawk. An additional 144.4~~145.4~~ acres of suitable foraging habitat is designated as Conserved Open Space or non-graded LDA. There are 20.1 acres of suitable habitat within Conserved Open Space in PV2 and PV3. The conveyance requirement for the Proposed Project would result in an additional 353.1 acres of off-site habitat conveyed to the Otay Ranch RMP Preserve. It

is highly likely that this off-site area would contain suitable foraging habitat for Cooper's hawk and may also contain some suitable nesting habitat.

Southern California Rufous-Crowned Sparrow: The Proposed Project would convey 412.2 acres of on-site suitable habitat for Southern California rufous-crowned sparrow to the Otay Ranch RMP Preserve, with an additional 144.3~~145.3~~ acres designated as Conserved Open Space or non-graded LDA. There are 20.1 acres of suitable habitat within Conserved Open Space in PV2 and PV3. The conveyance requirement for the Proposed Project would result in an additional 353.1 acres of off-site habitat conveyed to the Otay Ranch RMP Preserve. It is highly likely that this off-site area would contain suitable habitat for Southern California rufous-crowned sparrow.

Golden Eagle: The Proposed Project would convey 411.5 acres of on-site foraging habitat for golden eagle to the Otay Ranch RMP Preserve, with an additional 144.3~~145.3~~ acres designated as Conserved Open Space or non-graded LDA. There are 20.1 acres of suitable habitat within Conserved Open Space in PV2 and PV3. The conveyance requirement for the Proposed Project would result in an additional 353.1 acres of off-site habitat conveyed to the Otay Ranch RMP Preserve. It is highly likely that this off-site area would contain suitable foraging habitat for golden eagle.

Burrowing Owl: The Proposed Project would convey 29.6 acres of on-site suitable habitat for burrowing owl to the Otay Ranch RMP Preserve~~, with an additional 0.4 acres within non-graded LDA~~. There is no burrowing owl habitat within PV1, PV2, or PV3. The conveyance requirement for the Proposed Project would result in an additional 353.1 acres of off-site habitat conveyed to the Otay Ranch RMP Preserve. There is potential that this off-site area could contain suitable habitat for burrowing owl.

Coastal California Gnatcatcher: The Proposed Project would provide for the preservation of habitat surrounding three pairs of coastal California gnatcatcher. Specifically, within the Project Area boundaries, approximately 294 acres of coastal sage scrub would be conveyed to the Otay Ranch RMP Preserve, with an additional 18.2 acres of coastal sage scrub specifically located in PV2 and PV3 Conserved Open Space that could be conveyed to the Preserve in the future.[3] In order to meet the Otay Ranch RMP conveyance requirements, the Proposed Project must convey an additional 353.1 acres of land to the Otay Ranch RMP Preserve. Although the exact location and vegetation types are not known at this time, it is expected that these additional lands would provide habitat

[3] Approximately 18.2 acres of the total 20.1 acres of PV1, PV2, and PV3 Conserved Open Space is coastal sage scrub.

for the coastal California gnatcatcher. Much of the coastal sage scrub that would be conveyed to the Otay Ranch RMP Preserve is found in large patches within Village 14 and has been designated as very high habitat value.

Western Bluebird: The Proposed Project would convey 307.8 acres of on-site suitable habitat for western bluebird to the Otay Ranch RMP Preserve, with an additional 105.6~~106.6~~ acres designated as Conserved Open Space or non-graded LDA. There are 20.1 acres of suitable habitat within Conserved Open Space in PV2 and PV3. The conveyance requirement for the Proposed Project would result in an additional 353.1 acres of off-site habitat conveyed to the Otay Ranch RMP Preserve. It is likely that this off-site area would contain suitable habitat for western bluebird.

Mule Deer: The Proposed Project would convey 370.6 acres of on-site suitable habitat for mule deer to the Otay Ranch RMP Preserve, with an additional 116.4~~117.4~~ acres designated as Conserved Open Space non-graded LDA. There are 20.1 acres of suitable habitat within Conserved Open Space in PV2 and PV3. The conveyance requirement for the Proposed Project would result in an additional 353.1 acres of off-site habitat conveyed to the Otay Ranch RMP Preserve. It is highly likely that this off-site area would contain suitable habitat for mule deer.

Cougar: The Proposed Project would convey 363.8 acres of on-site suitable habitat for cougar to the Otay Ranch RMP Preserve, with an additional 134.3~~135.3~~ acres designated as Conserved Open Space or non-graded LDA. There are 20.1 acres of suitable habitat within Conserved Open Space in PV2 and PV3. The conveyance requirement for the Proposed Project would result in an additional 353.1 acres of off-site habitat conveyed to the Otay Ranch RMP Preserve. It is highly likely that this off-site area would contain suitable habitat for cougars.

American Badger: The Proposed Project would convey 304.3 acres of on-site suitable habitat for American badger to the Otay Ranch RMP Preserve, with an additional 105.6~~106.6~~ acres designated as Conserved Open Space or non-graded LDA. There are 20.1 acres of suitable habitat within Conserved Open Space in PV2 and PV3. The conveyance requirement for the Proposed Project would result in an additional 353.1 acres of off-site habitat conveyed to the Otay Ranch RMP Preserve. It is likely that this off-site area would contain suitable habitat for American badger.

Because PV1, PV2, and PV3 do not contain areas of designated Otay Ranch RMP Preserve, the conservation of Covered Species and their habitat would be satisfied by conveyance of habitat to the Otay Ranch RMP Preserve pursuant to the Otay Ranch RMP Preserve Conveyance Obligation.

Findings

Covered Plants: As discussed previously, development within PV3 would result in direct impacts to the following three plant species covered by the MSCP County Subarea Plan (Covered Species): San Diego goldenstar, variegated dudleya, and San Diego barrel cactus. Development in PV1 would result in impacts to USFWS-designated critical habitat for a fourth Covered Species, spreading navarretia; this species was not observed (Table 3; Figure 6).

Covered Wildlife: One Covered wildlife species, coastal California gnatcatcher, was observed within PV3 (Figure 6). In addition, PV1, PV2, and PV3 contain habitat that could support nine additional Covered wildlife species (Table 4), including golden eagle. Development of PV1, PV2, and PV3 would result in impacts to suitable habitat for all 10 Covered Species.

As PV1, PV2, and PV3 are governed by the conservation goals of the Otay Ranch RMP, which is incorporated into the MSCP Plan. Mitigation of impacts would be achieved through (1) conveyance to the Otay Ranch RMP Preserve as required by the Otay Ranch RMP Preserve Conveyance Obligation, (2) additional habitat-based mitigation required under this BMO analysis, (3) additional mitigation for impacts to variegated dudleya and San Diego barrel cactus, and (4) additional MSCP and RMP measures applied to coastal California gnatcatcher. Compliance with the Otay Ranch RMP Preserve Conveyance Obligation, coupled with additional mitigation for variegated dudleya, San Diego barrel cactus, golden eagle, and coastal California gnatcatcher, would meet the conservation goals for Covered Species and habitats outlined in Table 3-5 of the MSCP Plan and conservation goals in the Otay Ranch RMP. Thus, the proposed development of PV1, PV2, and PV3 would be consistent with this criterion.

2.2.5.2 Design Criteria for Linkages and Corridors (Attachment H)

Criterion 5 requires that PV1, PV2, and PV3 comply with the applicable MSCP design criteria outlined in Attachment H (Design Criteria for Linkages and Corridors) of the BMO. Attachment H outlines 11 design criteria developed to protect the biological values of linkages and corridors within the MSCP Plan boundaries. The BMO defines "linkage" as "an area of land which supports or contributes to the long-term movement of wildlife and genetic material," whereas a "corridor" is defined as "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 narrower avenue for movement" (County of San Diego 2010, p. 14). The Otay Ranch RMP Preserve within the Proposed Project contains large blocks of habitat that support surrounding linkages as identified

in the Final MSCP (Figure 2-2, MSCP 1998). There are no MSCP-identified linkages within the Project Area, which includes PV1, PV2, and PV3. The following provides the criteria described in Attachment H and analyzes whether PV1, PV2, and PV3 conform to those criteria:

1. ***Habitat linkages as defined by the Biological Mitigation Ordinance, rather than just corridors, will be maintained.***

   Discussion: The linkages identified in the MSCP Plan are based on the Wildlife Corridors Studies Report (Ogden 1992). While the wildlife corridor study identified a BRCA overlapping the Project Area, there are no identified linkages within or surrounding the Project Area and specifically PV1, PV2, and PV3. The Project Area, which includes PV1, PV2, and PV3, is currently undeveloped, with the exception of the existing Proctor Valley Road. Wildlife can move freely throughout the Project Area and surrounding undeveloped landscape. The Wildlife Corridors Studies Report identified specific local and regional corridors used by wildlife in the region (Ogden 1992). While wildlife may move throughout PV1, PV2, and PV3, these three parcels are not considered habitat linkages. Additionally, the MSCP Plan provides designated BRCA and linkages, which are appropriate for this analysis, on Figure 2-2.

   The designated Otay Ranch RMP Preserve areas adjacent to and surrounding PV1, PV2, and PV3 provide for wildlife corridors and movement to those linkages but are not identified linkages in the MSCP Plan. Because PV1, PV2, and PV3 would be consistent with the originally designated Otay Ranch GDP/SRP and Otay Ranch RMP Preserve boundaries, development of these three areas is not expected to impede wildlife movement along identified habitat linkages.

   Findings: As shown on Figure 7, PV1, PV2, and PV3 do not contribute directly to the defined linkages as identified in the MSCP Plan. Thus, the proposed development on these three parcels would not impede existing linkages or otherwise compromise their functionality. The proposed development of PV1, PV2, and PV3 would be consistent with this criterion.

2. ***Existing movement corridors within linkages will be identified and maintained.***

   Discussion Specific to PV1, PV2, and PV3: As previously discussed, the MSCP Plan does not identify linkages within the Project Area, which includes PV1, PV2, and PV3. This discussion focuses on the movement corridors identified within the Project Area. The Wildlife Corridors Studies Report (Ogden 1992) identifies several local and regional wildlife corridors in the Project Area. Figure 8, Wildlife Corridor and Habitat Linkages, shows the locations of these corridors in conjunction with land ownership. Although landscapes in San Diego County have changed significantly over the last two decades, the corridors identified in this study are still viable and currently exist between

large areas of open lands. As shown in Figure 8, these corridors are given identifications and are primarily located within public lands that provide undeveloped areas connected to each other that support wildlife movement across the landscape, including movement between various reservoirs, creeks, and upland habitats. None of the corridors identified in the Wildlife Corridors Studies Report occur within PV1, PV2, or PV3; therefore, development of these areas would not impact the previously identified wildlife movement corridors.

Specifically, the regional corridor identified as regional corridor (R1) is located within the Otay Ranch RMP Preserve north of PV3. In accordance with the Otay Ranch GDP/SRP, R1 was designed to facilitate movement to adjacent BRCA, with a required minimum of 1,300 feet at the northwestern end to 2,200 feet at the southeastern end. As shown on Figure 8, PV2 and PV3 provide an approximately 1,700-foot corridor width at the northwestern end with an additional 100-foot buffer added by the Preserve Edge Plan for a total width of approximately 1,800 feet. At the southeastern end, the portion of the corridor in the area of PV3 is approximately 1,600 feet in width and, when combined with adjacent public lands, exceeds the 2,200-foot requirements of the Otay Ranch GDP/SRP and the Otay Ranch RMP. In short, the design of PV1, PV2, and PV3 respects and maintains the corridor requirements of the original approvals and protects the topographic and vegetative cover for the corridors. Development surrounding R1 has been sited so the entire canyon from rim-to-rim is protected from development. When the delineation of rim-to-rim topography is not obvious, there needs to be approximately 800 feet of width extending up each side of the ravine away from the center of the corridor, creating a 1,600-foot-wide corridor (Ogden 1992). In addition, development to the north and south of the corridor is located approximately 30 feet above the corridor and would not encroach into the corridor. A wildlife crossing would be provided to funnel wildlife under Proctor Valley Road.

The local corridor L4 is located to the east of PV1 and to the west of other Village 14 development. The Ogden wildlife corridor study states that this corridor is 500 to 700 feet wide. Development has been sited to maintain a corridor width between 800 and 900 feet wide. Another wildlife crossing would be provided where the access road crosses over the Proctor Valley drainage. The drainage would be contained within the corridor. The MSCP County Subarea Plan identifies the following requirements for wildlife corridors: if the minimum width of a corridor is 400 feet, it should be no longer than 500 feet; a width of greater than 1,000 feet is recommended for large mammals and birds; and corridors for bobcats (*Pelis rufus*), deer, and other large animals should reach rim-to-rim along drainages, especially if the topography is steep. Development surrounding R1 and L4 has been sited to be consistent with these requirements.

Discussion in the Context of the Otay Ranch RMP and Otay Ranch GDP/SRP: Additionally, as described in the Otay Ranch RMP, the original Otay Ranch GDP/SRP revised the Proctor Valley Development Footprint to resolve general Preserve design and wildlife habitat connectivity issues. After analyzing more than seven different land plan alternatives for the Proctor Valley Parcel, revisions to the original Otay Ranch New Town Plan application were made to identify and maintain wildlife movement within linkages as follows:

- Significant areas of development were eliminated from the proposed development in central Proctor Valley on both the northern and southern boundaries of the regional wildlife corridor.
- The proposed conference center in the middle of the Proctor Valley Parcel was eliminated to avoid any encroachment into the wildlife corridor.
- Development in the inverted L was eliminated from the ravine and moved back onto the ridgetop so that animals could access the ravine, which leads them northwest over the saddle and into the Sweetwater Reservoir.[4]
- The proposed housing along the ridgetop above the lake at the southern entrance to Proctor Valley and the southernmost portions of the proposed development bubble in central Proctor Valley were eliminated to reduce impacts to coastal sage scrub and the local wildlife corridor from Jamul Mountains to Proctor Valley.

These revisions were incorporated into the Otay Ranch GDP/SRP, and the Proctor Valley R1 was designed to become an extensive linkage, with a required minimum width of 1,300 feet at the northwestern end to 2,200 feet at the southeastern end. As shown on Figure 8, the design of the Development Footprint for PV1, PV2, and PV3 would be consistent with these requirements.

Findings: Existing movement corridors within linkages were identified in the Otay Ranch GDP/SRP technical documents, would be defined, established, maintained, and not impacted by the development of PV1, PV2, and PV3. Specifically, the Proposed Project as a whole would help ensure that the corridors identified in the Wildlife Corridors Studies Report are maintained by conveying habitat surrounding and including the identified corridors. Because PV1, PV2, and PV3, as well as the entire Proposed Project, would be consistent with the originally designated Otay Ranch GDP/SRP and Otay Ranch RMP Preserve boundaries, the functions and values of the movement areas identified in the Wildlife Corridors Studies Report (Ogden 1992), and the BRCAs

[4] The inverted L is not a part of this analysis and has been subsequently acquired for Preserve.

identified in the MSCP Plan, movement corridors would be maintained. Thus, the proposed development of PV1, PV2, and PV3 would be consistent with this criterion.

3. ***Corridors with good vegetative and/or topographic cover will be protected.***

   Discussion: As discussed in detail under the previous criterion, development of the Proposed Project, which includes PV1, PV2, and PV3, would be consistent with the originally designated Otay Ranch GDP/SRP and Otay Ranch Preserve boundaries and would maintain and protect the originally designated regional corridor (R1) and local corridor (L4), including the good vegetative (coastal sage scrub and chamise chaparral) and topographic cover (R1 corridor is located in a valley) for those corridors.

   For the Proposed Project, the on-site conveyed Preserve lands would support the linkages and corridors as described in Section 2.2.5.2. A total of 426.7 acres of land within the Project Area would be conveyed to the Otay Ranch RMP Preserve, of which 419.9 acres is native habitat. Approximately 11.2 acres of that habitat would be used for roads, which leaves 408.7 acres of coastal sage scrub, chaparral, and riparian vegetative cover within the Otay Ranch RMP Preserve lands.

   Findings: PV1, PV2, and PV3 do not function as or include wildlife corridors. However, two corridors are located adjacent to these areas (R1 and L4). Because the Development Footprint of PV1, PV2, and PV3 would be consistent with the designated Otay Ranch GDP/SRP and Otay Ranch RMP Preserve boundary, the functionality of the R1 and L4 corridors located within the Otay Ranch RMP Preserve is maintained; therefore, the good vegetative (i.e., coastal sage scrub, chaparral, and riparian vegetation) and/or topographic cover of the corridors would be protected. Thus, the proposed development of PV1, PV2, and PV3 would be consistent with this criterion.

4. ***Regional linkages that accommodate travel for a wide range of wildlife species, especially those linkages that support resident populations of wildlife, will be selected.***

   Discussion: The focal species chosen for the Wildlife Corridors Studies Report (Ogden 1992) include larger mammals such as mule deer, cougar, and bobcat and the following two bird species: coastal California gnatcatcher and coastal cactus wren *(Campylorhynchus brunneicapillus sandiegensis).* These five species were chosen as the focal species for the corridor study because they "naturally occur in low densities and that are unwilling or unable to cross large areas of developed or otherwise unfavorable habitat" (Ogden 1992). The corridor recommendations provided in the Wildlife Corridors Studies Report were based on the ability of the corridor to accommodate travel for these species. As previously stated, while there are no MSCP defined linkages within the Project Area (which includes PV1, PV2, and PV3), there is one regional corridor as

defined in the Wildlife Corridors Studies Report (R1). This regional corridor is the basis for evaluating PV1, PV2, and PV3 in conjunction with this criterion.

Even after development, the Project Area would accommodate travel for a wide range of wildlife species through R1 as follows: The Development Footprint would adhere to the required widths to protect that corridor; development would be located above the corridor and pulled back from the edge of the ridgetop; a minimum of a 100-foot buffer between development and Preserve would be included in the Development Footprint; and a wildlife crossing would be provided under Proctor Valley Road. In addition, the Proposed Project's design, including the design for development in PV1, PV2, and PV3, would be consistent with the Otay Ranch GDP/SRP and Otay Ranch RMP Preserve, which was based on the Wildlife Corridors Studies Report and designed specifically to preserve regional linkages.

Findings: PV1, PV2, and PV3 are not considered regional linkages or located adjacent to regional linkages as identified in the MSCP Plan. PV1, PV2, and PV3, as designed, would be consistent with the Otay Ranch GDP/SRP and Otay Ranch RMP Preserve. In addition, the Proposed Project design would include the recommendations for corridors described in the Wildlife Corridors Studies Report (Ogden 1992). Therefore, development of PV1, PV2, and PV3 would be consistent with this criterion.

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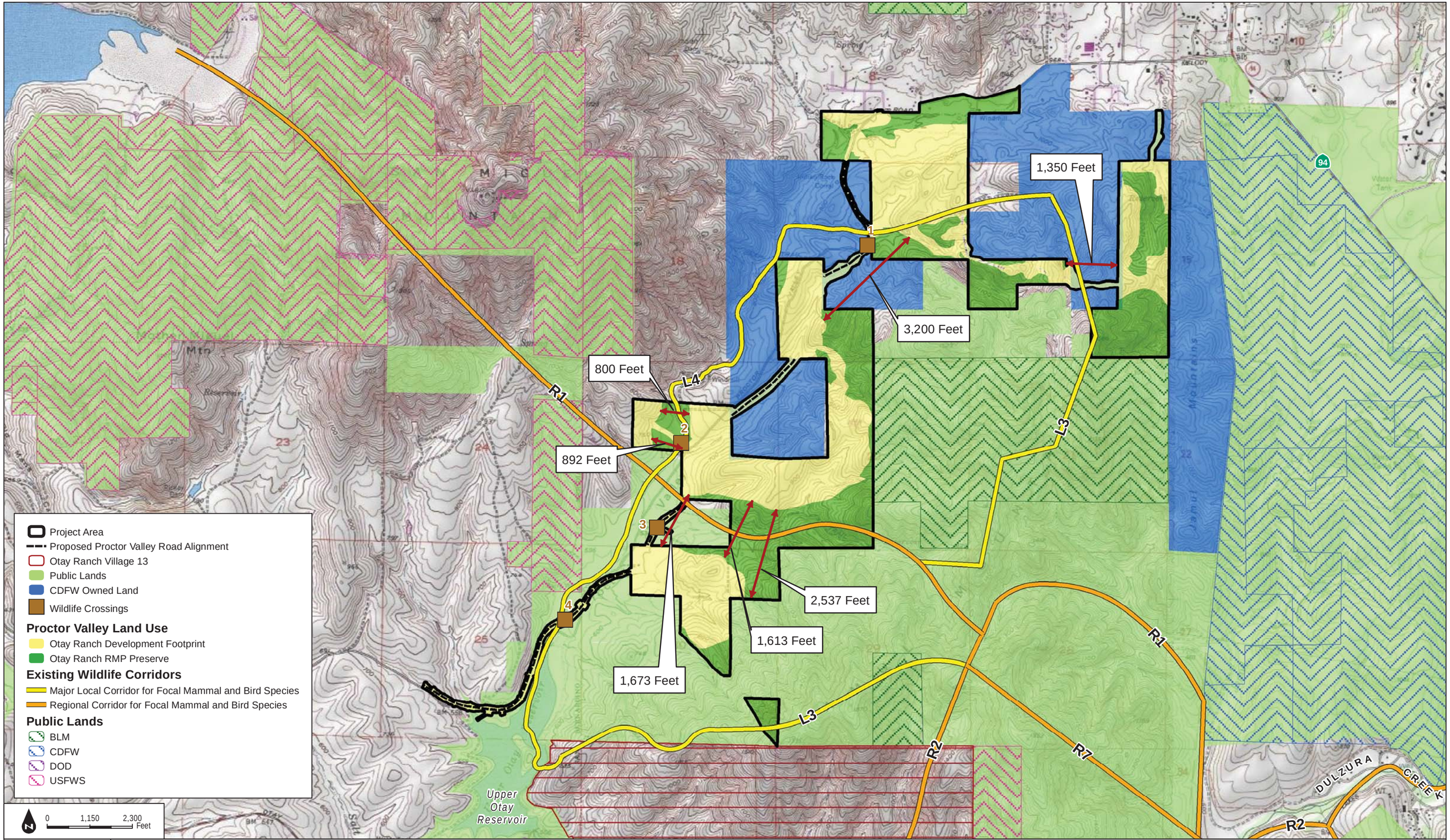

SOURCE: USGS 7.5-minute Topographic Map; Hunsaker 2017; SANGIS 2003; OGDEN 1992

DUDEK

FIGURE 8

Wildlife Corridor and Habitat Linkages

Otay Ranch Village 14 and Planning Areas 16/19

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As shown on Figure 8, adjacent to PV2 and PV3, the Proposed Project provides a 1,700-foot corridor width for corridor R1 at the northwest end, with an additional100-foot buffer added by the Preserve Edge Plan for a total of 1,800 feet. At the southeast end, the portion of R1 corridor is approximately 1,600 feet and, when combined with surrounding public lands, exceeds the 2,200-foot requirements of the Otay Ranch GDP/SRP and the Otay Ranch RMP. The L4 corridor would be 800 to 900 feet wide, which is larger than the recommended 500 to 700 feet in the Wildlife Corridors Studies Report.

Findings: Development of PV1, PV2, and PV3 maintain the linkage width as specified in the Wildlife Corridors Studies Report (Ogden 1992). The corridor study recommends R1 maintain a width of 1,300 to 2,200 feet through Proctor Valley and that L4 maintains a width of 500 to 700 feet. The widths of the corridors were based on providing cover and passage for five species (three large mammals and two bird species). For the five focal wildlife species to use the regional and local corridors identified for Proctor Valley, the Proposed Project would provide a 1,700- to over 2,200-foot corridor (R1) and an 800- to 900-foot corridor (L4). Development of PV1, PV2, and PV3 would be consistent with this criterion.

5. ***If a corridor is relatively long, it must be wide enough for animals to hide in during the day. Generally, wide corridors are better than narrow ones. If narrow corridors are unavoidable, they should be relatively short. If the minimum width of a corridor is 400 feet, it should be no longer than 500 feet. A width of greater than 1,000 feet is recommended for large mammals and birds. Corridors for bobcats, deer, and other large animals should reach rim-to-rim along drainages, especially if the topography is steep.***

   Discussion: See Criteria 2 and 5 in this section, which provide detailed information regarding the widths of wildlife corridors R1 and L4, which are adjacent to PV1, PV2, and PV3. As stated in the Wildlife Corridors Studies Report, the overall length of R1 is over 6 miles long, with a varying width of 1,100 to 2,200 feet depending on topography. The Wildlife Corridors Studies Report does not provide a length for L4; however, based on maps provided of the corridor, it appears to be approximately 3 miles long. Within the confines of the Proposed Project, R1 is approximately 3,800 feet long, while L4 is approximately 1,480 feet long. As previously discussed, the Development Footprint for the Proposed Project, which includes PV1, PV2, and PV3, was designed based on the recommendations provided in the Wildlife Corridors Studies Report. The designated Development Footprint surrounding R1 provides a corridor greater than 1,000 feet to facilitate movement for large mammals and birds and also reaches rim-to-rim along the drainage. Within the Project Area, L4 is approximately 1,480 feet long and between 800

and 900 feet wide, which is less than the 2:1 length-to-width ratio required by the MSCP County Subarea Plan.

Findings: Existing movement corridors within linkages were identified in the Otay Ranch GDP/SRP technical documents and would be defined, established, maintained, and not impacted by the development of PV1, PV2, and PV3. Specifically, the Proposed Project as a whole would help ensure that the corridors identified in the Wildlife Corridors Studies Report are maintained by conveying habitat surrounding and including the identified corridors. Because PV1, PV2, and PV3, as well as the entire Proposed Project, would be consistent with the originally designated Otay Ranch GDP/SRP and Otay Ranch RMP Preserve boundaries, the functions and values of the movement areas identified in the Wildlife Corridors Studies Report (Ogden 1992) and the BRCAs identified in the MSCP Plan, movement corridors would be maintained at the recommend length and width. Thus, the proposed development of PV1, PV2, and PV3 would be consistent with this criterion.

6. ***Visual continuity (i.e., long lines-of-sight) will be provided within movement corridors. This makes it more likely that the animals will keep moving through it. Developments along the rim of a canyon used as a corridor should be set back from the canyon rim and screened to minimize their visual impact.***

   Findings: As stated in Section 2.2.2 regarding Criteria 2, designated development within PV1, PV2, and PV3 was sited to maintain the corridor widths recommended within the Wildlife Corridors Studies Report (Ogden 1992). Development is set back from the rim of the R1 corridor, and a 100-foot Preserve edge buffer is included as a part of the Proposed Project to provide screening of development from wildlife moving within the R1 corridor. No development would be placed within the corridors, which would impede wildlife movement or line of sight. A road providing access to PV1 would be placed across L4. However, to ensure that wildlife are still able to move through the area, a wildlife crossing, as described previously in Section 2.2.5.1, would be installed below the road and meet the MSCP County Subarea Plan's recommendation of less than a 2:1 length-to-width ratio.

   Discussion: Development of PV1, PV2, and PV3 would not impeded the recommendations provided in the Wildlife Corridors Studies Report and the requirements outlined in the Otay Ranch RMP. In addition, a wildlife crossing would be provided where a new road crosses L4. Therefore, development of PV1, PV2, and PV3 would be in conformance with this criterion.

7. ***Corridors with low levels of human disturbance, especially at night, will be selected. This includes maintaining low noise levels and limiting artificial lighting.***

   Discussion: The corridors within the vicinity of PV1 (L4) and PV3 (R1) have already been identified by the Otay Ranch GDP/SRP and the Otay Ranch RMP. As discussed thoroughly throughout this section, the Otay Ranch GDP/SRP and the Otay Ranch RMP adapted the corridor locations and recommendations provided in the Wildlife Corridors Studies Report. Corridor selection is not required or allowed as a part of the Proposed Project. The discussion provided in support of this criterion is based on the measures identified for the Proposed Project, which includes PV1, PV2, and PV3, which reduce the levels of human disturbance on those identified corridors.

   A Preserve Edge Plan has been developed to identify allowable uses for areas adjacent to the Otay Ranch RMP Preserve within the Preserve edge. The Preserve edge is a 100-foot-wide strip of land within the designated development that is adjacent to the Otay Ranch RMP Preserve. The Preserve edge assumes that areas of Conserved Open Space are still within designated development. In accordance with Policy 7.2 of the Otay Ranch RMP, a Preserve Edge Plan is required to be developed for all specific plans that contain areas adjacent to the Preserve. The Preserve Edge Plan summarizes and evaluates the policies contained within the Otay Ranch GDP/SRP, the Otay Ranch RMP, the MSCP County Subarea Plan, as well as City of San Diego MSCP Cornerstone Lands as they relate to those areas within the Preserve edge. Lighting requirements include shielded lighting designs that avoid spillover light in the Otay Ranch RMP Preserve. Lighting plans and a photometric analysis would be prepared in conjunction with improvement plans for development areas adjacent to the Preserve to illustrate the location of proposed lighting standards and type of shielding measures. Lighting plans and accompanying photometric analyses must also be prepared in conjunction with street and other improvements proposed within the Otay Ranch RMP Preserve to demonstrate that light spillage into the Preserve is avoided to the greatest extent possible.

   There is a public park designed within PV3. It is located along the southwestern edge of PV3 and is not adjacent identified corridors (R1 and L4) but is adjacent to open space. Public park hours of operation would be limited to daylight hours and would be enforced and controlled by the County Parks and Recreation Department. Sports fields within public parks would not be lighted for nighttime use. Proposed landscape lighting within public parks shall be designed to eliminate light spillage into adjacent MSCP Preserve areas. Lighting must comply with the County Code of Regulatory Ordinances, Sections 51.201 to 51.209, Light Pollution Code.

   Increased human activity in PV1, PV2, and PV3 is expected to result in long-term noise

effects in the area. Noise is expected to be greatest during daylight hours and, therefore, would be more of a disturbance to those species that are active during the daytime because the noise levels are lower at night. Nocturnal wildlife are not expected to be significantly impacted while foraging or moving in open space areas. Noise pollution is not anticipated to decrease breeding of any special-status species. Development-related noise, such as traffic, operation of landscape maintenance equipment and tools (e.g., mowers, blowers, trimmers, wood chippers), recreation at parks, and loud music from vehicles and residences, can have an effect on wildlife. The Preserve Edge Plan provides for a 100-buffer between the Otay Ranch RMP Preserve and development. The Preserve edge would act as a buffer for noise generated from development. In addition, when single-family homes are located adjacent to the Otay Ranch RMP Preserve, 6-foot high solid walls would provide additional noise attenuation. Uses in or adjacent to the Otay Ranch RMP Preserve, which are not reduced by the Preserve edge, shall be designed to minimize potential noise impacts to surrounding wildlife species by constructing berms or walls adjacent to commercial areas and any other uses, such as community parks, that may introduce noises that could impact or interfere with wildlife use of the Otay Ranch RMP Preserve.

Findings: PV1 and PV3 are adjacent to identified corridors and may have an indirect impact on wildlife movement within those corridors. The Preserve Edge Plan provides specific requirements necessary to reduce human disturbances such as noise and lighting (e.g., lighting standards, type of bulb, wattage, and shielding restrictions into the Preserve). Additional project-related measures applied within the Preserve Edge Plan include park setbacks, limitations on uses, no structures, walls along the perimeter of homes located adjacent to the Preserve, and berms or walls constructed adjacent to commercial areas and/or parks. With these measures, the PV1 and PV3 would reduce the human disturbances on corridors R1 and L4. Development within PV1, PV2, and PV3 would be in conformance with this criterion.

8. ***Barriers, such as roads, will be minimized. Roads that cross corridors should have 10-foot-high fencing that channels wildlife to underpasses located away from interchanges. The length-to-width ratio for wildlife underpasses is less than 2, although this restriction can be relaxed for underpasses with a height of greater than 30 feet.***

   Discussion: PV1, PV2, and PV3 do not cross any wildlife corridors. As discussed throughout this section, PV1 and PV3 are located adjacent to wildlife corridors (L4 and R1) and have been designed to maintain the required width to facilitate wildlife movement within these corridors. Therefore, the development within PV1, PV2, and PV3 would not create barriers to wildlife corridors; however, a new road from Proctor Valley

Road to PV1, which crosses L4, is required for access. The amount of traffic using this road would be minimal because only four large lots are proposed within PV1. This wildlife crossing would be an internal road crossing located along local corridor L4 in between two areas of development (Figure 8). The crossing would be a pre-cast span arched culverts with a soft bottom. The crossing would be 15 feet high at the highest point, 111 feet long, and 84 feet wide, making the length-to-width ratio less than 2:1. The crossing meets the MSCP County Subarea Plan's recommendation of less than a 2:1 length-to-width ratio and meets the minimum openness ratio. Three additional crossings are provided within the Proposed Project. To the north of PV3, a wildlife crossing would be provided under Proctor Valley Road to allow for wildlife movement through natural topography in conformance with the Otay Ranch GDP/SRP and Otay Ranch RMP requirements (Figure 8) and designed to comply with all necessary length-to-width ratios and fencing requirements. The wildlife crossings would be designed in conformance with accepted standards and are discussed in detail within the Biological Resources Technical Report for the Proposed Project.

Findings: The Development Footprint of PV1, PV2, and PV3 would not include any wildlife corridors and, thus, would not contemplate construction of barriers within corridors or linkages; however a new road crossing across corridor L4 is required to access PV1. The amount of traffic using this road would be minimal because only four large lots are proposed within PV1. A wildlife crossing would be installed under the road and following the drainage. In addition, three wildlife crossings would be provided along Proctor Valley Road, one of which provides a crossing in relation to R1. These three Proctor Valley Road crossings are not located within PV1, PV2, or PV3. Since PV1, PV2, and PV3 would not create barriers to wildlife movement within L4 and R1, and a wildlife crossing would be provided for a new road providing access to PV1, development of PV1, PV2, and PV3 would be in conformance with this criterion.

9. ***Where possible at wildlife crossings, road bridges for the vehicular traffic rather than tunnels for wildlife use will be employed. Box culverts will only be used when they can achieve the wildlife crossing/movement goals for a specific location. Crossings will be designed as follows: sound insulation materials will be provided; the substrate will be left in a natural condition and vegetated with native vegetation if possible; a line-of-sight to the other end will be provided; and, if necessary, low-level illumination will be installed in the tunnel.***

Discussion: As stated in Item 9, above, wildlife crossings are not required within PV1, PV2, or PV3. However, a new road to PV1, which crosses L4, is required for vehicle access. The wildlife crossing would be installed where the road crosses over the Proctor

Valley drainage. This crossing is a pre-cast span arched culverts with a soft bottom. The crossing is 15 feet high, 111 feet long, and 84 feet wide, making the length-to-width ratio less than 2:1. The crossing meets the MSCP Plan's recommendation of less than a 2:1 length-to-width ratio and meets the minimum openness ratio. The openness ratio for this crossing would be 1.8 meters. Given the topography and length-to-width ratio, neither a bridge nor a low-level illumination is necessary in this location. The amount of traffic using this road would be minimal because only four large lots are proposed. Therefore, sound insulation materials are not necessary.

Findings: A wildlife crossing is required where the new road that provides access to PV1 crosses over L4 and the Proctor Valley drainage. An arched culvert would be installed, leaving the natural bottom of the channel intact. The length and width of the culvert meets the length-to-width ratio identified in Item 9. Therefore, development of PV1 would be in conformance with this criterion.

10. ***If continuous corridors do not exist, archipelago (or steppingstone) corridors may be used for short distances. For example, the gnatcatcher may use disjunct patches of sage scrub for dispersal if the distance involved is under 1–2 miles.***

    Discussion: Continuous corridors (L4 and R1) are located outside of PV1, PV2, and PV3. As discussed in detail in this section, the Proposed Project maintains the widths for each corridor as recommended in the Wildlife Corridors Studies Report (Ogden 1992) and provides measures to reduce human disturbances on the corridors, required wildlife crossings, and a 100-foot buffer between the corridors and habitable structures. Since continuous corridors within the Proposed Project exist, archipelago (or steppingstone) corridors are not required.

    Findings: Continuous corridors exist within and adjacent to the Proposed Project, which includes PV1, PV2, and PV3; therefore, archipelago (or steppingstone) corridors are not required.

2.3 Section 86.506 – Habitat-Based Mitigation

Section 86.506 of the BMO outlines the process for determining mitigation requirements for sensitive habitats. To determine the mitigation requirements for the impacts to habitat from the development of PV1, PV2, and PV3, it first must be determined whether the impact site and the proposed mitigation site qualify as BRCAs.

Section 86.506 outlines the requirements for determining whether land qualifies as a BRCA. The impact site is a BRCA if it meets one or more of the following criteria:

a. The land is shown as pre-approved mitigation area on the wildlife agencies' the pre-approved mitigation map (Attachment F of the BMO).

b. The land is located within an area of habitat that contains biological resources that support or contribute to the long-term survival of sensitive species, which determination is based on a biological analysis approved by the Director, and is adjacent or contiguous to preserved habitat that is within the pre-approved mitigation area on the wildlife agencies pre-approved mitigation map (as shown on Attachment F of the BMO).

c. The land is part of a regional linkage/corridor.

d. The land is shown on the Habitat Evaluation Map (Attachment J of the BMO) as very high or high and links significant blocks of habitat.

e. The land consists of or is within a block of habitat greater than 500 acres in an area of diverse and undisturbed habitat that contributes to the conservation of sensitive species.

f. The land contains a high number of sensitive species and is adjacent or contiguous to surrounding undisturbed habitats, or contains soil derived from geological formations known to support sensitive species.

In addition to the previously mentioned criteria, the MSCP Plan (1998) identifies 16 BRCAs and associated habitat linkages within the MSCP study area. Figure 2-2, Generalized Core and Biological Resources Area and Linkages, in the MSCP Plan depicts PV2 and PV3 entirely within the Jamul Mountains BRCA, whereas PV1 is located in the Sweetwater Reservoir/San Miguel Mountain/Sweetwater River BRCA (Figure 7).

PV1, PV2, and PV3 would be considered part of the larger BRCAs because they meet the following requirements: (1) the parcels are shown on the pre-approved mitigation map, (2) each parcels contains biological resources that support or contribute to the long-term survival of sensitive species and is adjacent to preserved habitat, (3) portions of the parcels are Very high or high quality habitat, and (4) each parcel is within a block of habitat greater than 500 acres.

Impacts from development of PV1, PV2, and PV3 would be mitigated within the Otay Ranch RMP Preserve and be in an area designated as a BRCA. If mitigation is not located within a BRCA, then the mitigation ratios would be revised, and additional mitigation would be required. Impacts and mitigation requirements are outlined in Table 5. Tiers are based on the List of San Diego County Vegetation Communities and Tier Levels within the MSCP County Subarea Plan (Table 4-7) and the BMO (Attachment J). Mitigation ratios are based on the mitigation ratios in

the MSCP County Subarea Plan (Table 4-8) and the BMO (Attachment K). The Development Footprint acreages in PV1, PV2, and PV3 represented in Table 5 below do not include 20.1 acres of Conserved Open Space. Although these 20.1 acres are currently designated as development, they have been identified as potential mitigation for Proposed Project impacts and would not be impacted by the development of PV1, PV2, and PV3.

Table 5
Mitigation Requirements for Impacts to Tier II and III Habitats

Habitat Types/Vegetation Communities	Code[a]	PV1, PV2, and PV3 Development Footprint	Mitigation Site – BRCA		Mitigation Site – Not BRCA	
			Mitigation Ratio	*Required Mitigation*	*Mitigation Ratio*	*Required Mitigation*
Tier II						
Diegan coastal sage scrub	32500	76.2	1.5:1	114.3	2:1	152.4
Diegan coastal sage scrub (disturbed)	32500	33.0	1.5:1	49.5	2:1	66
Subtotal of Tier II Habitats		*109.2*	—	*163.8*	—	*218.4*
Tier III						
Granitic chamise chaparral	37210	62.7	1:1	62.7	1.5:1	94.0
Granitic chamise chaparral (disturbed)	37210	0.8	1:1	0.8	1.5:1	1.2
Non-native grassland	42200	0.8	1:1	0.8	1.5:1	1.2
Subtotal of Tier III Habitats		*64.3*	—	*64.3*	—	*96.4*
Totals		**173.5**	**228.1**		**314.8**	

Note: BRCA = Biological Resource Core Area

Mitigation for Otay Ranch impacts, including impacts to PV1, PV2, and PV3, must conform to the provisions of the Otay Ranch RMP, including the requirement that the applicant convey to the Otay Ranch RMP Preserve 1.188 acres of land for every 1 acre slated for development (Otay Ranch RMP Preserve Conveyance Obligation). This Otay Ranch RMP mitigation requirement, including its 1.188 land conveyance ratio, is referenced in Section 10.5.A.2 of the County of San Diego MSCP Subarea Plan Implementing Agreement where the County's required mitigation for the MSCP County Subarea Plan includes the contribution of the 11,375-acre Otay Ranch RMP Preserve.

The Otay Ranch RMP excludes areas that include common uses, such as schools, parks, and arterial roadways, from the required mitigation/conveyance. Within PV2, there are 3.6 acres of common uses associated the on-site water tank and access road. Common uses within PV3 include 2.9 acres of public parks and Proctor Valley Road within the development footprint. There are no common uses within PV1. Thus, PV1, PV2, and PV3, which impact 171.3 acres (177.8 acres of development minus 6.5 acres of common uses), would be required to convey 203.5 acres of Otay Ranch RMP Preserve lands (171.3 X 1.188 = 203.5). As described previously, because

the BMO mitigation requirements are more stringent for certain types of habitat, the BMO would require an additional 24.6 acres of mitigation beyond the 203.5 acres required by the Otay Ranch RMP Preserve Conveyance Obligation for a total of 228.1 acres. The mitigation provided for impacts to PV1, PV2, and PV3 would be like-kind or up-tiered habitat.

2.4 Section 86.507 – Species-Based Mitigation

Section 86.507 of the BMO specifies the process for determining mitigation requirements for sensitive plant and wildlife populations.

2.4.1 Sensitive Plant Populations

1. ***Critical Populations of Sensitive Plant Species. During project design, first priority shall be given to avoidance of impacts populations of sensitive plant species listed on the Critical Populations of Sensitive Plant Species Within the MSCP subarea (Attachment C of Document No. 0769999 on file with the Clerk of the Board). Where complete avoidance is infeasible, County staff will work with the project proponent to design the project to minimize impacts to the Critical Population to the maximum extent practicable.***

   Discussion: The development of PV1, PV2, and PV3 would not result in impacts to any of the plant species listed in Attachment C, Critical Populations of Sensitive Plant Species within the MSCP Subarea, of the BMO. Therefore this criterion is not applicable.

   Findings: Since development of PV1, PV2, and PV3 would not result in impacts to any of the plant species listed in Attachment C of the BMO, this criterion is not applicable.

2. ***Avoidance of Sensitive Plants. Impacts to Narrow Endemic Plant Species Within the MSCP Subarea (Attachment E of Document No. 0769999 on file with the Clerk of the Board), or Sensitive Plant Species, as defined, that meet the criteria in Group A or B shall be avoided to the maximum extent practicable. Where complete avoidance is infeasible, encroachment may be authorized depending on the sensitivity of the individual species and the size of the population except that encroachment shall not exceed 20% of the population on-site. Where impacts are allowed, in-kind preservation shall be required at a 1:1 to 3:1 ratio depending on the sensitivity of the species and population size, as determined in a biological analysis approved by the Director.***

   Discussion: The development of PV3 would impact one narrow endemic species as listed in Attachment E of the BMO (variegated dudleya), and development of PV2 and PV3

would result in impacts to County Group A and B species (Table 6), two of which are covered species: San Diego goldenstar and barrel cactus.

As described in Section 2.2.5.1, Item 6, 35 individuals of variegated dudleya would be impacted by development within PV3, (this species does not occur in PV1 or PV2). As shown on Figure 6, Sheet 2, of the Otay Ranch RMP, a population of variegated dudleya was observed within the same general location as those identified in the update surveys conducted for the site. The Otay Ranch RMP and Otay Ranch PEIR determined that this population of variegated dudleya did not warrant conservation in the Otay Ranch RMP Preserve, and mitigation by conveying 1.188 acres to the Otay Ranch RMP Preserve was deemed adequate for impacts to this species. Variegated dudleya is not on the list of critical populations of sensitive plant species within the MSCP County Subarea Plan (Attachment C of the BMO). The two populations located within the PV3 Development Footprint are not considered core populations because they are small populations (10 and 25 plants, respectively) and are not located adjacent to any other populations. In addition, the Otay Ranch RMP did not identify the populations within PV3 as core populations, necessitating a designation as Otay Ranch RMP Preserve. Avoidance of the two small populations of variegated dudleya within PV3 is not feasible for the following reasons: (1) The two populations within PV3 are located approximately 400–500 feet from the Otay Ranch RMP Preserve, and (2) a redesign to avoid these two small populations, if it provides the necessary 100-foot Preserve edge, meets County Fire Department regulations, addresses topographic constraints, and ensures that the populations were adjacent to the Preserve, would result in the loss of up to 30 acres of developable land. A redesign to keep the secondary access road for fire safety would result in the loss of approximately 10 acres, but the population would be separated from the Otay Ranch RMP Preserve by a road. As previously discussed, further reduction in Development Footprint would limit the ability to achieve the density set forth in both the County's General Plan and the Otay Ranch GDP/SRP. The development could be redesigned to include these populations within the private homeowners' association open space. However, carving the populations out of the development and preserving them on their own would isolate the populations from other Preserve lands and expose the variegated dudleya populations to edge effects, which Table 3-5 of the MSCP County Subarea Plan specifically indicates should be minimized.

As described in Section 2.2.5.1, Item 8, a total of 17 San Diego goldenstar individuals would be impacted in PV3, (this species does not occur in PV1 or PV2). San Diego goldenstar is not on the list of critical populations of sensitive plant species within the MSCP County Subarea Plan (Attachment C of the BMO). This species is found

throughout the overall Project Area in large quantities. Specifically, conveyance to the Otay Ranch RMP Preserve would preserve 2,902 individuals of the species, and an additional 688 individuals would be preserved through Conserved Open Space. Another 577 individuals within non-graded LDA would not be impacted by the Proposed Project. The three small populations are not identified as core populations, necessitating a designation as Otay Ranch RMP Preserve and therefore impacts to these three small isolated populations would not compromise the conservation of this species. Redesigning the project to avoid the three small populations San Diego goldenstar within PV3 is not feasible as a redesign, if it provides the necessary 100-foot Preserve edge, meets County Fire Department regulations, addresses topographic constraints, and ensures that the populations were adjacent to the Preserve, would result in the loss of up to 15 acres of developable land.

As described in Section 2.2.5.1, Item 8, a total of 36 San Diego barrel cactus individuals would be impacted by development in PV3, (this species does not occur in PV1 or PV2). Similar to variegated dudleya, the species was observed within PV3 during the surveys conducted in support of the Otay Ranch RMP (see Figure 6, Sheet 2 of that document). The Otay Ranch RMP and Otay Ranch PEIR determined that this population of barrel cactus did not warrant conservation in the Otay Ranch RMP Preserve, and mitigation by conveying 1.188 acres to the Otay Ranch RMP Preserve was deemed adequate for impacts to this species. San Diego barrel cactus is not on the list of critical populations of sensitive plant species within the MSCP County Subarea Plan (Attachment C of the BMO). The barrel cactus individuals located within PV3 are scattered throughout the site. The scattered individuals are not identified as a core population and designing development around these populations would result in isolated populations. Avoidance of these small populations of barrel cactus within PV3 would not be feasible as it would result in the loss of approximately half of the developable land within this parcel. As previously discussed, further reduction in Development Footprint would limit the ability to achieve the density set forth in both the County's General Plan and the Otay Ranch GDP/SRP. Mitigation ratios for these species vary depending on the rarity of the species (i.e., 3:1 mitigation to impact ratio required for variegated dudleya, a narrow endemic species). The Otay Ranch RMP Preserve associated with the Proposed Project contains the required mitigation for Munz's sage (*Salvia munzii*). Additional mitigation would be required for impacts to San Diego goldenstar, variegated dudleya, Robinson's pepper-grass, San Diego barrel cactus, and San Diego marsh-elder. Existing populations of variegated dudleya, San Diego goldenstar and San Diego barrel cactus would be translocated to a suitable receptor site within the Otay Ranch RMP Preserve in the Project Area. In addition to translocation of existing populations, additional plants of all three

species would be installed at the receptor site (Table 6). The Otay Ranch PEIR states that translocation is a required component of mitigation for sensitive plant species and specifically variegated dudleya and San Diego barrel cactus (see Table 3.3-11 of the PEIR) and provides examples of restoration projects that included restoration or translocation of variegated dudleya, San Diego barrel cactus, and San Diego marsh-elder. In addition, the Phase II RMP states the following regarding variegated dudleya; "The project preserves 75% of this species on site, including representative populations from each of the three large parcels that comprise the Otay Ranch. In addition, all impacted plants are to be transplanted to appropriate habitat and clay soils within the same parcel. The Otay Ranch PEIR concluded that impacts to this species have been reduced to below a level of significance" (City of Chula Vista and County of San Diego 2015b). Whereas the Otay Ranch RMP establishes the framework for the management of Otay Ranch, the Phase II RMP was developed to turn those policies into specific action programs.

A more detailed summary of the locations, of variegated dudleya, San Diego goldenstar and barrel cactus proposed for impacts and the suitability for the area of Conserved Open Space to support the translocated populations can be found in the attached Review of Impacts and Mitigation for Variegated Dudleya, Barrel Cactus and San Diego Goldenstar (see Appendix A).

Relocation efforts may include seed collection and/or transplantation to a suitable receptor site and shall be based on the most reliable methods of successful relocation. The program shall also include a recommendation for method of salvage and relocation/application based on feasibility of implementation and likelihood of success. The program shall include, at a minimum, an implementation plan, maintenance and monitoring program, estimated completion time, success criteria, and any relevant contingency measures. The program shall also be subject to the oversight of the Development Services Director (or their designee). In addition to relocation of existing populations for variegated dudleya, San Diego goldenstar, and San Diego barrel cactus, a biological resource salvage and restoration plan would include additional plantings of these species in order to achieve a 3:1 and 2:1 mitigation ratios respectively. This would result in no net loss of any populations. A biological resource salvage and restoration plan would be prepared, which shall, at a minimum, evaluate options for plant salvage and relocation, including individual plant salvage and additional plantings, native plant mulching, selective soil salvaging, application of plant materials on manufactured slopes, and application/relocation of resources within the Preserve.

Table 6
Impacts and Requirement Mitigation for Sensitive Plant Populations within PV2 and PV3

Species	Regulatory Status: Federal/State/County/CRPR	PV2 and PV3 Total Impacts[a]	Mitigation Ratio	Required Mitigation	On-Site Preservation[b]	Remaining Mitigation Required
County Group A						
San Diego goldenstar (*Bloomeria clevelandii*)	None/None/ Covered/1B.1	17	3:1 translocation and 2:1 additional plantings	51	4,166	N/A
variegated dudleya (*Dudleya variegata*)	None/None/ Covered, Narrow Endemic/ 1B.2	35	1:1 translocation and 2:1 additional plantings	105	0	105
Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*)	None/None/ Not Covered/ 4.3	112	2:1	224	6	218
County Group B						
San Diego barrel cactus (*Ferocactus viridescens*)	None/None/ Covered/2B.1	36	1:1 translocation and 1:1 additional plantings	72	2	70
San Diego marsh-elder (*Iva hayesiana*)	None/None/ Not Covered/ 2B.2	2,643	1:1	2,643	1,619	1,024
Munz's sage (*Salvia munzii*)	None/None/ Not Covered/ 2B.2	446	1:1	446	6,001	N/A
County Group D						
Western dichondra (*Dichondra occidentalis*)	None/None/ Not Covered/ 4.2	0.17 acres	N/A		0	N/A
Palmer's grapplinghook (*Harpagonella palmeri*)	None/None/ Not Covered/ 4.2	40	N/A		0	N/A
graceful tarplant (*Holocarpha virgata* ssp. *elongata*)	None/None/ Not Covered/ 4.2	5	N/A		0	N/A
golden chaetopappa *(Pentachaeta aurea* ssp. *aurea*)	None/None/ Not Covered/ 4.2	2,210	N/A		6,258	N/A
Ashy spike-moss (*Selaginella cinerascens*)	None/None/ Not Covered/ 4.1	0.2 acres	N/A		2.76 acres	N/A
San Diego County viguiera (*Viguiera laciniata*)	None/None/ Not Covered/ 4.2	1,646	N/A		11,222	N/A

Notes: CRPR = California Rare Plant Rank; N/A = not applicable
Status Legend
County
Covered = Cover species in the MSCP Plan
CRPR
1B: Plants rare, threatened, or endangered in California and elsewhere
2B: Plants rare, threatened, or endangered in California but more common elsewhere
4: Plants of limited distribution – a watch list
Threat Ranks
0.1: Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
0.2: Moderately threatened in California (20%–80% of occurrences threatened/moderate degree and immediacy of threat)
0.3: Not very threatened in California (less than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known)

[a] There are no impacts to special-status plants within PV1.

[b] On-site preservation includes populations within the on-site Otay Ranch RMP, Non-impacted LDA and Conserved Open Space.

Relocation efforts for variegated dudleya, San Diego goldenstar, and San Diego barrel cactus would employ methods that have been proven to be successful within the region, may include seed collection and/or transplantation to a suitable receptor site, and shall be based on the most reliable methods of successful relocation. The program shall also include a recommendation for method of salvage and relocation/application based on feasibility of implementation and likelihood of success. The program shall include, at a minimum, an implementation plan, maintenance and monitoring program, estimated completion time, success criteria, and any relevant contingency measures to ensure that no net loss is achieved. The biological resource salvage and restoration plan would be submitted to the County for approval.

Mitigation for Robinson's pepper-grass and San Diego marsh-elder shall include preservation of off-site populations of the species, incorporation of these species within a conceptual upland and wetlands restoration plan, restoration of disturbed areas within the Otay Ranch RMP Preserve, or incorporation into a conceptual wetlands mitigation plan (applies to mitigation for San Diego marsh-elder only). If populations of these species (Robinson's pepper-grass and San Diego marsh-elder) are found within the 350.1 acres of off-site mitigation, preservation of these populations may be used for mitigation instead of restoration activities.

Findings: Development within PV2 and PV3 would result in impacts to variegated dudleya, a narrow endemic, as well as two covered species San Diego goldenstar (County Group A) and barrel cactus (County Group B). As discussed previously, it is not feasible to avoid variegated dudleya within PV3 because this would result in either the loss of developable land and limit the ability to achieve the density and land use policies set forth in both the County's General Plan and the Otay Ranch GDP/SRP, or, if preserved, isolated populations. Therefore, an exception to the avoidance requirement for variegated dudleya, San Diego goldenstar, and barrel cactus is warranted.

Based on the discussion above, the County has determined that the proposed development on PV3 is entitled to the exception for variegated dudleya, San Diego goldenstar and barrel cactus identified in BMO section 86.509(b), and that the exception is the minimum necessary to accommodate the project. With respect to Narrow Endemic Plant Species (Attachment E of Document No. 0769999), or Sensitive Plan Species that meet the criteria of Group A or B, where avoidance is infeasible, encroachment shall not exceed 20% of the population onsite. However, in certain cases where it may be infeasible for a project to meet all the goals and criteria of the BMO, the County may grant an exception to the specific requirements of the ordinance (BMO, § 86.509(b); MSCP Implementing Agreement, §10.13.) Such an exception requires concurrence from the USFWS and the CDFW.[5]

It has been determined that conservation of the onsite populations of variegated dudleya, San Diego goldenstar and barrel cactus is infeasible, that impacting the onsite populations will not compromise the conservation of these species, and that the exception granted by the County is the minimum necessary to accommodate the development. This determination is based, in part, on the fact that the Applicant proposes to transplant the existing variegated dudleya, San Diego goldenstar and San Diego barrel cactus populations (35, 17 and 36 individuals respectively) within designated and protected opens space onsite and to install additional plants at this same location, to create onsite, protected populations of 105 variegated dudleya, 51 San Diego goldenstar and 70 barrel cactus.

Mitigation for variegated dudleya and San Diego goldenstar would be provided at a 3:1 mitigation to impact ratio. Mitigation for Robinson's peppergrass and San Diego barrel cactus would be provided at a 2:1 ratio, while mitigation for San Diego marsh-elder and Munz's sage would be provided at a 1:1 ratio. The Otay Ranch RMP Preserve, which is a component of the MSCP Preserve, associated with the Proposed Project contains the required mitigation for San Diego goldenstar and Munz's sage. With implementation of the mitigation described previously, including translocation as described in the Otay Ranch PEIR and the Otay Ranch Phase II RMP (translocation, additional plantings, establishment within restoration sites, and preservation of populations within the Otay Ranch RMP Preserve), and with the approval of the exception to the avoidance requirement for variegated dudleya, San Diego goldenstar and barrel cactus this criterion is met.

[5] The County notes that the Applicant takes the position that translocation and/or transplantation of narrow endemic plants and Group A and B plants can be used to satisfy the BMO's 80% avoidance requirement.

3. ***Mitigation for Sensitive Plant Species in Groups C and D. Sensitive Plant Species, as defined, in Groups C and D shall be protected by using the design requirements and habitat-based mitigation requirements set forth in Section 86.505 and Section 86.506. Notwithstanding the foregoing, when said design requirements and habitat-based mitigation would have the effect of substantially reducing the viability of the affected population or the species, mitigation shall be in-kind, and the mitigation required will be set at a ratio based on the sensitivity of the species and population size, as determined in a biological analysis approved by the Director***.

   Discussion: Development within PV2 and PV3 would result in impacts to County Group D species (Table 6). Mitigation for County Group D species would be provided through use of and adherence to the design requirements and habitat-based mitigation requirements set forth in Sections 86.505 and 86.506 of the BMO. The Group D species observed within PV2 and PV3 are California Rare Plant Rank 4.1 or 4.2 species and are known to occur in numerous surrounding areas. Direct impacts to these species are not expected to impact their local, long-term survival. Preservation of suitable habitat for these species is present within areas that would be conveyed to the Otay Ranch RMP Preserve; therefore, species-specific and ratio-based mitigation are not required. As demonstrated in Table 6, the areas of preservation within the Project Area (including Otay Ranch RMP Preserve, non-impacted LDA, and areas of Conserved Open Space) would provide preservation of known populations of golden chaetopappa (*Pentachaeta aurea* ssp. *aurea*), Ashy spike-moss (*Selaginella cinerascens*), and San Diego County viguiera (*Viguiera laciniata*).

   Findings: Although development within PV2 and PV3 would result in impacts to County Group D species, these species are known to occur in numerous surrounding areas, and no impacts to their local, long-term survival are expected. Mitigation is provided through preservation of suitable habitat for these species within the Otay Ranch RMP Preserve, which is a component of the MSCP Preserve; therefore, this criterion is met.

2.4.2 Sensitive Animal Populations

1. **Rare, Narrow, Endemic Animal Species. Impacts to Rare, Narrow Endemic Animal Species Within the MSCP subarea (Attachment D of Document No. 0769999 on file with the Clerk of the Board) shall be avoided to the maximum extent practicable. Avoidance requirements shall meet any species specific requirements set forth in Table 3-5 of the MSCP [County Subarea] Plan including any applicable limitations on clearing of occupied habitat. Where complete avoidance is infeasible, projects shall be designed to avoid any significant reduction in species viability.**

   Discussion: The following species listed in Attachment D of the BMO do not have a potential to occur within the Project Area: Pacific pocket mouse (*Perognathus longimembris pacificus*), American peregrine falcon (*Falco peregrinus anatum*), California least tern (*Sternula antillarum browni*), Belding's savannah sparrow (*Passerculus sandwichensis beldingi*), Ridgway's rail (*Rallus obsoletus levipes*), California black rail (*Laterallus jamaicensis coturniculus*), yellow-billed cuckoo (*Coccyzus americanus*), southwestern willow flycatcher (*Empidonax traillii extimus*), coastal cactus wren, least Bell's vireo (*Vireo bellii pusillus*), western pond turtle (*Actinemys marmorata*), arroyo toad (*Anaxyrus californicus*), California red-legged frog (*Rana draytonii*), tidewater goby (*Eucyclogobius newberryi*), and Riverside fairy shrimp (*Streptocephalus woottoni*).

   Two wildlife species, golden eagle and San Diego fairy shrimp (*Branchinecta sandiegonensis*), listed in Attachment D of the BMO are known to occur within the overall Project Area, while one species, burrowing owl (*Athene cunicularia*), has a potential to occur but has not been directly observed. Based on surveys conducted between 2014 and 2016, no occurrences of San Diego fairy shrimp were detected within PV1, PV2, or PV3, and no observations of burrowing owl occurred. Surveys for San Diego fairy shrimp were conducted in road ruts within PV3. There are no vernal pools located within PV1, PV2, and PV3. Although the MSCP identifies San Diego fairy shrimp as a Covered Species, the County has taken the position that, based on a 2006 federal court decision, the plan's protections for this species are inadequate for purposes of providing FESA take coverage. Therefore, impacts to San Diego fairy shrimp or its habitat must be assessed and mitigated on a project-specific basis. The Proposed Project avoids all vernal pools/features that are known to be occupied by San Diego fairy shrimp. Consequently no significant impacts to San Diego fairy shrimp are expected. Nevertheless, the County is requiring a preventative mitigation measures for this species which, if a take permit is required, includes compliance with any permit conditions

required by the USFWS for take of San Diego fairy shrimp. Focused surveys for the Project Area delineated suitable habitat for burrowing owl, but no such suitable habitat occurs within PV1, PV2, or PV3. Preconstruction surveys for burrowing owl will be conducted within the Development Footprint to ensure that these species have not migrated onto PV1, PV2, and PV3. Discussion of golden eagle is addressed in Section 2.2.5.1, Preserve Design Criteria, under Item 8.

Findings: Three species listed in Attachment D of the BMO are known to occur within the overall Project Area or have the potential to occur: San Diego fairy shrimp, burrowing owl, and golden eagle. San Diego fairy shrimp and burrowing owl have not been observed within PV1, PV2, and PV3; consequently no significant impacts to these species are expected. Nevertheless, the County is requiring the following preventative mitigation measures for these species: (i) if a take permit is required for San Diego fairy shrimp, compliance with any permit conditions required by the USFWS; and (ii) preconstruction surveys for burrowing owl within the Development Footprint to ensure that the species has not migrated into areas proposed for grading or other disturbance. Discussion of golden eagle is addressed in Section 2.2.5.1, Preserve Design Criteria, under Item 8. Section 2.2.5.1 provides an analysis of impacts to suitable foraging habitat and preservation of such habitat along with how the development of PV1, PV2, and PV3 do not interfere with the conservation goals for golden eagle as outlined in Table 3-5 of the MSCP Plan. Therefore this criterion is met.

2. **Impacts to Burrowing Owl Habitat**. **Impacts to Burrowing Owl Habitat shall be avoided to the maximum extent practicable. Where impacts are unavoidable, the following mitigation measures shall be required: (1) any impacted individuals must be relocated out of the impact area using passive or active methodologies approved by the Wildlife Agencies; (2) mitigation for impacts to occupied habitat, must be through the conservation of occupied burrowing owl habitat or lands appropriate for restoration, management and enhancement of burrowing owl nesting and foraging requirements at a ratio of no less than 1:1 for the territory of the burrowing owl.**

   Discussion: Burrowing owls were not observed within PV1, PV2, or PV3 during surveys conducted 2014 through 2016. Therefore, PV1, PV2, and PV3 are not currently considered occupied by this species. In addition, these parcels do not contain suitable habitat, as identified in the 2014 habitat assessment, for burrowing owl.

   To ensure that burrowing owl is not impacted by the Proposed Project, the following mitigation measure is required and included in the Otay Ranch Village 14 and Planning Areas 16/19 EIR:

Burrowing Owl Preconstruction Survey. Prior to issuance of any land development permits, including clearing, grubbing, and grading permits, the Proposed Project applicant or its designee shall retain a County of San Diego (County)-approved biologist to conduct focused preconstruction surveys for burrowing owl. The surveys shall be performed no earlier than 30 days prior to the commencement of any clearing, grubbing, or grading activities. If occupied burrows are detected, the County-approved biologist shall prepare a passive relocation mitigation plan subject to review and approval by the Wildlife Agencies (i.e., California Department of Fish and Wildlife and U.S. Fish and Wildlife Service) and the County, including any subsequent burrowing owl relocation plans to avoid impacts from construction-related activities.

Findings: Burrowing owls were not observed within PV1, PV2, or PV3; therefore, these areas are not currently considered occupied by this species. Further, these parcels do not contain suitable habitat for burrowing owl. A preconstruction survey would be conducted to ensure that the Development Footprint does not contain any occupied burrows. With this mitigation measure, the criterion is met.

3. **Impacts to Arroyo Toad Habitat. Impacts to upland habitats within 1 km of riparian habitat which supports or is likely to support Arroyo toad shall be minimized to the maximum extent practicable.**

   Discussion: PV1, PV2, and PV3 do not contain suitable habitat for arroyo toad. A habitat assessment was completed for the Project Area, which includes PV1, PV2, and PV3. It was determined that this species has a low to no potential to occur within the Project Area. The details of this habitat assessment are provided in the Biological Resources Technical Report.

   Findings: PV1, PV2, and PV3 do not contain suitable habitat for arroyo toad; therefore, this species is not expected to occur. This criterion is not applicable to the development of PV1, PV2, and PV3 because there is no suitable habitat for arroyo toad within these areas.

4. **Management Conditions for *Vireo belli pusillus*, Least Bell's Vireo. Conditions shall be developed for projects located adjacent to least Bell's vireo habitat to monitor and control the population of brown-headed cowbirds.**

   Discussion: PV1, PV2, and PV3 neither contain suitable riparian habitat for least Bell's vireo nor are located adjacent to suitable riparian habitat.

Findings: PV1, PV2, and PV3 neither contain suitable habitat for least Bell's vireo nor are located adjacent to suitable habitat. This criterion is not applicable to the development of PV1, PV2, and PV3 because there is no suitable riparian habitat within these areas.

5. ***Other Sensitive Animal Species. For other Sensitive animal species as defined in Section 86.508, impacts will be mitigated through habitat based mitigation requirements as set forth in Section 86.506. In any case in which mitigation would have the effect of substantially reducing the viability of the affected population or the species, mitigation shall be in kind and the mitigation required will be set at a ratio based on the sensitivity of the species and the population size, as determined in a biological analysis approved by the Director.***

Discussion: The BMO requires that impacts to other sensitive species, as defined in Section 86.508, be mitigated through habitat mitigation requirements as set forth in Section 86.506. Impacts to suitable habitat for other sensitive species not listed in Attachment D of the BMO from development of PV1, PV2, or PV3 include known observations for western spadefoot (*Spea hammondii*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), coastal California gnatcatcher (see Section 2.2.5.1, Item 6), California horned lark (*Eremophila alpestris actia*), white-tailed kite (*Elanus leucurus*), and San Diegan tiger whiptail (*Aspidoscelis tigris stejnegeri*). Other sensitive species with a potential to occur in these areas include orangethroat whiptail, San Diego banded gecko (*Coleonyx variegatus abbotti*), red diamond rattlesnake (*Crotalus ruber*), rosy boa (*Lichanura trivirgata*), Blainville's horned lizard, Coronado skink (*Plestiodon skiltonianus interparietalis*), Cooper's hawk (foraging habitat only), Southern California rufous-crowned sparrow, grasshopper sparrow (*Ammodramus savannarum;* nesting), Bell's sage sparrow (*Artemisiospiza belli belli*), long-eared owl (*Asio otus*), red-shouldered hawk (*Buteo lineatus*; foraging habitat only), turkey vulture (*Cathartes aura*; foraging habitat only), northern harrier (*Circus cyaneus*; foraging only), loggerhead shrike (*Lanius ludovicianus*; nesting and foraging habitat), western bluebird (*Sialia mexicana*), common barn-owl (*Tyto alba*), pallid bat (*Antrozous pallidus*), western mastiff bat (*Eumops perotis californicus*), Yuma myotis (*Myotis yumanensis*), San Diego desert woodrat (*Neotoma lepida intermedia*), big free-tailed bat (*Nyctinomops macrotis*), mule deer, cougar, American badger, Hermes copper butterfly, and Quino checkerspot butterfly. Impacts to suitable habitat for these species would be mitigated through preservation of habitat as described in Section 2.3, Section 86.506 – Habitat-Based Mitigation, and Section 2.2.5.1, Item 2, of this BMO Findings Report. The following additional mitigation measures, as described further in the Otay Ranch Village 14 and

Planning Areas 16/19 EIR and summarized here, would be implemented to reduce impacts to these species:

1. Biological monitoring would be required to prevent disturbance to areas outside the limits of grading. Prominently colored temporary fencing and signage would be installed prior to construction wherever the limits of grading are adjacent to Otay Ranch RMP Preserve, Conserved Open Space, and other sensitive biological resources.
2. To protect the Otay Ranch RMP Preserve from unauthorized entry or disturbance, permanent signage and fencing would be placed, as needed, around the perimeter of the Otay Ranch RMP Preserve and Conserved Open Space.
3. To avoid any direct impacts to raptors and/or any migratory birds protected under the Migratory Bird Treaty Act, removal of habitat that supports active nests on the proposed area of disturbance should occur, outside of the nesting season for these species (January 15 to August 15, annually). If removal of habitat on the proposed area of disturbance must occur during the nesting season, the applicant shall retain a County-approved biologist to conduct a preconstruction survey to determine the presence or absence of nesting birds on the proposed area of disturbance. If nests are present then an appropriate buffer surrounding the nest would be established until nesting is complete.
4. If take authorization is required for impacts to Quino checkerspot butterfly, the Applicant will comply with any and all conditions, including preconstruction surveys, that the USFWS may require for take of Quino checkerspot butterfly pursuant to the FESA. Preconstruction survey will be conducted in accordance with USFWS protocols unless the USFWS authorizes a deviation from those protocols. Take may also be obtained through the County of San Diego Multiple Species Conservation Program Subarea Plan Quino Checkerspot Butterfly Addition, if/when approved. If the Quino checkerspot butterfly is included as an addition to the South County MSCP, and the Applicant seeks take under the Quino Addition, the Applicant will comply with any and all conditions for Quino checkerspot butterfly.
5. If take authorization is required for impacts to San Diego fairy shrimp the Proposed Project, the Applicant will comply with any and all conditions, including preconstruction surveys, that the USFWS may require for take pursuant to the FESA.
6. To ensure that no burrowing owls have migrated into the Development Footprint, a preconstruction burrowing owl survey would be conducted.

7. No clearing, grading, or grubbing activities may occur within habitat identified by a qualified biologist as being occupied by coastal California gnatcatcher during the nesting season for the species (February 15 to August 15, annually). If construction must occur during the nesting season, a nesting survey for coastal California gnatcatcher shall be conducted prior to the onset of construction. Construction-related noise levels in coastal California gnatcatcher-occupied habitat within 500 feet of construction activity would not exceed 60 dBA L_{eq} or preconstruction ambient noise levels, whichever is greater. Project construction within 500 feet of occupied habitat will occur outside of the breeding season if possible. If necessary, construction activities during the breeding season would be managed to limit noise levels in occupied habitat within 500 feet of the Proposed Project or noise attenuation measures, such as temporary sound walls, would be implemented to reduce noise levels below 60 dBA L_{eq} or below existing ambient noise levels, whichever is greater.

   Lighting of all developed areas adjacent to the Preserve shall be directed away from the Preserve, wherever feasible and consistent with public safety. Where necessary, development shall provide adequate shielding with non-invasive plant materials (preferably native), berming, and/or other methods to protect the Preserve and sensitive species from night lighting.

   Specific to Quino checkerspot butterfly, prior to the issuance of the first grading permit that impacts habitat identified as suitable for Quino checkerspot butterfly, the Proposed Project shall demonstrate to the satisfaction of the Director of Planning and Development Services (or his/her designee) that it has secured from the USFWS any necessary take authorization for Quino checkerspot butterfly through (1) the Section 7 Consultation, (2) Section 10 incidental take permit requirements, or (3) the County Subarea Plan Quino Checkerspot Butterfly Addition, if/when approved. In addition, prior to the issuance of the first grading permit that impacts habitat identified as suitable for Quino checkerspot butterfly, the Proposed Project shall prepare a long-term Quino Checkerspot Butterfly Management/Enhancement Plan.

Findings: PV1, PV2, and PV3 would result in impacts to habitat for other sensitive animal species as defined in Section 86.508. Impacts to suitable habitat for these species would be mitigated through preservation of habitat as described in Section 2.3 and Section 2.2.5.1, Item 2, of this BMO Findings Report. Additional measures, as outlined previously, would be provided to reduce impacts to sensitive animal species. Therefore, this criterion is met.

2.4.3 Vernal Pools

Impacts to vernal pools and their watersheds in naturally occurring complexes and wetlands shall be avoided to the maximum extent practicable.

Discussion: Based on surveys conducted between 2014 and 2016, PV1, PV2, and PV3 do not contain vernal pools.

Findings: This criterion is not applicable to development of PV1, PV2, and PV3 because these areas do not contain vernal pools.

2.4.4 Grading Limitations for Specific Species

The following limitations shall apply to grading activities in areas where the identified species occur:

a. Coastal cactus wren – No clearing of occupied habitat shall occur between February 15 and August 15.

b. Coastal California gnatcatcher – No clearing of occupied habitat shall occur between March 1 and August 15.

c. Least Bell's vireo – No clearing of occupied habitat shall occur between March 15 and September 15.

d. Southwestern willow flycatcher – No clearing of occupied habitat shall occur between May 1 and September 2.

Discussion: Only one species, coastal California gnatcatcher, listed within this criterion has a potential to nest within PV1, PV2, and PV3. As stated in Section 2.4.2, no clearing, grading, or grubbing activities may occur within habitat identified by a qualified biologist as being occupied by coastal California gnatcatcher during the nesting season for the species (February 15 to August 15, annually). Specific to coastal California gnatcatcher and nesting raptors, construction-related noise levels in coastal California gnatcatcher-occupied habitat within 500 feet of construction activity would not exceed 60 dBA L_{eq} or preconstruction ambient noise levels, whichever is greater. Project construction within 500 feet of occupied habitat will occur outside of the breeding season if possible. If necessary, construction activities during the breeding season would be managed to limit noise levels in occupied habitat within 500 feet of the Proposed Project, or noise attenuation measures, such as temporary sound walls, would be implemented to reduce noise levels below 60 dBA L_{eq} or below existing ambient noise levels, whichever is greater.

Finding: As discussed previously, the Proposed Project would adhere to the mitigation measure that reduces impacts to nesting coastal California gnatcatcher. No other species listed in this criterion have a potential to occur within PV1, PV, or PV3. Therefore, this criterion is met.

2.4.5 Other Species Specific Condition Requirements

As set forth in the terms of the MSCP [County Subarea] Plan and/or Subarea Plan, project applicants shall be required to comply with other applicable species specific conditions set forth in Table 3-5 of the MSCP [County Subarea] Plan as a condition of project approval.

Discussion Specific to PV1, PV2, and PV3: The Proposed Project, which includes PV1, PV2, and PV3, would comply with other applicable species-specific conditions set forth in Table 3-5 of the MSCP Plan as a condition of project approval, as discussed previously in Section 2.2.5.1 (Item 8).

Discussion in the Context of the RMP Preserve: The Development Footprint of PV1, PV2, and PV3 would be consistent with the Otay Ranch RMP Preserve footprint established by the Otay Ranch GDP/SRP and Otay Ranch RMP. Accordingly, PV1, PV2, and PV3 implement the Preserve footprint contemplated by the 11,375-acre Otay Ranch RMP Preserve as depicted in the Otay Ranch RMP. This Preserve footprint, in turn, would be consistent with the hardline Preserve referenced in the MSCP County Subarea Plan Implementing Agreement, which required the County to contribute the 11,375-acre Otay Ranch RMP Preserve as mitigation (USFWS et al. 1998, pp. 29–30). PV1, PV2, and PV3 and their proposed Preserve footprint would be consistent with the Implementing Agreement; therefore, the PV1, PV2, and PV3 Development Footprint does not jeopardize the continued survival of the 85 Covered Species within the dedicated Otay Ranch RMP Preserve. Because the boundaries and total acreage of the MSCP Preserve approved by the Implementing Agreement and the County Subarea Plan (County of San Diego 1997) would not change with development of PV1, PV2, and PV3, the functionality of the existing MSCP Preserve design would be maintained. The Biological Resources Technical Report for the Proposed Project provides additional detail on how the Proposed Project complies with any applicable species-specific conditions forth in Table 3-5 of the MSCP Plan. Examples include not placing development within 4,000 feet of an occupied golden eagle nest, protecting against edge effects, minimizing impacts to sensitive birds during the nesting season, and maintaining wildlife corridors.

Findings: The Proposed Project, which includes PV1, PV2, and PV3 would comply with other applicable species specific conditions set forth in Table 3-5 of the MSCP Plan as a condition of project approval as discussed previously in Section 2.2.5.1 (Item 8) and summarized above. Therefore, this criterion is met.

2.5 Conclusion

This BMO Findings Report focuses specifically on the areas known as PV1, PV2, and PV3 within the Proposed Project. The BMO analysis and findings outline how development proposed for PV1, PV2, and PV3 would conform to the criteria and objectives of the BMO. Although development of these parcels would result in some loss of habitat for sensitive wildlife species and populations of sensitive plant species, development of PV1, PV2, and PV3 would satisfy the criteria as analyzed in the BMO.

The Otay Ranch RMP Preserve boundaries would not be changed by development of PV1, PV2, and PV3, and the functionality of the Otay Ranch RMP Preserve and the existing habitat linkages and corridors would remain intact. It should be noted that the Otay Ranch RMP Preserve is considered a component of the MSCP Preserve. Mitigation for development impacts to PV1, PV2, and PV3, as calculated by the BMO requirements, would result in the conveyance of 228.1 acres of in-kind habitat to the Otay Ranch RMP Preserve. Note that the 228.1 acres of BMO-calculated mitigation for PV1, PV2, and PV3 exceeds the 1.188 Otay Ranch RMP Preserve Conveyance Obligation by approximately 24.6 acres (171.3 acres of impacts mitigated at the 1.188 ratio totals 203.5 acres). The 228.1 acres of required mitigation would be met through the Proposed Project's overall conveyance of 776.8 acres of habitat to the Otay Ranch RMP Preserve and preservation of 72.4 acres of additional habitat designated as Conserved Open Space for a total of 849.2 acres.

Conveyance and preservation of 849.2 acres of land offsets the loss of habitat for sensitive wildlife species and populations of sensitive plant species. Additional mitigation required for impacts to sensitive plants would be provided through on-site preservation or restoration/translocation. The loss of 0.39 acres of unvegetated stream channels would be mitigated at a minimum of 1:1 replacement-to-impact ratio, and the Proposed Project would be required to obtain the required ACOE, RWQCB, and CDFW permits. Therefore, with the implementation of the previously mentioned mitigation, the proposed development within PV1, PV2, and PV3 would be in compliance with the measures set forth in the BMO.

The Development Footprint of PV1, PV2, and PV3 would be consistent with the Otay Ranch RMP Preserve footprint established by the Otay Ranch GDP/SRP and Otay Ranch RMP. Accordingly, PV1, PV2, and PV3 implement the Preserve footprint contemplated by the 11,375-acre Otay Ranch RMP Preserve as depicted in the Otay Ranch RMP. This Preserve footprint, in turn, would be consistent with the hardline Preserve referenced in the County of San Diego MSCP Subarea Plan Implementing Agreement, which required the County to contribute the 11,375-acre Otay Ranch Preserve as mitigation (USFWS et al. 1998, pp. 29–30). Thus, PV1, PV2, and PV3 and their proposed Preserve footprint would be consistent with the Implementing

Agreement; therefore, the PV1, PV2, and PV3 Development Footprint would not jeopardize the continued survival of the 85 Covered Species within the dedicated Otay Ranch RMP Preserve. Because the boundaries and total acreage of the MSCP Preserve designated by the Implementing Agreement and the County Subarea Plan (County of San Diego 1997) would not change with development of PV1, PV2, and PV3, the functionality of the existing MSCP Preserve design would be maintained.

3 GLOSSARY

Proposed Project

The "Proposed Project" reflects the applicant's ownership within Village 14 and Planning Areas 16/19 (1,283.6 acres). Other than off-site impacts described below, the Proposed Project specifically excludes CDFW's ownership in Village 14 and Planning Areas 16/19, which remains designated for development per the County's General Plan and the Otay Ranch GDP/SRP. The underlying County General Plan and Otay Ranch GDP/SRP land uses on CDFW property would remain unchanged. In addition, there is an area of Village 14 commonly known as the Inverted L, which is excluded from the Proposed Project because it is not owned by the applicant, was acquired by the USFWS and Otay Water District for conservation purposes, and is located in the City of Chula Vista.

Project Area

The "Project Area" is the applicant's ownership located within Otay Ranch Village 14 and Planning Areas 16/19, in addition to off-site improvements for infrastructure. The Project Area covers approximately 1,283.6 acres owned by the applicant and approximately 85.4 acres of off-site improvements, for a total of 1,369.0 acres. The 85.4 acres of off-site improvement areas lie within: (1) the City of San Diego MSCP Subarea Plan's Cornerstone Lands (33.7 acres), and is thus within San Diego's ownership and land use jurisdiction; (2) the City of Chula Vista's MSCP Subarea Plan (5.4 acres); (3) CDFW's ownership within Otay Ranch (45.2 acres); (4) County Proctor Valley Road easement (0.3 acres), and (5) private ownership (0.8 acres).

Development Footprint

The "Development Footprint" includes areas where there would be either permanent or temporary ground disturbance. In addition, areas of open space, which would be managed by a homeowners' association (private homeowner's association open space), are included in the Development Footprint. The Development Footprint includes all on-site development, off-site improvements, graded LDA, and impacts resulting from infrastructure and other allowable uses within the Otay Ranch RMP and MSCP Preserve according to Section 1.9.3 of the MSCP County Subarea Plan. The Development Footprint also includes areas of fuel modification.

Otay Ranch RMP Preserve

The Otay Ranch RMP Preserve includes those areas shown as part of the 11,375-acre Preserve in Exhibit 24 of the Otay Ranch RMP, which is also referenced in the County of San Diego MSCP Subarea Plan Implementing Agreement, which defines the County's required contribution to the

MSCP Preserve. The Otay Ranch RMP provides for the conservation and management of the entire 11,375-acre Otay Ranch RMP Preserve. The Implementing Agreement states that the required mitigation for Otay Ranch includes "protection of the areas identified as preserved in the boundaries of the Otay Ranch project including approximately 11,375 acres" of the Otay Ranch RMP Preserve (USFWS et al. 1998). Therefore, the Otay Ranch RMP Preserve is a subset of the MSCP Preserve. The portion of the Proposed Project's land use designated Otay Ranch RMP Preserve is, therefore, referred to as the Otay Ranch RMP Preserve, which includes 270.2 acres in Village 14 and 156.5 acres in Planning Areas 16/19, for a total of 426.7 acres.

Conserved Open Space

Areas of Conserved Open Space would be preserved on site and would be added to the Otay Ranch RMP Preserve, given to the City of San Diego to mitigate for impacts to City of San Diego MSCP Cornerstone Lands, or managed under a separate RMP through the County open space easement. The approximately 72.4 acres of Conserved Open Space within the Project Area is composed of 31.9 acres within the 127.1 acres of LDA land use designation and 3.6 acres within designated development in Planning Areas 16/19 and 36.9 acres of residential land use designation within Village 14. All areas of Conserved Open Space areas are located adjacent to Otay Ranch RMP Preserve. There are 20.1 acres of Conserved Open Space in PV2 and PV3.

Limited Development Areas

LDA is a defined land use designation in the Otay Ranch GDP/SRP which states, "An open space easement would cover the areas designated as 'Limited Development Area'... These areas would be left as natural open space with the exception that roads and utilities are anticipated to cross or lie within these areas... LDAs may be included within private lots but would have the following set of restrictions. Removal of native vegetation would be prohibited except as necessary for construction of roads and utilities. There would be no buildings or other structure, agriculture, landscaping, livestock, grazing, horses, trash disposal or fences allowed within these areas" (City of Chula Vista and County of San Diego 2015a). Fuel modification is allowed in the LDA as "brushing for fire control zones would conform to the local fire district regulations" (City of Chula Vista and County of San Diego 2015a). A total of 127.1 acres of LDA is in Planning Areas 16/19, and there is no LDA in Village 14. Of the 127.1 acres of LDA, 31.9 acres would be designated as Conserved Open Space with an open space easement placed over the land. Since this 31.9 acres would be used for mitigation of project impacts, the easement would exclude the placement of roads and utilities specifically within these areas. A small portion of LDA would be graded for access roads (12.6~~11.8~~ acres). The remaining 82.7~~83.4~~ acres of LDA that would not be impacted by the Proposed Project is termed "non-graded LDA."

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APPENDIX A

Review of Impacts and Mitigation for Variegated Dudleya, Barrel Cactus and San Diego Goldenstar

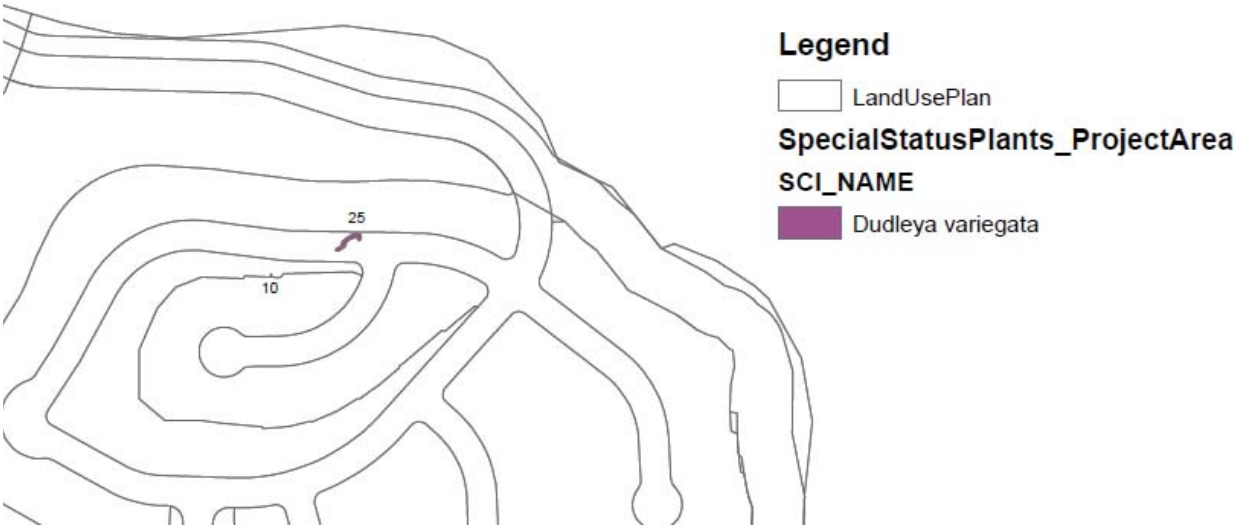
APPENDIX A
Review of Impacts and Mitigation for Variegated Dudleya, San Diego Barrel Cactus and San Diego Goldenstar

The development of PV3, with onsite translocation and mitigation, would not exceed the allowable impacts to one narrow endemic, variegated dudleya (*Dudleya variegata*; County Group A), and two other covered species, San Diego goldenstar (*Bloomeria clevelandii*; County Group A) and San Diego barrel cactus (*Ferocactus viridescens;* County Group B), (see Figure 1) as set forth in Section 86.507 of the Biological Mitigation Ordinance (BMO). Section 86.507 states the following regarding avoidance of sensitive plants:

> Impacts to Narrow Endemic Plant Species Within the MSCP Subarea (Attachment E of Document No. 0769999 on file with the Clerk of the Board), or Sensitive Plant Species, as defined, that meet the criteria in Group A or B shall be avoided to the maximum extent practicable. Where complete avoidance is infeasible, encroachment may be authorized depending on the sensitivity of the individual species and the size of the population except that encroachment shall not exceed 20% of the population on-site. Where impacts are allowed, in-kind preservation shall be required at a 1:1 to 3:1 ratio depending on the sensitivity of the species and population size, as determined in a biological analysis approved by the Director.

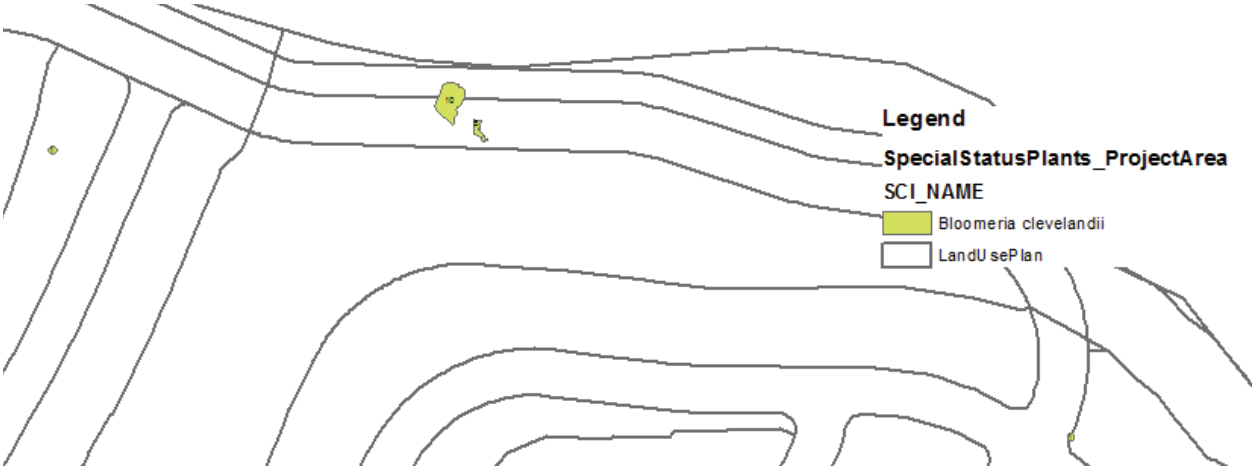
Two small populations of variegated dudleya were observed within PV3: 25 plants were observed within one population, and 10 plants were observed in the other (Exhibit A). All 35 individuals would be impacted by development within PV3.

Exhibit A: Variegated Dudleya Locations within PV3



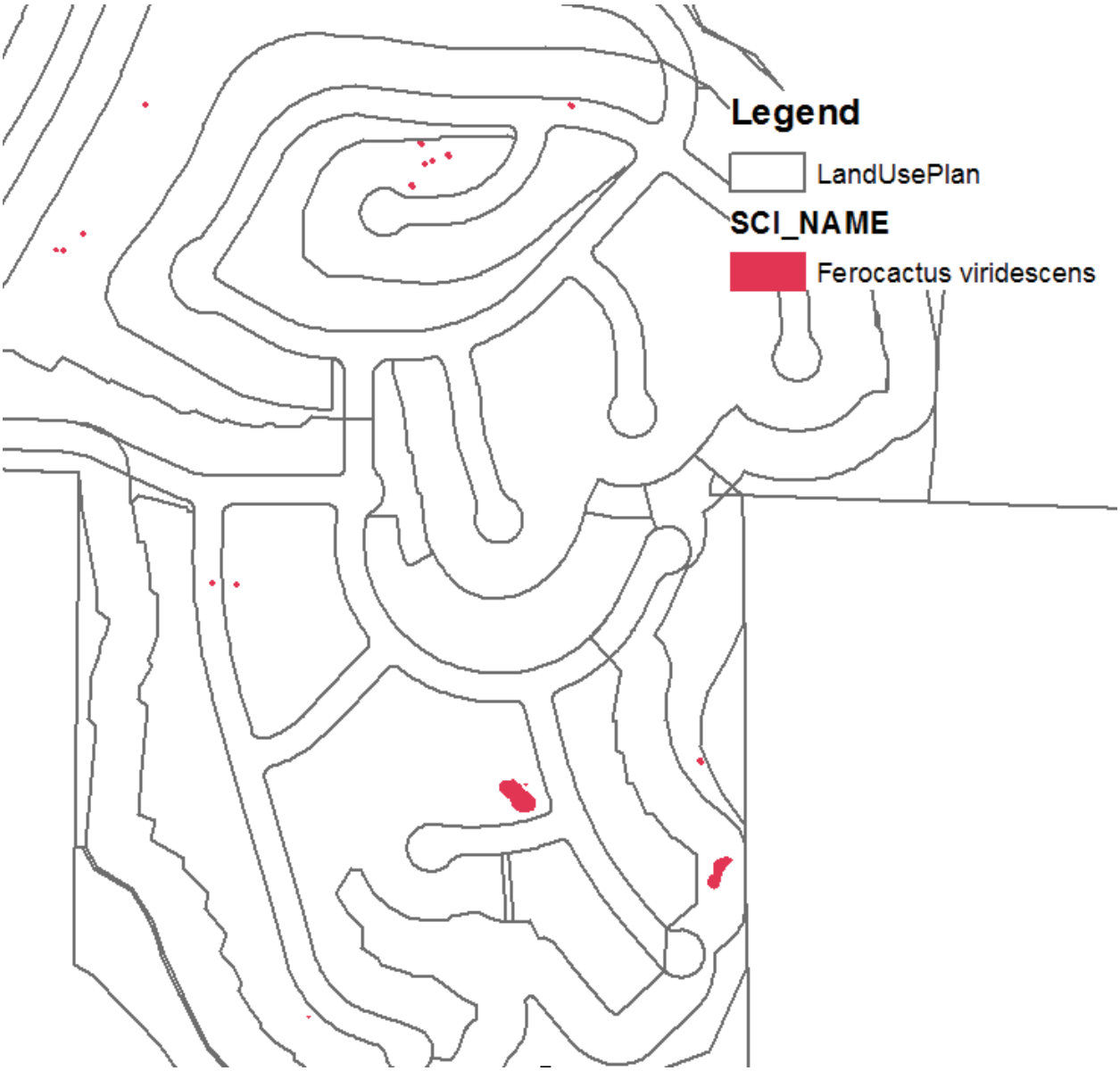
Four populations of San Diego goldenstar, which total 17 plants, would be impacted by the development of PV3 (Exhibit B). Compared to the rest of the Project Area, these populations are small and isolated from larger populations. This species is found throughout the overall Project Area in large quantities. Specifically, conveyance to the Otay Ranch RMP Preserve would preserve 2,902 individuals of the species, and an additional 688 individuals would be preserved through Conserved Open Space. Another 577 individuals within non-graded LDA would not be impacted by the Proposed Project.

Exhibit B: San Diego Goldenstar Locations within PV3



A total of 36 San Diego barrel cactus individuals would be impacted by development in PV3. Barrel cactus populations are scattered throughout PV3 in small populations (Exhibit C).

Exhibit C: San Diego Barrel Cactus Locations within PV3



Redesigning the Development Footprint in order to adhere to the 20% impact restrictionwould result in isolated populations of these sensitive plants. Impacts to variegated dudleya, San Diego goldenstar and San Diego barrel cactus will be minimized through transplantation of individuals from areas that are proposed for development into the Conserved Open Space onsite in PV3. The populations will be transplanted to the Conserved Open Space and has been acceptable mitigation to satisfy the no-net-loss criteria in prior County BMO Findings. Additional plants would be installed at the translocation site to achieve a 3:1 and 2:1 mitigation to impact ratio. Transplanting the existing variegated dudleya, San Diego goldenstar and San Diego barrel cactus populations (35, 17 and 36 individuals respectively) within designated and protected opens space onsite and installing additional plants at this same location, would create onsite, protected populations of 105 variegated dudleya, 51 San Diego goldenstar and 70 barrel cactus.

Based on a review of site conditions, including vegetation communities, soil types, slope and aspect, the Conserved Open Space within PV3 appears have suitable locations for establishing each of these species. The Conserved Open Space within PV3 contains similar soil conditions and vegetation communities to the location where this species occurs within the Development Footprint of PV3. Critical to determining the suitability of a site is acknowledging that soils are a key feature of their habitat and that the receptor site would need to be modified to create appropriate soil conditions for survival and establishment of these species. Therefore, incorporating soil salvage and placement is imperative. Translocation of variegated dudleya and San Diego goldenstar would require soil block salvage and placement into the area of Conserved Open Space. Translocation of barrel cactus would require salvaging and planting cacti plants in suitable soils and habitat. Specific translocation sites within the PV3 Conserved Open Space will be determined based on field surveys. The Otay Ranch PEIR states that translocation is a required component of mitigation for sensitive plant species and specifically variegated dudleya (see Table 3.3-11 of the PEIR). In addition, the Phase II RMP states the following regarding variegated dudleya; “The project preserves 75% of this species on site, including representative populations from each of the three large parcels that comprise the Otay Ranch. In addition, all impacted plants are to be transplanted to appropriate habitat and clay soils within the same parcel. The Otay Ranch PEIR concluded that impacts to this species have been reduced to below a level of significance”.

The translocation effort would help meet the Otay Ranch RMP and MSCP Table 3-5 goals for these species and would not result in a greater than 20% loss of the variegated dudleya, San Diego goldenstar and barrel cactus within PV3. While there will be some loss of sensitive habitat associated with development of PV3, that loss has been limited and therefore meets the standards set forth in the BMO and appropriate mitigation measures have been included in the Proposed Project. The translocation mitigation would, in fact, contribute more to the preserved populations of these species than avoidance. Assuming an 80% survival rate, the variegated dudleya population in PV3 would increase from 35 to 84 plants, San Diego goldenstar would increase

from 17 to 41 plants and San Diego barrel cactus would increase from 36 to 56 plants. Since the mitigation for variegated dudleya, San Diego goldenstar and San Diego barrel cactus would ensure no-net-loss of the populations within PV3, and would result in a new population being introduced to the Otay Ranch RMP/MSCP Preserve, the development of PV3 meets the requirements set forth in the BMO.

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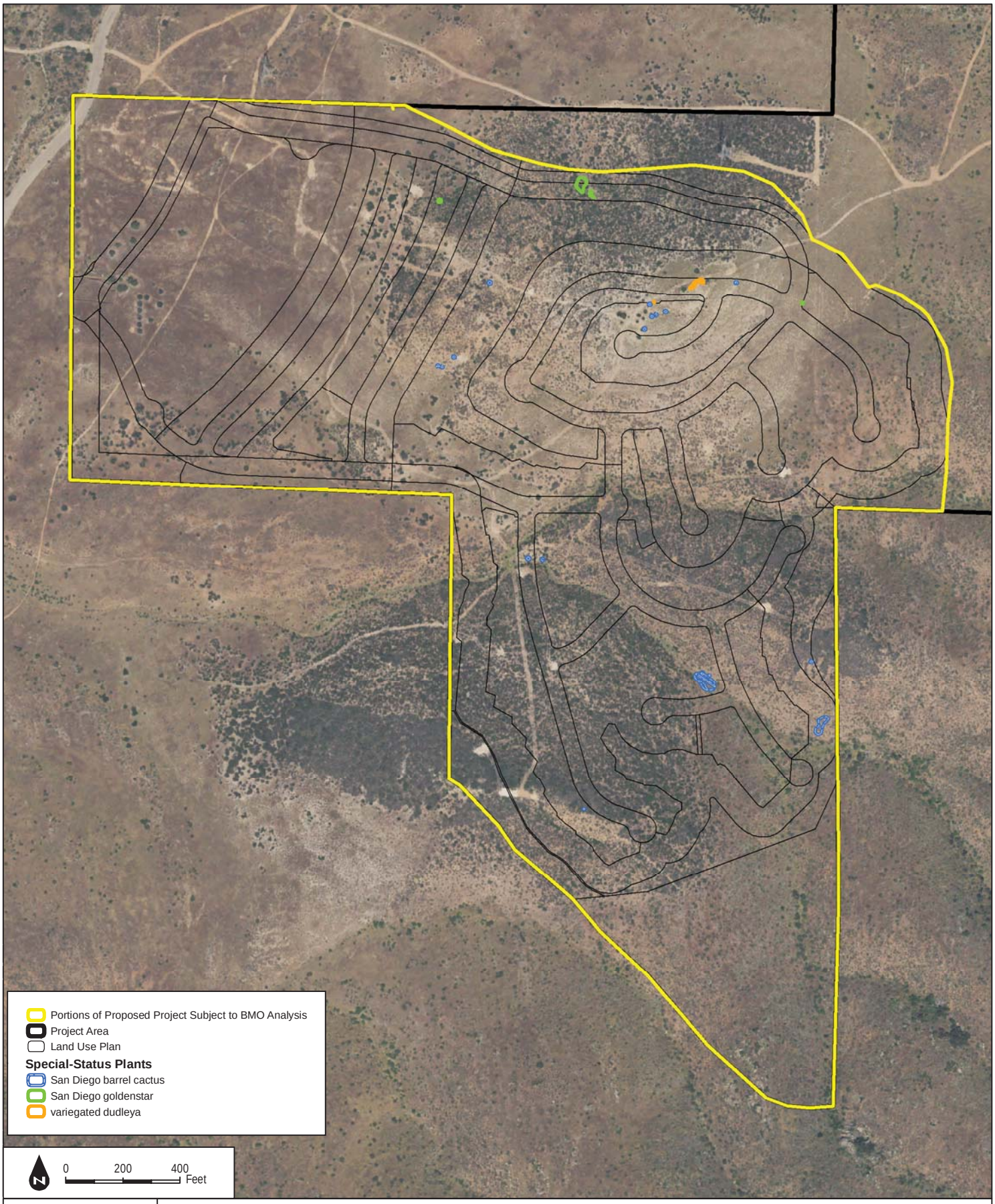

SOURCE: NAIP 2016; Hunsaker 2017

DUDEK

FIGURE 1

Special-Status Plant Occurrences

Otay Ranch Village 14 and Planning Areas 16/19

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APPENDIX B

Addendum to Final EIR No. 91-03 for Salt Creek Ranch Sectional Planning Area Plan; City of Chula Vista's Final Map 14756A and Letter Agreement between USFWS, CDFW, City of Chula Vista and Pacific Bay Homes dated July 19, 2001

Rolling Hills Ranch
In conjunction with the City of Chula Vista MSCP Subarea Plan, all parties agree to the following:

1. Pacific Bay will implement the "Proposed Alternative" project, dated 5/8/01, prepared by Helix Environmental Planning, presented to the Resource Agencies and City. This plan, described generally, eliminates all development within Neighborhood 13, adds a small development area north of Neighborhood 12, and transfers lost density into Neighborhood 9, and is attached and incorporated herein as Exhibit "A".
2. Along the western edge of Neighborhood 11 Street YYYY (from approximately Lots 19-25) will be moved easterly. Pacific Bay will be allowed to grade steeper slopes, no steeper than 2:1, on the rear portion of the lots across Street YYYY from Lots 19 through 25 in order to preserve the developability of lots on both sides of the road. These changes will result in the loss of Lot 19. Provided however, grading within the area of former Lot 19 shall be kept to the minimum extent necessary to allow the support of Street YYYY and adjacent lots, in order to maximize the protection of tarplant.
3. The brush management protocol adjacent to Lots 19 through 25 in Neighborhood 11 and Lots 69 through 75 in Neighborhood 12 will be amended to allow for selective thinning to minimize impacts to narrow endemic species.
4. The project will be revised to preserve additional tarplant through the elimination of lots 9 through 12 in Neighborhood 11. No changes to the alignment of Street YYYY adjacent to these lots will be required. Chain link fencing will be allowed around the detention basin.
5. In the internal, open space corridor between Neighborhoods 9 and 10A, and Neighborhoods 11 and 12 ("Internal Open Space Area"), a tarplant management program will be established. The program will be funded by a non-wasting endowment, to be provided by Pacific Bay, in the amount of $100,000. The Internal Open Space Area will be designated as a Tarplant Management Area ("TMA") in the Subarea Plan. The TMA will be managed by a qualified preserve manager to be approved by the City after consultation with the Wildlife Agencies. The Internal Open Space area will not be considered part of the MSCP Preserve, but will be credited as a component of onsite conservation for the Project.
6. Topsoil containing tar plant will be moved from development areas in Neighborhood 11 to the graded slopes in the Internal Open Space Area, in conjunction with the grading operation for the adjacent Neighborhoods.
7. The Project will be revised to preserve additional dudleya and provide ridge top connectivity along the easterly edge of the west ridge in Neighborhood 12. The reconfigured plan will be limited to redesign of Lots of 69 through 75 with loss of 6 to 7 lots per the Tentative Map configuration.
8. Pacific Bay will provide offsite mitigation for tarplant to include: (1) preservation of 5.8 acres (containing approximately 15,080 plants) within the San Miguel Mitigation

Bank; and, (2) conservation of 10 acres containing a minimum of 15,000 plants in a location within the MSCP Preserve.

9. No further mitigation requirements for non-wetland MSCP Covered Species will be required by the Resource Agencies as part of the 1603 Agreement and/or 404 Permit for the project, provided however wetland-dependent species will be addressed in accordance with Section 4.2.4 of the Subarea Plan.

10. Proctor Valley Road shall be allowed to be realigned within the Project to avoid impact to the San Diego Cornerstone Lands, with no further mitigation to Narrow Endemics or other MSCP Covered Species.

11. Pacific Bay is not obligated to construct the reach of Proctor Valley Road from immediately east of the easternmost entrance into Neighborhood 9 to the eastern subdivision boundary ("Easternmost Reach"). Pacific Bay will grant a floating easement for the future alignment of this road, as determined the City. In lieu of Pacific Bay's obligation to construct the Easternmost Reach, Pacific Bay will provide equivalent funding for off-site T-DIF improvements to be determined by the City through the Traffic Enhancement Program.

12. The aforementioned revisions shall be implemented in conjunction with a Substantial Conformance determination to be made by the City of Chula Vista upon approval by the City Council of the Subarea Plan that incorporates this agreement. The details of the mitigation conditions contained herein shall be incorporated into the Mitigation Monitoring and Reporting Program for the Project with approval of the City.

13. The provisions of this agreement represent the total mitigation package for the Rolling Hills Ranch Project, notwithstanding paragraph number 9 above. The Project shall receive hardline coverage under the MSCP Subarea Plan, contingent only on compliance with the above as well as the provisions of the MSCP Subarea Plan.

Agreed and accepted:

7/19/01

7/19/01

7/19/01

7/19/01

APPENDIX C

Golden Eagle Analysis Reference Documents

DUDEK

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MEMORANDUM

To: Mark Slovick, County of San Diego
From: Patricia Schuyler, Dudek
Cc: Greg Mattson, Susan Harris, and Kim Davis County of San Diego
Liz Jackson, Jim Jackson, and Rob Cameron, Jackson Pendo Development
Subject: Multiple Species Conservation Program – Golden Eagle Habitat Analysis (Draft)
Date: May 31, 2016 (Data Prepared by Dudek on December 11, 2015)
July 8, 2016 Updated and Revised
September 15, 2017 Updated and Revised

Question: How is the Multiple Species Conservation Program (MSCP) and County of San Diego (County) Subarea Plan performing with respect to the 53% preservation goal of foraging habitat for golden eagle (*Aquila chrysaetos*)?

Answer: Taking into consideration the MSCP Preserve assembled as of October 2015, plus the MSCP remaining Preserve, the MSCP Plan is projected to exceed golden eagle 53% habitat preservation by approximately 15,600 acres within the original Multi-Habitat Planning Area (MHPA), and by more than 35,500 acres total (Table 1). The County's Subarea Plan is projected to exceed its 54% golden eagle habitat preservation goal by approximately 9,900 acres within the MHPA, and by more than 28,000 acres total.

Table 1
Summary of Golden Eagle Habitat Preserved and
Total Estimated MSCP Preserve at Buildout

Golden Eagle MSCP Habitat Analysis	Overall MSCP Golden Eagle Habitat Preservation (acres)	County Subarea Golden Eagle Habitat Preservation (acres)
1. Total MSCP Golden Eagle Habitat (Tables 2&3)	264,448 (100%)	169,879 (100%)
2. MSCP Target Preserve Habitat (Tables 2&3)	140,130 (53%)	91,107 (54%)
3. Preserved Inside MSCP MHPA as of October 2015 (Tables 4&5)	90,856	65,615
4. Remaining Preserve to be Assembled (Tables 6&7)	64,878	35,356
5. Total MSCP Preserve at Buildout (Inside MHPA) (Lines 3+4)	*155,734* (59%)	*100,971* (59%)
6. Increase in MSCP Preserve Habitat (Lines 5-2)	15,604	9,864
7. Increase in Golden Eagle Habitat Outside MHPA (Tables 4&5)	*19,941*	*18,304*
8. Total Increase in Golden Eagle Habitat (Lines 6+7)	35,545	28,168
Total Estimated MSCP Preserve at Buildout (Lines 5+7)	**175,675 (66%)**	**119,275 (70%)**

Background

Table 3-5 in the MSCP Plan states that 53% of potential foraging/nesting habitat (coastal sage scrub, chaparral, grassland, and oak woodland) (approximately 139,000 acres) would be conserved with implementation of the Plan. At the time the Plan was adopted, the MSCP planning area included 264,689 acres of habitat suitable[1] for golden eagle foraging (Table 3-3 of the MSCP Plan). Thus, to meet the MSCP Plan's objective of conserving 53% of golden eagle foraging habitat in the planning area, approximately 139,000 acres (Table 3-3 of the MSCP Plan) of such habitat must ultimately be brought into the Preserve system.

With respect to the County's Subarea Plan (1997), the Biological Opinion outlined a conservation level of 54% of potential foraging habitat (i.e., 91,397 of 170,416 acres, as identified in the Subarea Plan). Thus, to meet the County's Subarea Plan's objective, approximately 91,397 acres of golden eagle foraging habitat must ultimately be brought into the Preserve system.

Methodology

1. Using GIS software, Dudek overlaid the MSCP Plan boundary with the vegetation mapping used for the entire San Diego County MSCP mapping effort (SANDAG 1995) to determine the amount of suitable habitat within the MSCP Plan area and the County Subarea Plan. This was used to confirm that the acreages within the San Diego Association of Governments (SANDAG) data match the acreage presented Table 3-3 of the MSCP Plan so that this data can be used for further analysis.
2. Current HabiTrak (Habitat Tracking Reporting) data available from the SANDAG SANGIS Regional Data Warehouse (October 15, 2015) was then overlaid with the 1995 vegetation mapping data to calculate the golden eagle habitat preserved to date in both the MSCP and County Subarea Plan areas.
3. The HabiTrak data was also used to calculate the amount of golden eagle habitat both "inside the MHPA" and "outside the MHPA."[2]

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[1] Table 3-5 of the MSCP Plan identifies the following vegetation communities as potential foraging/nesting habitat (i.e., suitable habitat) for golden eagle: coastal sage scrub, chaparral, grassland, and oak woodland.

[2] The HabiTrak data maintained by the California Department of Fish and Wildlife within the SANGIS database varies slightly from the County of San Diego's records, since the County manually calculates its gains and losses (County of San Diego 2015).

Results of Golden Eagle Habitat Modeling

1. Table 2 provides the results of GIS confirmation of golden eagle foraging habitat within the MSCP Plan area. Tables 3 and 4 provide condensed versions of the crosswalk for the MSCP Plan and the County Subarea Plan.
2. Total golden eagle habitat in the MSCP Plan area comes to 264,448 acres, as shown in the last column of Table 2. This acreage is close to the "Total MSCP Study Area" acreage presented in Table 3-3 of the MSCP Plan, which is 264,689 acres. This 264,448-acre figure was then used to calculate the MSCP goal of preserving 53% of golden eagle foraging habitat, which comes to 140,130 acres, as shown in Table 2. The amount of golden eagle foraging habitat identified in Table 3-5 of the MSCP Plan is 139,000+/- acres. The GIS calculations are, therefore, achieved within an acceptable margin. Thus, for purposes of this analysis, the MSCP preservation goal is 140,130.
3. The Biological Opinion for the County Subarea Plan outlines a conservation level of 54% of potential foraging habitat for golden eagle (i.e., 91,397 of 170,416 acres as identified in the Subarea Plan). The GIS calculation of suitable golden eagle habitat within the Subarea Plan boundary, shown in Table 4, is 169,879 acres. Using the Biological Opinion's stated conservation level of 54%, total conservation within the County Subarea Plan amounts to 91,107 of 169,879 acres of suitable golden eagle habitat.

Table 2
Vegetation Communities within the MSCP Plan Crosswalked with Holland 1986

MSCP Plan Vegetation Community	Holland Vegetation Community	Inside MHPA	Outside MHPA	Grand Total
Coastal Sage Scrub	Diegan Coastal Sage Scrub	80,582 (71,274)	34,486	115,068
Chaparral	Chamise Chaparral	3,527	1,461	4,988
	Chaparral	41,438	24,167	65,605
	Flat-topped Buckwheat	0	27	27
	Granitic Chamise Chaparral	41	26	67
	Granitic Northern Mixed Chaparral	1,196	1,961	3,157
	Granitic Southern Mixed Chaparral	418	2,839	3,256
	Mafic Southern Mixed Chaparral	0	155	155
	Northern Mixed Chaparral	150	1,854	2,004
	Scrub Oak Chaparral	123	10	133
	Southern Mixed Chaparral	13,912	18,102	32,015
	Total	*60,804 (54,945)*	*50,602*	*111,406*
Coastal Sage-Chaparral Scrub	Coastal Sage-Chaparral Scrub	1,923 (1,490)	2,286	4,209

Table 2
Vegetation Communities within the MSCP Plan Crosswalked with Holland 1986

MSCP Plan Vegetation Community	Holland Vegetation Community	Inside MHPA	Outside MHPA	Grand Total
Grassland	Non-Native Grassland	3,188	8,303	11,491
	Native Grassland	28	131	159
	Valley and Foothill Grassland	7,336	8,402	15,738
	Valley Needlegrass Grassland	229	447	676
	Total	*10,782(9,770)*	*17,283*	*28,065*
Oak Woodland	Coast Live Oak Woodland	448	46	494
	Dense Coast Live Oak Woodland	2,447	2,018	4,466
	Engelmann Oak Woodland	1	2	3
	Oak Woodland	42	--	42
	Open Engelmann Oak Woodland	286	410	696
	Total	*3,224 (2,651)*	*2,476*	*5,700*
Total Golden Eagle Habitat		**157,315 (140,130)**	**107,133**	**264,448**

Note: Acreages within parentheses are taken from the MHPA Conserved column in Table 3-3 of the MSCP Plan.

Table 3
Vegetation Communities within the MSCP Plan

MSCP Plan Vegetation Community	Inside MHPA (acres)	Outside MHPA (acres)	Grand Total (acres)
Coastal Sage Scrub	80,582 (71,274)	34,486	115,068
Chaparral	60,804 (54,945)	50,602	111,406
Coastal Sage-Chaparral Scrub	1,923 (1,490)	2,286	4,209
Grassland	10,782(9,770)	17,283	28,065
Oak Woodland	3,224 (2,651)	2,476	5,700
Total Golden Eagle Habitat	**157,315 (140,130)**	**107,133**	**264,448**

Note: Acreages within parentheses are taken from the MHPA Conserved column in Table 3-3 of the MSCP Plan. The remaining acreages are from the San Diego County MSCP mapping effort (SANDAG 1995).

Table 4
Vegetation Communities within the County Subarea Plan

MSCP Plan Vegetation Community	Inside MHPA (acres)	Outside MHPA (acres)	Grand Total (acres)
Coastal Sage Scrub	49,935 (44,088)	21,175	71,110
Chaparral	43,744 (39,921)	36,098	79,842
Coastal Sage-Chaparral Scrub	1,525 (1,369)	1,734	3,259
Grassland	4,026 (3,493)	6,559	10,585

Table 4
Vegetation Communities within the County Subarea Plan

MSCP Plan Vegetation Community	Inside MHPA (acres)	Outside MHPA (acres)	Grand Total (acres)
Oak Woodland	2,708 (2,236)	2,374	5,082
Total Golden Eagle Habitat	**101,939 (91,107)**	**67,940**	**169,879**

Note: The acreages in parentheses for each vegetation community were obtained by multiplying the grand total for each vegetation community by the percentage of MSCP vegetation community conserved for the unincorporated portion of the County as outlined in Table 3-1 of the MSCP Plan (1998). These acreages represent the MHPA Conserved acreages shown in Table 3-1 of the MSCP Plan and Total Goal from Table 1-2 of the County Subarea Plan.

MSCP-Defined Golden Eagle Suitable Habitat – Current Preserve as of October 2015

1. Based on the methodology described above, Dudek calculated the current amount of golden eagle habitat within the MSCP Preserve and the amount of golden eagle foraging habitat that future developments within the MSCP planning area will contribute to the Preserve over the life of the MSCP. These acreages were used to determine if the contributions to the MSCP designated Preserve were on track to meet or exceed the 53% target.
2. As discussed, to determine the amount of golden eagle foraging habitat currently set aside as Preserve, the MSCP Plan vegetation mapping was overlaid with current HabiTrak data.
3. Table 5 provides the acreages of golden eagle habitat gained within the entire MSCP Plan area as calculated in HabiTrak for both inside and outside of the MHPA Preserve. As of October 2015, the total amount of MSCP golden eagle habitat preserved is estimated to be 90,856 acres – approximately 49,274 acres short of the goal of 140,130 acres.
4. Table 6 provides the same calculations for the County Subarea Plan. As of October 2015, the total amount of MSCP golden eagle habitat preserved is estimated to be 65,615 acres — approximately 25,492 acres short of the goal of 91,107 acres.
5. Although "outside the MHPA" does not count toward the 53% preservation goal, additional habitat "outside the MHPA" has been set aside as Preserve in the amount of 19,941 acres and 18,304 acres in the MSCP and County Subarea Plans, respectively.

Table 5
HabiTrak Gain within the MSCP Plan Area

Vegetation Community	HabiTrak Gain Inside MHPA Preserve (acres)	HabiTrak Gain Outside MHPA Preserve (acres)	Total Gain
Coastal Sage Scrub	41,849	7,962	49,811
Chaparral	40,970	8,770	49,740
Coastal Sage–Chaparral Scrub	1,277	1,094	2,371

Table 5
HabiTrak Gain within the MSCP Plan Area

Vegetation Community	HabiTrak Gain Inside MHPA Preserve (acres)	HabiTrak Gain Outside MHPA Preserve (acres)	Total Gain
Grassland	5,521	1,683	7,204
Oak Woodland	1,239	432	1,671
Total HabiTrak Gain	**90,856**	**19,941**	**110,797**

Note: Only those acres acquired and dedicated within the Pre-Approved Mitigation Area or a Biological Resource Core Area count toward the Preserve conservation goal. HabiTrak data as of October 2015.

Table 6
HabiTrak Gain within the County Subarea Plan Area

Vegetation Community	HabiTrak Gain Inside MHPA Preserve (acres)	HabiTrak Gain Outside MHPA Preserve (acres)	Total Gain
Coastal Sage Scrub	28,545	7,383	35,928
Chaparral	32,937	8,320	41,257
Coastal Sage–Chaparral Scrub	1,010	1,059	2,069
Grassland	2,066	1,113	3,179
Oak Woodland	1,057	429	1,486
Total HabiTrak Gain	**65,615**	**18,304**	**83,919**

Note: Only those acres acquired and dedicated within the Pre-Approved Mitigation Area or a Biological Resource Core Area count toward the Preserve conservation goal. HabiTrak data as of October 2015.

MSCP Defined Golden Eagle Suitable Habitat – Future Preserve

1. As noted above, the MSCP Plan anticipates that, over the life of the MSCP Plan, 53% of the golden eagle foraging habitat within the MSCP planning area would be placed permanently into the Preserve. The mechanics of this process are fairly straightforward: Each time a landowner applies for permits to develop within the MSCP planning area, that landowner must dedicate a certain amount of property to the Preserve. This way, each new development project contributes to and augments the Preserve, allowing it to increase in size as contemplated, until it ultimately reaches or exceeds the Plan's habitat conservation goals.

2. As indicated above, to meet the MSCP's goal of preserving 53% of golden eagle foraging habitat, an additional 49,274 acres of such habitat must be placed into the MSCP Preserve in the future.

3. The MSCP Preserve is still in the process of being assembled. That is, land is still being added to the MSCP Preserve with each new development within the MSCP planning area. For example, based on the MSCP Preserve boundaries, it is estimated that an additional 64,878 acres of suitable golden eagle habitat is already slated for inclusion in

MSCP Preserve (Table 7). Of those 64,878 acres, 35,356 acres are within the County Subarea Plan area (Table 8). When the owners of this land submit development proposals to the County, those acres of habitat would move automatically into the Preserve.

4. Several of the Take Authorized Areas (identified for future development in the MSCP Plan and County Subarea Plan) located within the County MSCP Subarea Plan area have been converted entirely to MSCP Preserve. These areas include Hidden Valley, Las Montanas, Otay Ranch Village 15, and Daley Ranch. Portions of these areas which provide suitable golden eagle foraging habitat are included in the suitable habitat conserved to date (90,586 acres). All of these projects contribute to additional suitable golden eagle habitat being preserved above and beyond what was originally anticipated in the MSCP Plan.

Table 7
Golden Eagle Habitat within the MSCP Plan – Current and Future Acreages

	Inside MHPA Preserve (acres)			Outside MHPA Preserve (acres)		
Vegetation Community	*Gain to Date*	*Preserve Remaining to Date*	*Total Projected Preserve*	*Gain to Date*	*Habitat Remaining to Date*	*Total Projected Golden Eagle Habitat Outside of Preserve*
Coastal Sage Scrub	41,849	37,916	79,765	7,962	24,015	31,977
Chaparral	40,970	19,445	60,415	8,770	37,886	46,656
Coastal Sage–Chaparral Scrub	1,277	627	1,904	1,094	1,049	2,143
Grassland	5,521	4,939	10,460	1,683	10,784	12,467
Oak Woodland	1,239	1,951	3,190	432	1,898	2,330
Total	**90,856**	**64,878**	**155,734**	**19,941**	**75,632**	**95,573**
Total Potential Golden Eagle Habitat	**155,734**			**95,573**		

Note: Only those acres acquired and dedicated within the Pre-Approved Mitigation Area or a Biological Resource Core Area count toward the Preserve conservation goal. HabiTrak data as of October 2015. Future acreage includes the Proposed Project.

Table 8
Golden Eagle Habitat within the County Subarea Plan – Current and Future Acreages

	Inside MHPA Preserve (acres)			Outside MHPA Preserve (acres)		
Vegetation Community	*Gain to Date*	*Preserve Remaining to Date*	*Total Projected Preserve*	*Gain to Date*	*Habitat Remaining to Date*	*Total Projected Golden Eagle Habitat Outside of Preserve*
Coastal Sage Scrub	28,545	20,817	49,362	7,383	12,496	19,879
Chaparral	32,937	10,555	43,492	8,320	24,920	33,240
Coastal Sage–Chaparral Scrub	1,010	503	1,513	1,059	545	1,604
Grassland	2,066	1,864	3,930	1,113	4,170	5,283

Table 8
Golden Eagle Habitat within the County Subarea Plan – Current and Future Acreages

Vegetation Community	Inside MHPA Preserve (acres)			Outside MHPA Preserve (acres)		
	Gain to Date	*Preserve Remaining to Date*	*Total Projected Preserve*	*Gain to Date*	*Habitat Remaining to Date*	*Total Projected Golden Eagle Habitat Outside of Preserve*
Oak Woodland	1,057	1,617	2,674	429	1,800	2,229
Total	**65,615**	**35,356**	**100,971**	**18,304**	**43,931**	**62,235**
Total Potential Golden Eagle Habitat	**100,971**			**62,235**		

Note: Only those acres acquired and dedicated within the Pre-Approved Mitigation Area or a Biological Resource Core Area count toward the original target Preserve conservation goal. However, habitat gain outside the MHPA planning area represents development converted to MSCP Preserve and can be counted toward total MSCP habitat preserved. HabiTrak data as of October 2015. Future acreage includes the Proctor Valley Village 14 Proposed Project.

Results – MSCP Plan

1. The MSCP Preserve assembled as of October 2015 consists of 90,856 acres of golden eagle foraging habitat. The remaining MSCP Preserve within the original MHPA includes an additional 64,878 acres of golden eagle foraging habitat, resulting in a total of 155,734 acres (59%) of golden eagle foraging habitat preserved in the MPHA (Table 1).
2. Given that the October 2015 MSCP Preserve will add 19,941 acres of golden eagle foraging habitat outside the MHPA, the MSCP Plan is projected to result in 175,675total acres (66%) of Preserve (Table 1).
3. The MSCP Plan is, therefore, projected to exceed the 53% goal of 140,130 acres by approximately 15,600 acres of golden eagle habitat within the original MHPA, and approximately 35,550 acres of golden eagle habitat total (Table 1).

Results – County Subarea Plan

1. The County's Subarea Plan's Preserve assembled to date currently consists of 65,615 acres of golden eagle foraging habitat. The remaining Subarea Plan Preserve within the original MHPA consists of 35,356 acres of golden eagle foraging habitat. When these figures are combined, the MSCP Plan is projected to result in 100,971 acres (59%) of golden eagle foraging habitat preserved in the MPHA (Table 1).
2. The October 2015 MSCP Preserve gains outside the MHPA consist of 18,304 acres of golden eagle foraging habitat. This figure, when added to the existing total, increases the MSCP Plan's projected golden eagle foraging habitat to 119,275 total acres (70%) of Preserve (Table 1).

3. The County's Subarea Plan is, therefore, projected to exceed the 54% goal of 91,107 acres by approximately 9,900 acres of golden eagle habitat within the original MHPA, and more than 28,000 acres of golden eagle habitat total (Table 1).
4. The County's Subarea Plan has contributed more than any other subarea to the Preserve, as evidenced by contributing 65,615 acres of the 90,856 acres preserved to date in the overall MSCP. In addition, the County's Subarea Plan contributes to most of the habitat preserved over and above the 53% MSCP target (Table 1).

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H. T. HARVEY & ASSOCIATES
Ecological Consultants

Memorandum

April 27, 2016

To: David Hubbard and Mark Dillon
Dillon, Gatzke & Ballance LLP

From: Jeff Smith, Jeff Zirpoli, Judd Howell, and Scott Terrill

Subject: Otay Ranch Village 14 Land Exchange Golden Eagle Foraging Habitat Assessment

The proposed Otay Ranch Village 14 and Preserve Project (Project) is located in the Proctor Valley portion of the 23,000-acre Otay Ranch master planned community, between Chula Vista and Jamul. As currently proposed, the Project would confine development to an approximately 592-acre footprint in Otay Ranch Village 14, and convert to preserve lands all of the Project applicant's and State of California's approved development land uses in Otay Ranch Planning Areas 16 and 19 (Dudek 2015).

The proposed Project entitlements include a boundary adjustment to the preserve associated with the Multiple Species Conservation Program (MSCP) Plan (County of San Diego 1998) and Otay Ranch Resource Management Plan (City of Chula Vista and County of San Diego 1993, Chula Vista City Council and Planning Commission 1996), which will add 268.5 acres previously approved for development in Village 14 and Planning Areas 16 and 19 to the existing preserve. In addition, prior to, or concurrently with, approval of the entitlements for the Project, the Project applicant and State of California will exchange 278 acres of land located in Otay Ranch Village 14 and 278 acres of land located in Planning Area 16. The intent of the exchange is to enable the State of California to acquire ownership of property in Planning Area 16 that is biologically superior to the acreage currently owned by the State in the Village 14 area. Dudek (2015) previously analyzed the overall biological equivalency of the exchange and boundary adjustment parcels as required by Section 5.4.2 of the MSCP; however, given the recent U.S. Geological Survey focus on golden eagles (*Aquila chrysaetos*) in the Project area, the Project applicant sought to supplement the Dudek analysis with a review of the comparative value of the golden eagle foraging habitat on the exchange parcels. This report addresses that topic by summarizing insight gained from an initial geographic information system (GIS) desktop analysis, followed by ground surveys to verify relevant habitat characteristics and evidence of prey occurrences.

Within the boundaries of the entire Project area, Figure 1 depicts (1) the 278 acres in Planning Area 16 to be given by the Project applicant to the State in the exchange (yellow vertical lines), (2) the 278 acres in the Village 14 area being given by the State to the Project applicant in the exchange (white vertical lines), (3) the boundary

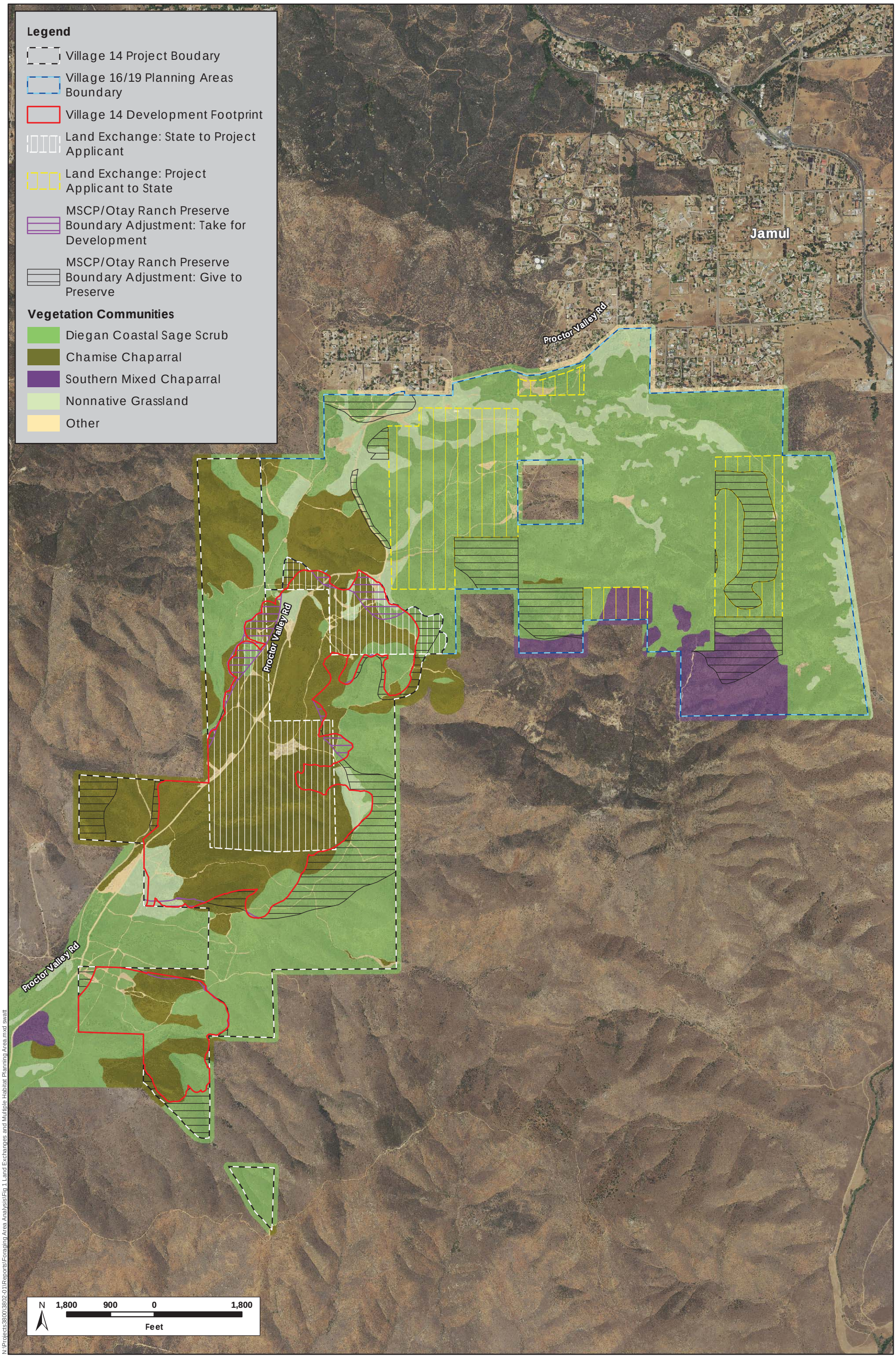

Figure 1. Land Exchange and Multiple Species Conservation Program (MSCP)/Otay Ranch Preserve Boundary Adjustment Proposed as Part of the Otay Ranch Village 14 Project in Relation to the Current Distribution of Primary Vegetation Communities

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adjustment that will result in the net conversion of 268.5 acres of land from approved development to preserve (black horizontal lines showing property to be "given" to the preserve and purple horizontal lines showing the property to be "taken" from the preserve), and (4) the underlying vegetation communities.

The land exchange and boundary adjustment involve primarily Diegan coastal sage scrub and chamise (*Adenostoma fasciculatum*) chaparral vegetation community types, with smaller acreages of southern mixed chaparral, nonnative annual grassland, and miscellaneous landscape areas (Figure 1). Following is a summary of the primary vegetation community exchanges that would occur as a result of the land exchange and boundary adjustment.

1) The land exchange would transfer 278 acres from the Project applicant to the State, comprising 222.4 acres of coastal sage scrub, 34.1 acres of nonnative annual grassland, 13.3 acres of southern mixed chaparral, and 8.2 acres of miscellaneous land in Planning Areas 16 and 19.

2) The land exchange would transfer 278 acres from the State to the Project applicant, comprising 225.0 acres of chamise chaparral, 31.4 acres of coastal sage scrub, 7.6 acres of nonnative annual grassland, and 14 acres of miscellaneous land, all located in Village 14 except for a stretch of existing roadway running north through Planning Areas 16/19.

3) Once the land exchange occurs, the boundary adjustment in Planning Areas 16/19 would result in the Project applicant converting an additional 169.8 acres to preserve, comprising 132.2 acres of coastal sage scrub, 26.8 acres of southern mixed chaparral, 7.4 acres of nonnative annual grassland, and 3.4 acres of miscellaneous land.

4) Once the land exchange occurs, the boundary adjustment in Village 14 would result in the Project applicant converting an additional 142.3 acres to preserve, comprising 95.9 acres of coastal sage scrub, 41.6 acres of chamise chaparral, 2.5 acres of nonnative annual grassland, and 2.3 acres of miscellaneous land.

5) Once the land exchange occurs, the boundary adjustment in Village 14 would result in the Project applicant gaining 43.6 acres for development purposes, comprising 10.6 acres of coastal sage scrub, 26.0 acres of chamise chaparral, 5.4 acres of nonnative annual grassland, and 1.6 acres of miscellaneous land.

The land exchange with the State involves relatively few, mostly larger blocks of land (up to 180–185 acres), whereas the boundary adjustment involves many smaller parcels ranging in size from <1 to 75.5 acres (Figure 1).

Habitat Assessment

The focus of our initial GIS desktop analysis was further qualifying Dudek's (2015) delineation of chamise chaparral based on the relative density of vegetation evident in recent (April 2015) Google Earth imagery, and evaluating other relevant landscape characteristics, such as apparent levels of existing human-caused disturbance and soil characteristics that relate to the potential for occurrence of important eagle prey species. In the Village 14 area, we delineated areas where the extent of dense shrub vegetation appeared incompatible with eagle foraging

(Figure 2). We then conducted ground surveys over a two-day period in March 2016 to verify the vegetation characteristics of these dense shrub areas and, if needed, adjust our initial delineations.

During the field surveys, we also walked transects through representative areas of chamise chaparral, coastal sage scrub, intermixed grass/forb communities, nonnative annual grassland, and southern mixed chaparral to garner first-hand understanding of the characteristics and quality—relative to the potential to support eagle foraging—of landscape areas involved in the proposed land exchange and boundary adjustment. We accomplished this by driving and walking through relevant areas, recording observations, and mapping important habitat variants and characteristics that we observed. We distributed our survey effort to provide representative coverage of relevant land-exchange areas and primary habitat types. Our focus included verifying Google Earth-based impressions of relative vegetation density/condition and existing levels of human-caused habitat disturbance, and assessing the relative prevalence of signs indicating the presence of important eagle prey species. Eagle prey species of primary interest in the Project area were desert cottontail (*Sylvilagus audubonii*), brush rabbit (*Sylvilagus bachmani*), black-tailed jackrabbit (*Lepus californicus*), and California ground squirrel (*Spermophilus beecheyi*) (Hunsicker 1972, Hunt et al. 1999, Kochert et al. 2002, Bittner 2015).

Assessment Results

During the field surveys, we found ostensibly similar evidence (pellet abundance) of lagomorph presence in coastal sage scrub and chamise chaparral, but confirmed a significant difference in the apparent accessibility of those prey species to eagles in the two habitats. Rabbits and hares seek protection from predators by sheltering under shrubs or logs, in rock piles, or in tall grasses, but generally forage in more open areas where nutritious grass/forb vegetation is found (Fitch 1947, Knick and Dyer 1997, Marín et al. 2003). Based on the distribution and abundance of pellets (both old and relatively fresh), the coastal sage scrub and intermixed grasslands in the Planning Area 16/19 exchange and boundary adjustment areas provide sufficient protective shrub cover and forage to accommodate a high abundance of both jackrabbits and the smaller rabbits, with habitat structure that is highly suited to foraging by golden eagles. Conversely, although the level of apparent lagomorph abundance was often comparable to that found in coastal sage scrub and areas of sparse chamise chaparral, we confirmed that our initial delineations effectively represented areas in Village 14 where the chamise and other shrub cover was generally too dense and tall to support eagle foraging (Figure 2). Dense chaparral does not support foraging golden eagles, because the birds cannot maneuver effectively to capture prey in such dense vegetation (Marzluff et al. 1997, Kochert et al. 2002).

The vegetation density and stature may be too great to support eagle foraging within stands of dense chaparral, but it is important to recognize that such stands provide shelter and breeding sites for lagomorphs that periodically forage in and disperse across adjacent open areas where they are accessible to foraging golden eagles. Landscapes that support a patchy mosaic of smaller stands of dense shrubs intermixed with sufficient open grass/forb areas can provide good foraging habitat for eagles. In areas where large patches of dense chaparral predominate, however, the potential for eagle foraging is reduced to limited areas of transitional edge habitat.

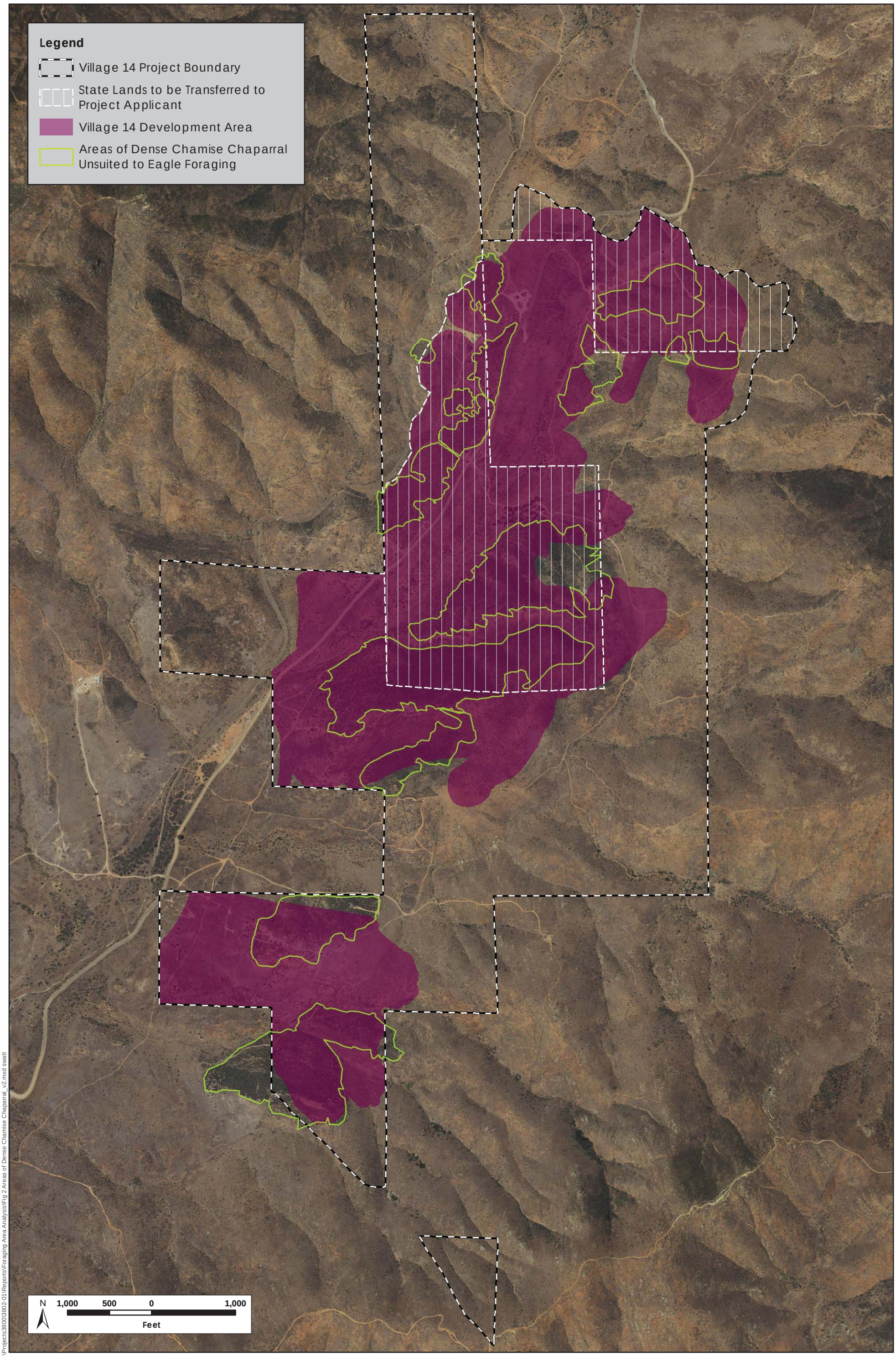

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Figure 2. Areas of Dense Chamise Chaparral in the Proposed Otay Ranch Village 14 Project Area in Relation to the Proposed State Land Exchange

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This circumstance applies to much of the State land that will be transferred to the Project applicant and much of the overall 592-acre Village 14 development footprint (Figure 2). Our assessment indicated that approximately 37% (101.7 acres) of the State land that will be exchanged to become part of the Village 14 development, and approximately 30% (176.2 acres) of the overall 592-acre Village 14 development footprint, consists of dense chamise chaparral or other shrub cover that is not suited to foraging by golden eagles (Figure 2). We do note, however, that the relative density and stature of shrub cover in the various polygons identified in Figure 2 varies, and that especially some of the smaller, less-dense patches in the northern portion of the development area could support occasional eagle foraging attempts.

In comparison, the land in Planning Areas 16/19 that will be transferred to the State or converted to preserve comprises primarily the more ideal—from an eagle foraging perspective—coastal sage scrub configuration consisting of mosaics of diverse shrubs distributed sparsely and in smaller stands and broadly intermixed with patches of open grass/forb communities. Approximately 38 acres of the land that will be transferred to the State or converted to preserve is classified as southern mixed chaparral (Figure 1); however, the ~13-acre patch that will be transferred to the State actually consists of relatively open shrub cover more characteristic of coastal sage scrub, and only about one third of the ~25-acre patch classified as southern mixed chaparral that will be transferred to preserve comprises dense chaparral unsuited to foraging by golden eagles.

The Planning Area 16/19 lands to be exchanged to the State and converted to preserve also include patches of nonnative annual grassland in the northwestern sector (Figure 1). During the field surveys, we observed relatively more prey sign in shrub habitats, including patches of southern mixed chaparral, than in nonnative annual grassland. This impression was probably misleading, however, because it was much more difficult to detect scat in the lush growth of tall, thick grasses that resulted from the preceding, unusually wet winter. Moreover, the dense, tall shrubs characteristic of southern mixed chaparral effectively preclude golden eagle foraging, whereas the grasslands provide suitably open foraging habitat for eagles and support another important prey species, the California ground squirrel. During our surveys, we detected ground squirrels only in grazed areas classified as nonnative annual grassland. A few acres of State land classified as nonnative annual grassland will be transferred to the Project applicant in the Village 14 area; however, in exchange the State will receive more than three times as much acreage in Planning Area 16 that will contribute to preserving several larger contiguous patches of grassland (Figure 1). By maintaining the contiguity of these larger grassland patches, the proposed land exchange and boundary adjustment will further enhance the value of the preserve for golden eagles and other grassland-dependent species.

The coastal sage scrub and grassland areas in Planning Areas 16/19 proposed for transfer to the State and preserve, as well as the additional foothill coastal sage scrub areas in Village 14 that will be newly dedicated to preserve, also feature soils that are more compatible with occurrence of burrowing California ground squirrels. Ongoing research in San Diego County, as well as insight from other work in the species' range, indicates that California ground squirrels prefer to burrow in sandy soils with higher bulk density and less silt, clay, and gravel (Lenihan 2007, Wisinski et al. 2013). Most of the proposed Village 14 development area is underlain with soils classified as *Olivenhain cobbly loam* and *San Miguel Exchequer rocky silt loam*, which are not compatible with ground squirrel burrowing, because they contain a relatively high clay content and are very cobbly, as opposed to sandy,

in nature (Natural Resources Conservation Service 2015). In contrast, the coastal sage scrub and annual grassland habitats to be transferred to the State in Planning Areas 16/19, and that will be newly allocated to the preserve in Village 14, are underlain primarily by soils such as *Friant rocky fine sandy loam* and *Placentia sandy loam* (Natural Resources Conservation Service 2015), which provide the sandier soils that the squirrels prefer for burrowing.

Although some of the land to be transferred to the State in Planning Area 16 has been degraded by OHV and other recreational activity, similar levels of disturbance are evident in areas that the State will transfer to the Project applicant in the Village 14 area. Furthermore, no public roads currently traverse Planning Areas 16/19 and implementation of MSCP/Otay Ranch preserve management provisions is expected to restore and maintain the landscape as a productive area for eagles and their prey.

The primary land exchange will also benefit golden eagles by consolidating a large contiguous patch of undeveloped, preserve habitat in Planning Areas 16/19 that will maintain at least a ¾-mile-wide open-space corridor between Village 14 and the existing Echo Valley residential area near Jamul to the north (Figure 3). Preserving this open corridor will be important for maintaining connectivity for eagles between the San Miguel Mountain/San Diego National Wildlife Refuge historic nesting area and the Jamul Mountains potential nesting area in the midst of the core Otay Ranch Preserve. Although eagles may occasionally fly over the new Village 14 development, they will more likely avoid the development and seek undeveloped habitat to move through. Furthermore, it is unlikely that the undeveloped area expected to remain around San Miguel Mountain, consisting primarily of federal land managed as part of San Diego National Wildlife Refuge, by itself will constitute a sufficient area to support reestablishment of a breeding territory centered on this previously occupied nesting area (last confirmed successful nesting in 2004; last occupied by an adult pair in 2007, when the previous natural nest burned and its supportive ledge collapsed; no confirmed nesting to date despite a new artificial platform being installed in 2014; Martin and Terp 2014, U.S. Fish and Wildlife Service et al. 2012). If limited to this area, the eagle pair's home range would be constrained to approximately 15 square miles, whereas home ranges in western San Diego County are thought to more typically encompass 20–50 square miles (Dixon 1937) and home ranges can be much larger (>100 square miles) in desert areas farther east in the County (e.g., see Katzner et al. 2012).

Discussion and Conclusions

Our assessment indicated that the land exchange represents a benefit to golden eagles, because of the relative habitat quality involved and expected benefits from reducing fragmentation of the undeveloped landscape. Diegan coastal sage scrub and moderately grazed, nonnative annual grassland are the highest value foraging habitats for golden eagles in the Project area, because they provide optimal habitat for a variety of favored prey species and have structural characteristics that are suited to foraging by golden eagles. Although it may harbor relatively high abundances of lagomorph prey, dense chaparral does not support foraging golden eagles because the birds cannot maneuver effectively to capture prey in such dense vegetation. In contrast, relatively open coastal sage scrub, areas of sparse chamise chaparral, and areas where smaller patches of dense shrubs are broadly intermixed with open grass/forb or low-shrub areas represent ideal foraging habitat for golden eagles. The latter areas combine sufficient shrub cover needed to shelter prey species with open grass/forb areas that provide both

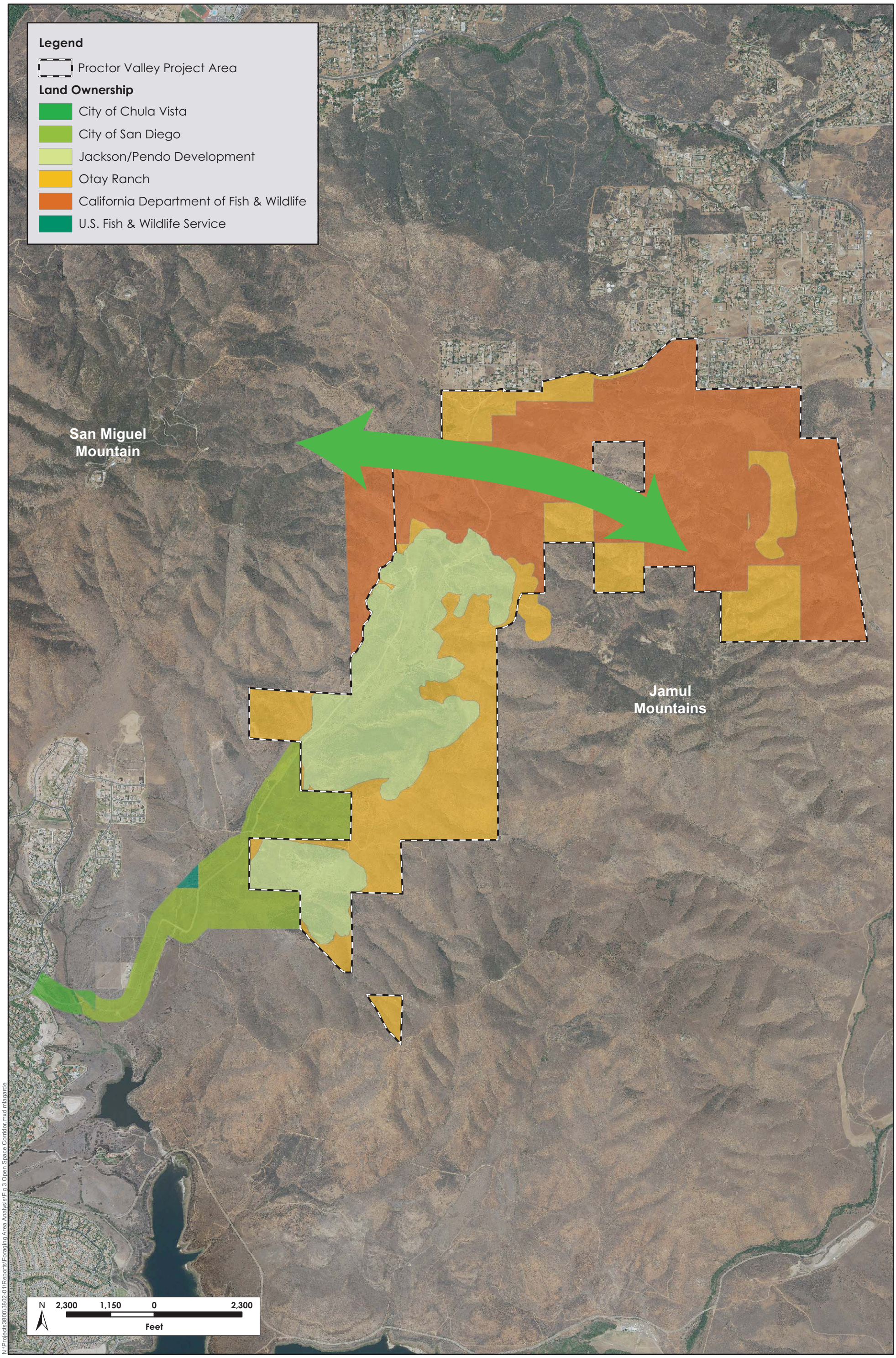

Figure 3. Illustration of the Open Space Corridor that the Proposed Otay Ranch Village 14 and State Land Exchange Would Maintain and Could Serve as an Important Movement Corridor for Golden Eagles

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nutritious foraging areas for prey species and accessible foraging areas for golden eagles. Open grasslands also provide foraging areas for golden eagles by supporting jackrabbits in tall-grass areas and ground squirrel colonies in areas where livestock grazing maintains lower-stature grasses.

The State will receive primarily coastal sage scrub habitat, as well as notable patches of nonnative annual grassland, in Planning Areas 16/19 (Figure 1), which will augment the MSCP/Otay Ranch preserve in this area with additions favorable to foraging golden eagles. Many of the smaller boundary-adjustment patches will also fill in gaps or be contiguous with coastal sage scrub habitat, thereby further helping to preserve larger patches of relatively high-quality foraging habitat for golden eagles in both Village 14 and Planning Areas 16/19 (Figure 1). Virtually all of the land in Planning Areas 16/19 to be gained by the State is potential eagle foraging habitat, consisting of sparsely and patchily distributed shrubs, which provide necessary cover for rabbits and hares, intermixed with relatively extensive patches of open grass/forb communities, which provide necessary foraging habitat for rabbits and hares in areas that are readily accessible to foraging golden eagles. The sparse and patchy distribution of shrubs intermixed with open grass/forb areas and adjacent patches of grassland in Planning Areas 16/19 also support a more diverse mix of favored prey than the extensive chamise chaparral habitats found in the Village 14 area.

In exchange, the land areas proposed for transfer from the State to the Project applicant to become part of the Village 14 development support mostly chamise chaparral, including sizeable expanses of dense chaparral, which is less favorable foraging habitat for golden eagles because of the taller and denser vegetation. In addition, much of the relatively open habitat in the Village 14 exchange area is only marginally suited to foraging eagles because of proximity to Proctor Valley Road (although animals killed by vehicles can be an attractant for scavenging eagles).

In summary, by all measures of interest, the land exchange with the State and MSCP/Otay Ranch preserve boundary adjustment proposed as part of the Project appear to represent a favorable scenario for golden eagles that may forage in Proctor Valley and may choose to nest again on San Miguel Mountain or in the Jamul Mountains. The land exchange and boundary adjustment will:

- preserve more coastal sage scrub and annual grassland habitat underlain with favorable sandy soils (rather than the predominantly dense chamise chaparral underlain with rocky soils within the State property being transferred to the Project applicant), which in combination translates to both more habitat for key prey species and more accessible foraging habitat for golden eagles;

- consolidate the development to reduce habitat fragmentation and preserve foraging habitat in an area that is not bisected by a primary-circulation public roadway and in which managing the adverse influence of human recreational activity, especially motorized activity, is likely to be more efficacious; and,

- consolidate the development in a manner that maintains a relatively broad open-space corridor to facilitate eagle movement between the San Miguel Mountain and Jamul Mountains areas.

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Memorandum

March 13, 2017

To: **David Hubbard**
Gatzke, Dillon & Ballance LLP

From: **Jeff Smith, Judd Howell, and Scott Terrill**

Subject: **Responses to Questions Posed by the County of San Diego Regarding the Otay Ranch Village 14 and Planning Areas 16/19 Project Golden Eagle Assessment**

The proposed Otay Ranch Village 14 and Planning Areas 16/19 Project (Project) encompasses 1,370.7 acres, including 86.9 acres of offsite improvement areas where Project-related development disturbance will occur. Of this total, 809.8 acres is proposed for development, including permanent and temporary impacts, offsite improvements, and roadways, utility corridors, and fuel management zones in what will otherwise remain open space. Conversely, at least 407.2 acres and potentially as much as 476.5 acres will be conserved as part of the overall MSCP/Otay Ranch Preserve, and an additional 84.3 acres will be designated as Limited Development Areas that will remain as open space. As defined in the MSCP, 97% of the Project landscape constitutes potential golden eagle foraging habitat, comprising Diegan coastal sage scrub, chaparral, and annual grassland habitats; however, approximately 11% of the proposed development area is not suited to eagle foraging because the chaparral is too dense.

Following are responses to specific questions posed by the County of San Diego about the Project and its potential to affect golden eagles. Note that we also inserted some additional questions and answers to provide comparable representation of the second artificial nest platform installed by the USFWS and BLM in 2013, which is located in the east-central Jamul Mountains.

1. **Confirm the distance between the former San Miguel Mountain nest site and the Project development boundary.**

   We do not have precise information concerning the locations of the historic nest sites used by golden eagles on San Miguel Mountain, none of which still exist in other than perhaps a decrepit remnant form. We do know, however, that there were three nests located in the same general vicinity as the artificial nest platform that the USFWS installed on the southeast flank of San Miguel Mountain in 2013 (D. Bittner personal communication, March 2017). The most recently used (2004) nest was located on another outcrop just below the artificial platform. This nest burned and the rock ledge it was on collapsed in the 2007 Harris. A second nest was located within 100 meters or less of the primary nest in the same general expanse of jumbled rocky outcrops. A third nest was located across the canyon to the southeast in another rocky outcrop area. These

nests either disappeared previously or were also burned in the Harris fire. Coarse measurements based on best-guess approximations of these historic nest locations places them within 3,065–3,541 feet from the nearest Project impact boundary (i.e., the nearest point where Project development will result in at least temporary human disturbance). Figure 1 illustrates the zone of overlap where development impacts would occur within 4,000 feet of the estimated locations of these three historic San Miguel Mountain eagle nests.

2. **Confirm the distance between the former San Miguel Mountain nest site and the nearest proposed "human disturbance" as shown in the Project site plan.**

   As framed, the answer to this question is the same as for Question 1, in that we equate "project development boundary" with "nearest proposed human disturbance."

3. **Confirm that the San Miguel Mountain nest site platform was destroyed and has not been rebuilt or reestablished.**

   The natural nest that was last used (in 2004) by golden eagles in the San Miguel Mountain breeding territory was burned in the 2007 Harris fire, and at that time the rock ledge the nest was on also fractured and collapsed. The former eagle pair remained on territory but initiated no breeding attempts from 2005–2007, and then abandoned the territory after the fall 2007 fire. No former nests still exist, other than as perhaps decrepit remnants, and no new eagle nests have been built in this former nesting area, including on the artificial nest platform the USFWS installed in the area.

4. **Confirm that the San Miguel Mountain nest site meets the criteria of an "abandoned" or "inactive" nest.**

   There is no formal definition for what constitutes an "abandoned" golden eagle breeding territory (which may include several alternative nest sites—the historic case over the years in the San Miguel Mountain territory), but confirmation that no breeding-age pair of eagles has occupied a former breeding territory for 4 years or more is generally a strong indicator that the territory has been abandoned. The evidence at hand suggests that the former San Miguel breeding territory has not been occupied by a breeding pair of eagles since 2007. No known breeding attempt (meaning eggs were laid) has occurred on San Miguel Mountain since 2004 and all former nests either no longer exist or remain as at most decrepit, burned remnants; therefore, the need to distinguish between active or used (contains eggs or young) and inactive or unused (not used during the current breeding season) nests is moot.

5. **Confirm the distance between the USFWS artificial nesting platform on San Miguel Mountain and the nearest Project development boundary.**

   ~3,666 feet. Figure 2 illustrates the zone of overlap where development impacts would occur within 4,000 feet of the artificial nest platform on San Miguel Mountain.

6. **Confirm the distance between the USFWS artificial nesting platform on San Miguel Mountain and the nearest proposed "human disturbance" as shown in the Project site plan.**

   As framed, the answer to this question is the same as for Question 5, in that we equate "project development boundary" with "nearest proposed human disturbance."

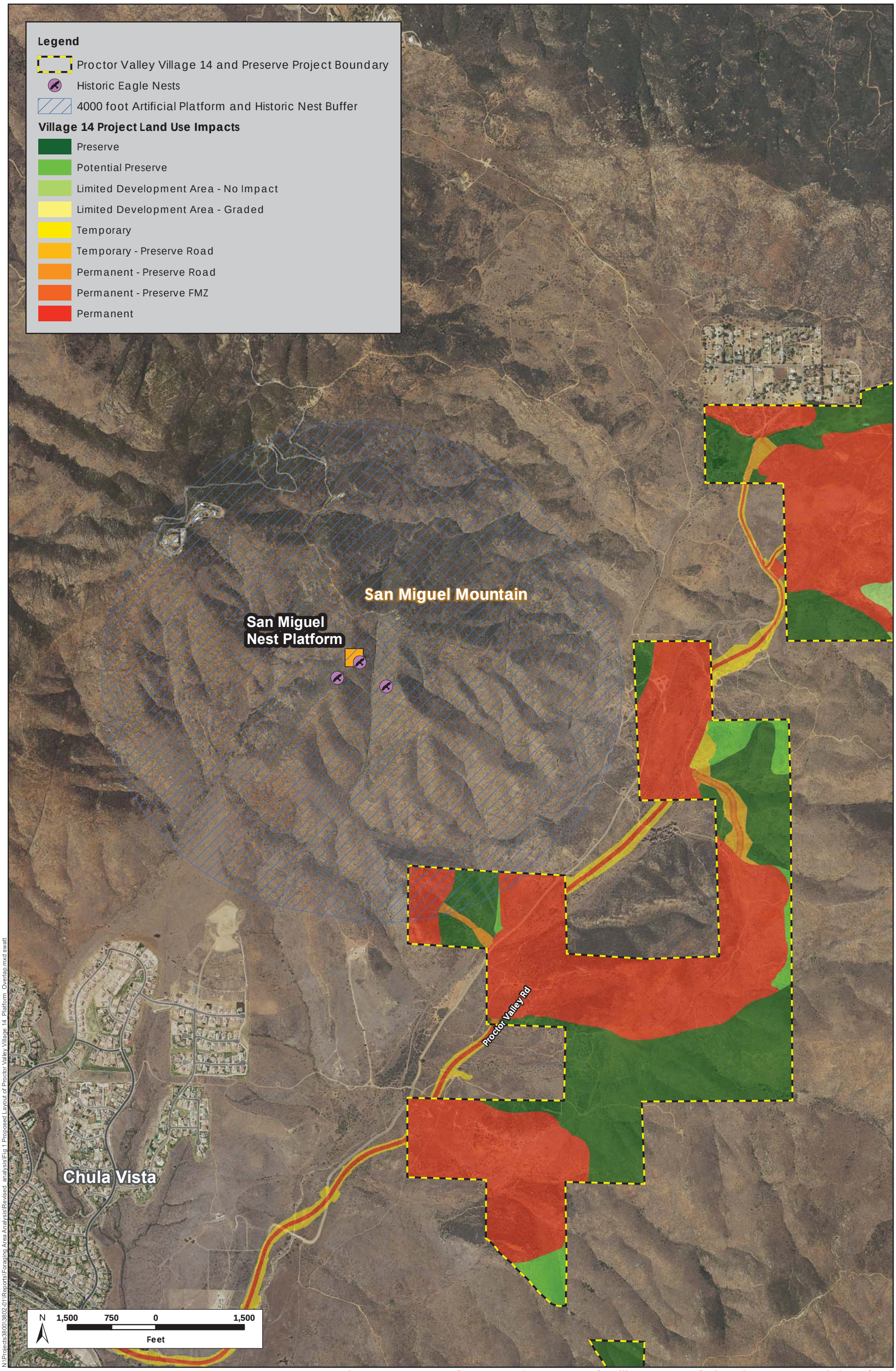

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Figure 1. Proposed Layout of Otay Ranch Village 14 and Planning Areas 16/19 Project Showing Development Overlap Zone Within 4,000 Feet of Artificial Nest Platform and Historic Eagle Nests on San Miguel Mountain

Otay Ranch Village 14 Revised Golden Eagle Foraging Area Analysis (3802-01)
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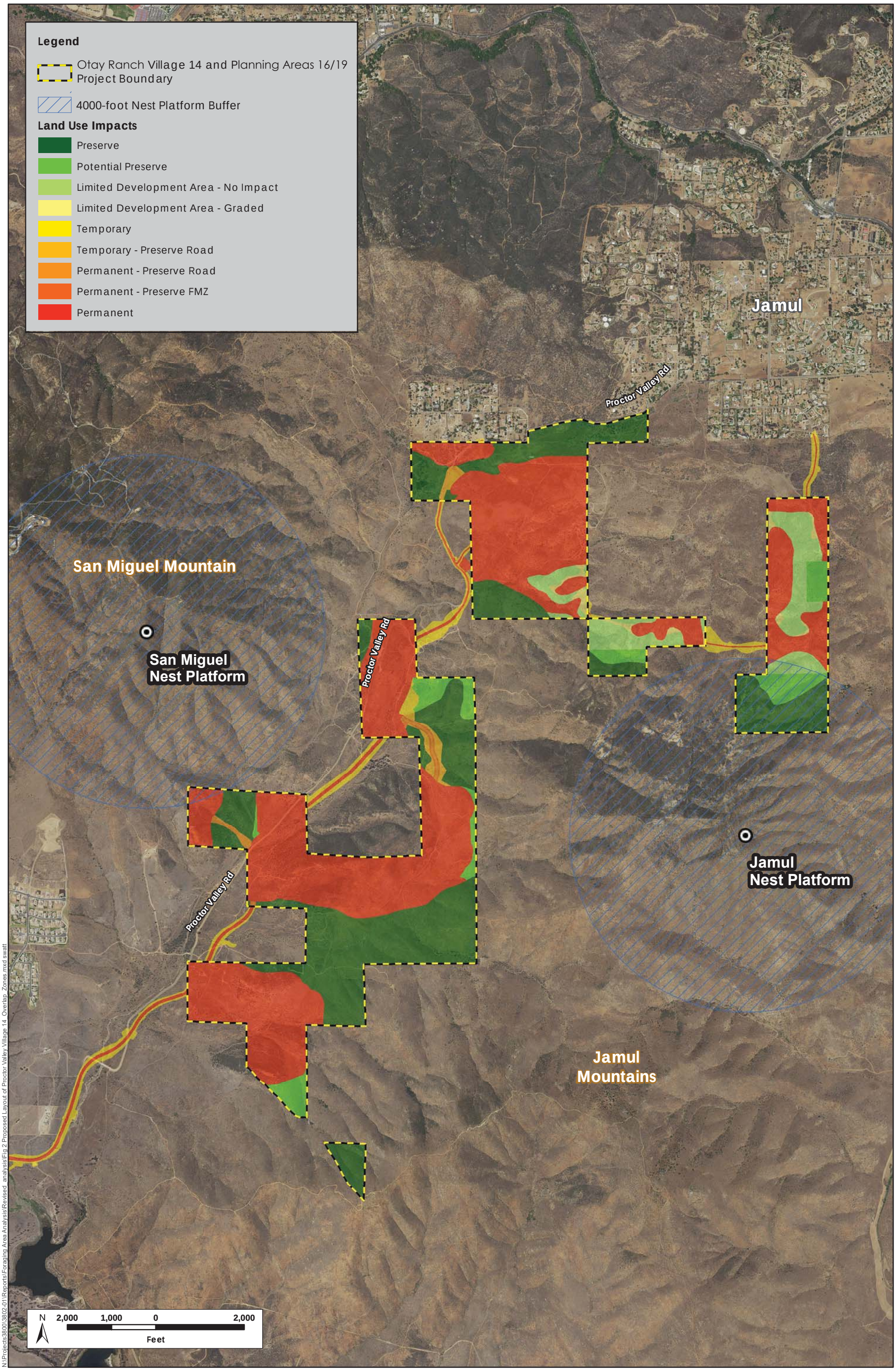

Figure 2: Proposed Layout of Otay Ranch Village 14 and Planning Areas 16/19 Project Showing Development Overlap Zones Within 4,000 Feet of Two Artificial Nesting Platforms Installed in 2013

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7. **Confirm that no golden eagles have established a nest at the USFWS artificial platform on San Miguel Mountain.**

   No golden eagle nest has been constructed on the San Miguel artificial nest platform. This has been confirmed both by H.T. Harvey & Associates visual observations during the 2016 and 2017 breeding seasons, as well as by an absence of eagle activity documented by the USFWS trail camera that is focused on the platform (J. Martin personal communication, March 2017).

8. **Confirm the distance between the USFWS/BLM artificial nesting platform in the Jamul Mountains and the nearest Project Development boundary.**

   ~3,916 feet. Figure 2 illustrates the zone of overlap where development impacts would occur within 4,000 feet of the artificial nest platform in the Jamul Mountains.

9. **Confirm that no golden eagles have established a nest at the USFWS/BLM artificial platform in the Jamul Mountains.**

   No golden eagle nest has been constructed on the Jamul Mountains platform. This has been confirmed both by H.T. Harvey visual observations during the 2016 and 2017 breeding seasons, as well as by an absence of eagle activity documented by the USFWS trail camera that is focused on the platform (J. Martin personal communication, March 2017).

10. **Confirm the distance between the next nearest active nest and the Project development boundary.**

    Based on available data summarized in the USFWS 2012 MSCP Status Report, the nearest known recently active (2011) golden eagle nest is located ~5.4 miles to the south in the Cedar Canyon area near Otay Mountain. We do not currently have access to any more recent data about golden eagle nesting activity in outlying areas, but closer nesting activity has not been publically documented for more than a decade and no other golden eagle breeding territories besides San Miguel Mountain have ever contained known nests located closer than 4–5 miles from the proposed Project.

11. **Confirm that there are no active nests within 4,000 feet of the Project development boundary.**

    Currently, there are no extant golden eagle nests (except perhaps decrepit remnants) within 4,000 feet of the Project development boundary, nor anywhere close to that distance from the Project site.

12. **Confirm that there are no suitable nesting platforms within 4,000 feet of the Project development boundary.**

    No, this is not correct. There are potentially suitable nest substrates in several areas within 4,000 feet of the Project development boundary. Most such substrates are rock outcrops located in the same general area as the San Miguel Mountain artificial nest platform and historic natural nest sites, in the area of the Jamul Mountains artificial nest platform, and along the ridge that runs east to west to the northeast of Jamul. Other possibilities include utility towers along the Jamul Transmission Line that crosses the Project landscape, and a few other marginal possibilities in various areas involving isolated rock outcrops and oak trees. Golden eagles also could conceivably nest in some of the relatively large eucalyptus trees located around upper Otay

Lake and in Proctor Valley; however, these possibilities are unlikely because of the landscape setting and existing proximity of human activity.

13. **Provide an opinion as to whether the golden eagles observed foraging on the Project site are defending a breeding territory or merely foraging within their home range.**

    Based on the periodic 2-day surveys we conducted during the 2016 and 2017 breeding seasons, we have recorded no evidence of definitive territorial activity in the San Miguel Mountain, Jamul Mountains, or Proctor Valley areas. The few eagles that we have observed in the area, as well as the USGS tracking data, confirm that transient subadult and adult eagles occur in the area at least seasonally and periodically. In addition, the initial USGS data suggested that the overall foraging home ranges of eagles nesting in Cedar Canyon at least temporarily encompassed the Jamul Mountains and Proctor Valley areas. Further, our two recent sightings of an adult eagle in the Jamul Mountains, with the March occurrence definitely involving a non-telemetered eagle, suggest the possibility that a floater adult may have taken up residence in the Jamul Mountains in 2017. Again, however, we have witnessed no signs of territorial displays, other overt territorial behavior, or any eagle nesting activity in the area during the past two breeding seasons.

14. **Provide an opinion as to whether the proposed Project would result in lethal take of any golden eagle.**

    The Project would not disturb any eagle breeding activity and the resulting loss of peripheral foraging habitat would be insubstantial for the currently known and established breeders in the MSCP planning area. Therefore, the potential for breeding disturbance and habitat loss to result in lethal take within the area breeding population is essentially nonexistent. Similarly, the potential for the loss of 810 acres of foraging habitat to result in lethal take of any local floater (nonbreeding adults), transient, or seasonally resident eagles that forage in the Project area also is vanishingly small, because such birds would still have broad access to other areas of high quality foraging habitat within the Preserve (i.e., it is highly unlikely that such a bird would starve to death because the Project is developed).

15. **Provide an opinion as to whether the proposed Project would result in human disturbance of any active golden eagle nest.**

    There is currently no potential for such disturbance to occur, because the closest known recently active nest is more than 5 miles away.

16. **Provide an opinion as to whether the proposed Project would place human disturbances within 4,000 feet of any active golden eagle nest.**

    There is currently no potential for such disturbance to occur, because the closest known recently active nest is more than 5 miles away.

17. **Provide an opinion as to whether the MSCP preserve, as augmented by the acreage conveyed by the proposed Project, provides adequate forage to sustain the golden eagles that currently include the Project site within their home range.**

Based on the available and accessible evidence, it is not clear that any individual eagles currently rely on the Project area as foraging habitat consistently or perennially. Although the initial USGS tracking data suggested that the overall home range of the former Cedar Canyon breeding pair included Proctor Valley and the Jamul Mountains, that female died and our recent observations revealed a non-telemetered adult in the area. Access to more recent USGS tracking data may help clarify the current situation; however, those data are not publically available. Regardless, given that Proctor Valley does not currently overlap any pair's core breeding territory and the closest known recently active nests are more than 5 miles away, if a pair nesting in the San Ysidro Mountains routinely forages in Proctor Valley, the loss of even a few thousand acres of foraging habitat (the Project development footprint is approximately 810 acres and, by the MSCP definition, 97% of this area constitutes golden eagle foraging habitat) in a peripheral portion of that pair's overall home range would not exceed the 20% threshold of foraging area loss identified as significant in the MSCP. Moreover, such a pair would continue to have ready access to large acreages of suitable foraging habitat within the MSCP Preserve in the Jamul Mountains, the foothills of Proctor Valley, possibly around San Miguel Mountain, and in the large expanse of Preserve habitat located between the Jamul Mountains and San Ysidro Mountains. Therefore, developing the Project would not significantly compromise the ability of any current breeding pairs to sustain themselves.

18. **Confirm your earlier opinion that the USGS data, while interesting for purposes of studying golden eagle behavior over the long-term, is incomplete and includes no analytical component, making it of marginal use in a project-specific impact assessment.**

    A robust assessment of eagle usage patterns and the importance of the Project site to tagged eagles would require a much more detailed evaluation of the gathered data than is possible based solely on the coarse-scale summary maps—with no interpretation—presented in the initial 2016 USGS report. Most importantly, discerning whether usage of the Project area by tagged adults that appear to be year-round residents is consistent throughout the year or seasonally variable, and using available analytical techniques to effectively portray the relative density of usage in different areas, are critical missing ingredients that would be required to use the data for assessing the relative importance of the Project area to resident breeders.

19. **Confirm your earlier opinion that the project site's golden eagle habitat is sub-optimal due to density of chaparral and loamy/cobbly soils.**

    This statement applies ONLY to the Otay Ranch Village 14 portion of the proposed Project development area in the central portion of Proctor Valley. Planning Areas 16 and 19 contain greater proportions and extents of high-quality coastal sage scrub and annual grassland habitat. There is definitely foraging habitat for golden eagles in the Village 14 area of central Proctor Valley, which in some areas is relatively high quality. However, a substantial portion of the habitat in the vicinity of the Village 14 development area is not golden eagle foraging habitat because the chaparral is too dense. In addition, because of the soil characteristics, most of the bottomland portions of central Proctor Valley where much of the development will occur is not well suited to ground squirrels compared to other neighboring foothill areas (as well as the grazed grassland and coastal scrub habitats located primarily in Planning Area 16). This does not mean that there are no foraging opportunities for eagles in these areas, but it limits the potential diversity of prey compared to other foothill areas that will be preserved.

H. T. HARVEY & ASSOCIATES
Ecological Consultants

Technical Memorandum

May 23, 2017

To: David Hubbard
Dillon, Gatzke & Ballance LLP

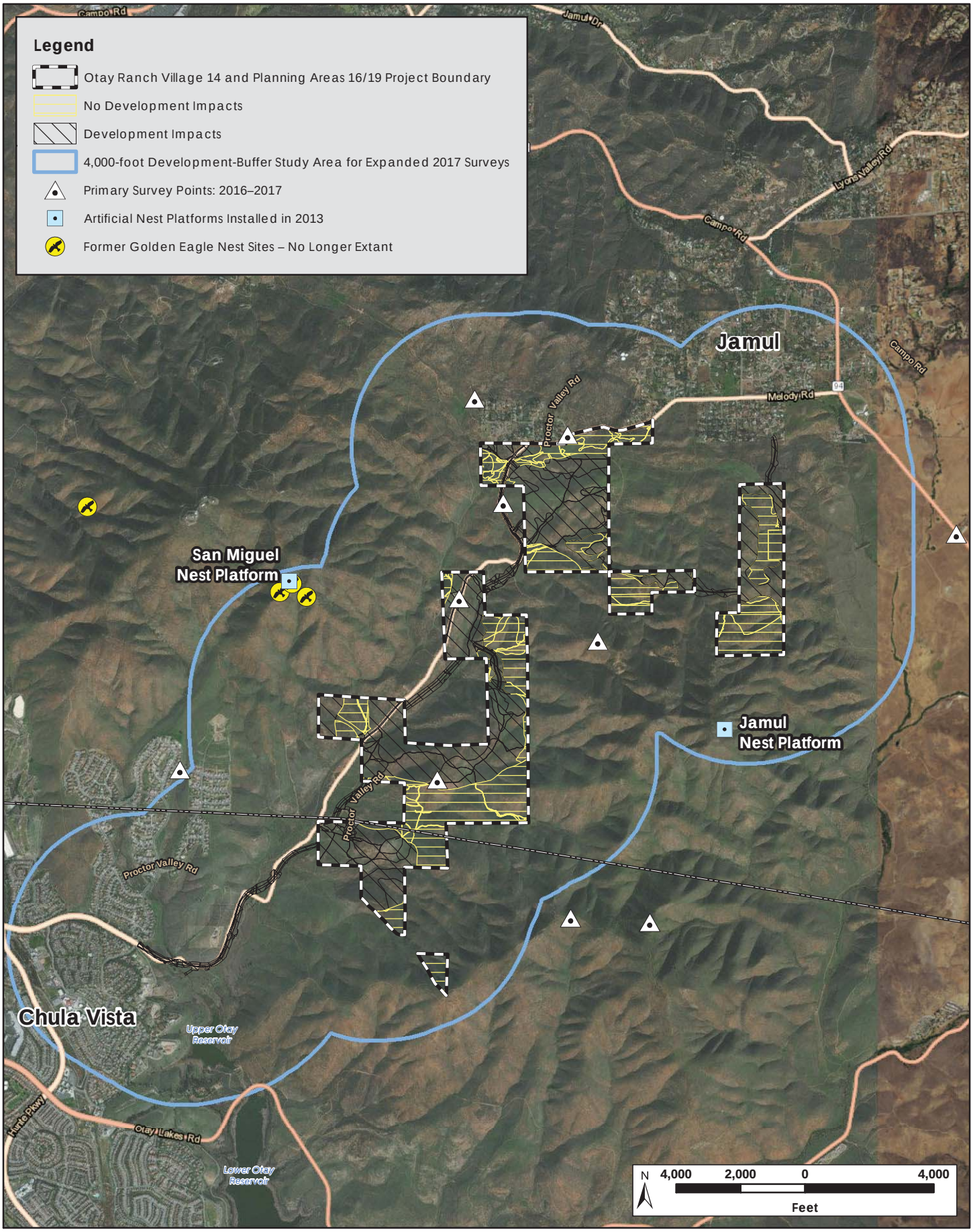
From: Jeff Smith, Jeff Zirpoli, Judd Howell, and Scott Terrill

Subject: Otay Ranch Village 14 Golden Eagle Nest Surveys 2016–2017

This report summarizes the results of surveys for golden eagle (*Aquila chrysaetos*) nests and breeding/territorial activity conducted in the vicinity of the proposed Otay Ranch Village 14 and Planning Areas 16/19 residential development project (Project—including development and preserve areas; Figure 1) in San Diego County during the 2016 and 2017 breeding seasons. The Project encompasses approximately 1,370.7 acres, of which 809.8 acres is proposed for development, including permanent and temporary impacts, offsite improvements, and roadways, utility corridors, and fuel management zones in what will otherwise remain open space. Of the remainder, at least 407.2 acres and potentially as much as 476.5 acres will become part of the Otay Ranch Preserve, which is described in the Multiple Species Conservation Plan (MSCP) adopted to help manage the impacts of large-scale residential development in western San Diego County (County of San Diego 1998). An additional 84.3 acres will be designated as Limited Development Areas that will remain as open space.

The MSCP and standard guidelines for evaluating project impacts promulgated by the County of San Diego stipulate that development be restricted within 4,000 feet of "active" golden eagle nests[1] (County of San Diego

[1] The term "active" is not defined in either referenced document and variable, often conflicting definitions have been applied to this term in describing and managing impacts to raptor nests, depending on the regulatory/management and temporal context (e.g., see Steenhof and Newton 2007; U.S. Fish and Wildlife Service 2009, 2013, 2016). Steenhof and Newton (2007) discourage continued use of the term because of this confusing history. Historically and most commonly, the term "active" has been used to describe nests that contain eggs or young (Postupalsky 1974). However, established golden eagle breeding pairs show high fidelity to their breeding territory, may occupy a territory for 20 years or more, typically maintain and variably use multiple alternative nests (which may be separated by substantial distances, depending on the density of breeding pairs, availability of nest substrates, and overall home range size), and often do not lay eggs every year (Kochert et al. 2002, Watson 2010). Therefore, where previously used nests are known to exist, the absence of eggs or young during a given breeding season does not confirm an unoccupied breeding territory nor the absence of an "active" breeding pair, only that no breeding attempt occurred that year (U.S. Fish and Wildlife Service 2009, 2013). For these reasons and for the purpose of maintaining no-development buffers to protect nesting eagles, the classification of golden eagle nests as "active" or "inactive" should reflect a multi-year assessment that accounts for the possibility of intermittent nesting, use of multiple alternative nests across years, and potential reuse intervals of 10 years or more for individual nests that persevere within occupied territories (Kochert and Steenhof 2012). In addition, breeding territories typically should not be considered abandoned unless rigorous annual monitoring confirms the absence of a breeding pair for at least several years (U.S. Fish and Wildlife Service et al. 2012).



N:\Projects3800\3802-01\Reports\Village 14\Figure 1 Study Area for GE Nest Survey - May 2017.mxd

H. T. HARVEY & ASSOCIATES
Ecological Consultants

Figure 1: Study Area for Golden Eagle Breeding Surveys Around the Proposed Otay Ranch Village 14 and Planning Areas 16/19 Residential Development Project

Otay Ranch Village 14 Golden Eagle Assessment (3802-01)
May 2017

1998: Table 3-5; County of San Diego 2010). Accordingly, our surveys focused on determining whether any golden eagle nests existed within 4,000 feet of the proposed development boundaries, and whether any potential golden eagle breeding pairs currently occupy the Project area. As defined in the MSCP, 97% of the Project landscape constitutes potential golden eagle foraging habitat, comprising Diegan coastal sage scrub, chaparral, and annual grassland (Dudek 2015); however, approximately 11% of the proposed development area is not suited to eagle foraging because the chaparral is too dense (H. T. Harvey & Associates 2017) and, with the exception of some scattered eucalyptus trees (*Eucalyptus* spp.), the Project site is devoid of potential eagle nest substrates.

Golden eagles were documented as breeders in the San Miguel Mountain/Mother Miguel Mountain area from the early 1900s through the early 1980s (Scott 1985). More recent monitoring confirmed that the territory was occupied and productive from 1990–2004, occupied but not productive from 2005–2007, and apparently abandoned after fall 2007 when the Harris' fire destroyed the primary nest on San Miguel Mountain (U.S. Fish and Wildlife Service et al. 2012, Martin and Terp 2014). Since then, in August 2013 the U.S. Fish and Wildlife Service (USFWS) installed an artificial nest platform on an outcrop located on the eastern flank of San Miguel Mountain near where the most recent historic nest was located, and in April 2013 the Bureau of Land Management (BLM) installed a second nest platform on an outcrop located on the east flank of the Jamul Mountains in an area where no previous nesting had been documented (Martin and Terp 2014). However, no nest building or breeding attempts (meaning eggs were laid) were confirmed on either San Miguel Mountain or in the Jamul Mountains in 2014 or 2015 (Martin and Terp 2014, Fisher and Tracey 2015)

Observers noted activity involving an adult eagle and a subadult in the area during spring 2014, including repeated activity in the general vicinity of the San Miguel nest platform and occasional movements between the areas with the two nest platforms (Martin and Terp 2014). U.S. Geological Survey (USGS) tracking data also demonstrated that the home ranges of a presumed pair of adult eagles overlapped the Project area between December 2014 and February 2016 (Tracey et al. 2016), but this pair's 2015 nesting area was believed to be on Otay Mountain (Fisher and Tracey 2015). The female died later in 2015 after traveling south into Baja California, whereas further tracking confirmed that the male held a territory in the Cedar Canyon area on Otay Mountain in 2016, but also wandered extensively in northwestern Baja California (Tracey et al. 2017). The new USGS data also indicated that this male eagle continued to exploit a large foraging home range that included the Jamul Mountains and Proctor Valley along its northern periphery. As currently presented, however, the USGS data do not allow for a more refined assessment of this eagle's activities in the Project area; e.g., to discern temporal patterns and proportional usage.

Other eagles tracked by the USGS also have resided in and passed through the Otay Lakes/Jamul Mountains area for variable periods (Tracey et al. 2016, 2017). A subadult male outfitted with a transmitter in Proctor Valley in December 2015 stayed in the valley for a short period, but then migrated south into Baja California and was not heard from again after February 2016. A subadult female outfitted in Proctor Valley in December 2015 initially resided primarily in the Jamul Mountains and farther south (to Otay Mountain), but also occasionally visited San Miguel Mountain (Tracey et al. 2016). Then she wandered extensively to the north, spent time in many different areas as far north as San Bernardino County, and apparently returned several times to the Jamul/Otay Mountains area (Tracey et al. 2017). Again, however, the overall temporal details of this eagle's activity and the relative importance of the Project area and Jamul Mountains are not readily discernable from the current USGS reports.

Survey Methods

In 2016, we conducted ground-based surveys on 30–31 March and 18 May 2016, covering an area that extended out 4,000 feet in all directions from a previously proposed project layout that consolidated the development footprint in central Proctor Valley. The March surveys were conducted by two persons and involved exploratory nest searches, focused 1–4-hour observations from strategic points, and habitat assessments traversing the study area while constantly keeping an eye out for eagle activity. Similarly, the May survey included ~6 hours of focused surveys by one person, but 9+ total hours of observation while in the study area. Given that the survey area contained no previously confirmed, extant golden eagle nests, conducting the two surveys in March and May provided sufficient coverage to confirm any newly constructed nests, verify whether any breeding pairs were still incubating in late March or raising young, and determine whether any eagles were strongly dedicated to maintaining a territory in the area (Pagel et al. 2010).

In 2017, we conducted additional ground based surveys on 5–7 January (~24 hours by two persons), 3–4 March (~16 hours by one person), and 26–27 April (~23 hours by two persons), to constitute a complete protocol-level survey of the Project area for evidence of territorial eagles and potential breeding activity (Pagel et al. 2010). These surveys encompassed a larger area extending out 4,000 feet from the boundaries of the current proposed Project development footprint (Figure 1), which fully encompassed the survey area covered in 2016. The surveys again involved a combination of focused 2–4 hour observations at specific locations, plus other general observation time while driving and hiking through the area.

The objective of these surveys was to use high-quality binoculars and spotting scopes to scour the relevant landscape from roadways and while hiking in relevant areas, and investigate all potential nesting areas in the study area for possible nests and evidence of territorial eagles and breeding activity. Our efforts focused on the 4,000-foot buffer area around the proposed development footprint, but also encompassed expanded areas in the Jamul Mountains to cover the nest platform area and other potential nesting habitat along the crest of those mountains, and a broader area along the eastern flank of San Miguel Mountain where suitable rock substrates exist and historical eagle nests were located (Figure 1).

In preparation for the initial 2016 surveys, we conducted a thorough virtual search of the relevant landscape using Google Earth® to identify areas with potentially suitable nest substrates (natural as well as towers associated with the Jamul Mountains transmission line), augmented by prior first-hand observations of the relevant landscape. During the initial March 2016 survey, our effort included: (1) focused, 1–4 hour observations for potential activity and nest sites in the vicinity of the two nest platforms and historical San Miguel Mountain nesting areas; (2) extended observations from several other strategic vantage points focused on other areas with potentially suitable nest substrates; and (3), where practical, hikes to more closely inspect certain areas for potential nests. The latter included hiking up onto the crest of the Jamul Mountains to inspect scattered potential nest trees and rock outcrops, and other wooded areas with potentially suitable nest substrates. During the May 2016 survey, our effort was limited to revisiting all areas of potential nesting habitat via remote observations using high-powered optics, again including extended observations for activity near the Jamul Mountains and San Miguel Mountain nest platform/historic nesting areas.

During the 2017 surveys, we repeated a similar approach that included extended 2–4 hour observations from strategic locations that provided broad overviews of the study landscape and all potential nesting areas (Figure 1). In both years, our survey efforts provided broad spatial and representative seasonal and diel coverage of the study area sufficient to ensure detection of territorial eagles and breeding activity (see Appendix A for a record of the survey effort).

Dr. Jeff Smith (JS), with 20 years of experience monitoring and studying the ecology of breeding golden eagles in the western United States, acted as lead surveyor during all surveys. Jeff Zirpoli (JZ) (M.Sc.), with 5 years of experience monitoring and studying the ecology of breeding golden eagles in California and Montana, assisted with most of the surveys.

Survey Results

Breeding Season 2016

During both the March and May 2016 surveys, the weather conditions were favorable for eagle activity. The March surveys commenced with the remnants of a modest rain event lingering in the survey area; however, the weather quickly cleared to fair skies the first morning and was sunny and warm for the rest of the survey. The weather was also warm and sunny during the May survey, with light to moderate westerly winds prevailing during both survey periods.

During the 3 days of surveys, the only golden eagle we observed was a single subadult (Basic III plumage; Bloom and Clark 2001, Liguori 2004), which JS observed briefly flying around and then perched in the Jamul Mountains near, but on the other side of the crest from, the Jamul platform. In contrast, we often observed red-tailed hawks (*Buteo jamaicensis*) and turkey vultures (*Cathartes aura*) in the area, as well as occasional Cooper's hawks (*Accipiter cooperii*), northern harriers (*Circus cyaneus*), and American kestrels (*Falco sparverius*).

During the March survey, we discerned no evidence of augmented nest material on either of the artificial nest platforms. When the USFWS and BLM installed the platforms, they added sparse stick wreaths to them and splashed white paint on the rocks behind and near them to simulate eagle nests and mute in an effort to attract potential breeders (Martin and Terp 2014). Our March observations suggested that some of these sticks may have been barely visible from below, but no substantial structure was visible on either platform. During the May survey, JS discerned no change in the appearance of the San Miguel platform. Conversely, although he discerned no further evidence of a built-up nest structure on the Jamul platform, JS clearly observed several sticks hanging over the edge of that platform in May, suggesting that the original wreath had been displaced. In both March and May, JS also observed a pair of common ravens (*Corvus corax*) in the immediate vicinity of the Jamul platform and, in May, one of those ravens was jumping around on the platform, suggesting that those birds may have contributed to the disarray. We also examined both areas carefully for evidence of fresh mute accumulations indicative of extended eagle presence, and found none. Therefore, we can be confident that no eagles nested successfully on either platform in 2016, and no eagles attempted to breed in either location.

We documented no other used or potential eagle nests anywhere in the surveyed area. This includes having carefully scanned, several times and from various vantage points, a broad area of potentially suitable outcrops and scattered trees along the eastern flank of San Miguel Mountain for evidence of nest structures and eagle presence. Although we were unable to hike through this area of San Diego National Wildlife Refuge to accomplish an intensive search for potential remnant nest structures, our effort was sufficient to confirm that no eagles were actively nesting on the east flank of San Miguel Mountain. Similarly, our efforts were sufficient to confirm that no eagles were actively nesting anywhere in the Jamul Mountains.

Breeding Season 2017

After an hour in the morning on 5 January 2017, rain and low clouds settled in and obscured the mountains and most of Proctor Valley, forcing us to abort our initial survey effort. The weather cleared the next day, however, and we were able to complete 2 days of surveys under favorable conditions. The survey conditions during March and April were entirely favorable, featuring cool to warm, breezy weather with no threat of precipitation.

On the first full day of surveys in January, JZ observed an adult golden eagle twice in the Jamul Mountains. Initially, he observed the eagle perched early in the morning on a low hilltop in the eastern foothills of the Jamul Mountains, approximately 0.6 miles southeast of the Jamul platform. An hour later, the eagle flew up and out of view along the upper western flank of the Jamul Mountains. A half hour later, most likely the same eagle soared back over the ridgetop from the north and landed again on a different rock about 600 feet from the Jamul platform, where it remained for the next 5 hours. We saw no other eagles during this 2+-day survey, and the single adult we did observe exhibited no signs of territorial behavior or nest-tending activity.

On the first afternoon of the March surveys, JS observed a single, young subadult (Basic I plumage) golden eagle atop the western flank of the Jamul Mountains, soaring around as it was being harassed by a juvenile red-tailed hawk. He did not observe this young eagle again the next day. Surveys the second day focused on both the northeastern Jamul Mountains and northern Proctor Valley. On that day, JS observed a single adult golden eagle again in the Jamul Mountains. He first detected this eagle while observing in Proctor Valley, when it appeared on the horizon above the main Jamul Mountains peak (the nest platform is located on the east side near this peak). The eagle spent 10–15 minutes moving back and forth along the upper west flank of the peak, being harassed by ravens and a red-tailed hawk, then rose up and rapidly moved south along the ridge and then out of view down toward Lower Otay Lake. This eagle was not carrying a telemetry backpack. Approximately 25 minutes later, JS briefly observed an eagle again moving at a low altitude up Proctor Valley, presuming that the same eagle circumnavigated the southwestern Jamul Mountains and then proceeded "stealthily" up Proctor Valley, nearly evading detection. At no time did this eagle exhibit any signs of territorial behavior, aggression towards other raptors, or nest building/tending activity. JS also observed a subadult bald eagle (*Haliaeetus leucocephalus*) pass through the San Miguel Mountain area during the second morning.

During the first morning of the April surveys, JZ spotted what may have been a distant golden eagle perched on a rock in the foothills of the northeastern Jamul Mountains, but which promptly took off and flew out of view

to the south without providing enough for a positive identification. The only other eagle we observed during this 2-day survey was another young subadult bald eagle that passed over northern Proctor Valley.

As part of our 2017 surveys, as in 2016, we also again repeatedly scoured, with binoculars and spotting scopes from strategic locations, all areas of potential nesting habitat within and near the 4,000-foot buffer area for any signs eagle nests or evidence of well-used perch sites with whitewash suggestive of regular occupancy. We detected no such evidence. In addition, we discerned no evidence of any nest building activity at either of the artificial platforms, and confirmed with John Martin of the USFWS (Martin 2017) that the trail cameras installed to monitor activity at the platforms have yet to reveal any eagle activity.

Conclusion

Our observations confirmed that a few subadult golden eagles occasionally occur in the Jamul Mountains, and suggested that a single non-telemetered adult may have taken up residence in the Jamul Mountains in 2017. However, following a collective total of 9 days of intensive surveys over two breeding seasons, generally involving two observers and covering a broad landscape area around the Jamul Mountains, the eastern flank of San Miguel Mountain, and the ridgeline north and west of Jamul, the dearth of observations in 2016 and only a few brief sightings in 2017 confirmed that no breeding or overtly territorial eagles occupied the area during either breeding season. The USGS tracking reports (Tracey et al. 2016, 2017) suggest that the overall foraging home range of the adult male that holds a breeding territory in Cedar Canyon often extends north to Proctor Valley; however, the currently available USGS reports do not allow for a refined evaluation of the relative importance of the Project area to this eagle. We do know that USGS staff observed some territorial displays in the area in late 2015/early 2016 (Kolar 2016). Regardless, clear indicators that (a) no golden eagles nested in the surveyed area in 2016 and 2017, and (b) no eagles were dedicated to establishing and maintaining a hold on a potential breeding territory during this period, include the following:

- A general scarcity of observations over two breeding seasons despite 9 days of intensive observations spread out across both breeding seasons during favorable weather
- An absence of territorial (i.e., displays and regular patrolling) and breeding behavior
- An absence of discernable nests and evidence (i.e., defecation whitewash or mute) indicating routine roosting on outcrops in potential nesting areas
- No observations of a potential breeding pair

In summary, although the overall monitoring record is incomplete, the available evidence suggests that no golden eagles have nested in the Project vicinity for more than 10 years and that no potential new breeding pairs have established a territory in the area since the San Miguel breeding territory was abandoned after 2007.

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Appendix A. Surveys Conducted in 2016 and 2017 to Monitor for Golden Eagle Territorial and Breeding Activity

Date	Location[1] and Focus	Period	Observer
30 March 2016	Proctor Valley, Jamul area, and Hwy 94 – several exploratory observation points focused on nest finding	08:30–17:00	Jeff Smith
30 March 2016	N Proctor Valley – eagle habitat assessment with attention to eagle sightings	08:30–17:00	Jeff Zirpoli
31 March 2016	Central and W Jamul Mountains – hiking and ridgetop monitoring	08:30–13:30	Jeff Smith
31 March 2016	NW Jamul Mountains – hiking and ridgetop monitoring	08:45–12:45	Jeff Zirpoli
31 March 2016	S Proctor Valley – eagle habitat assessment with attention to eagle sightings, and additional focused surveys for potential nests in selected areas	13:45–17:00	Jeff Smith
31 March 2016	Central and S Proctor Valley – eagle habitat assessment with attention to eagle sightings	13:00–17:00	Jeff Zirpoli
18 May 2016	Hwy 94 observation point – focus on NE Jamul Mountains and Jamul nest platform	09:00–11:00	Jeff Smith
18 May 2016	Observation points near Jamul – focus on NW Jamul Mountains, NE San Miguel Mountain, and ridges N and NW of Jamul	11:30–13:30	Jeff Smith
18 May 2016	Bella Lago residential area and S Proctor Valley – focus on E/SE flank of San Miguel Mountain, San Miguel nest platform and historic nest areas, and S Proctor Valley/SW Jamul Mountains	14:00–16:30	Jeff Smith
6 January 2017	Bella Lago residential area – focus on E/SE flank of San Miguel Mountain, San Miguel nest platform and historic nest areas, and S Proctor Valley/SW Jamul Mountains	07:30–10:30	Jeff Smith
6 January 2017	Hwy 94 observation point – focus on NE Jamul Mountains and Jamul nest platform	07:40–13:30	Jeff Zirpoli
6 January 2017	Central and W Jamul Mountains – hiking and ridgetop monitoring	11:30–16:00	Jeff Smith
6 January 2017	W of Jamul – focus on ridges N and NW of Jamul and NE San Miguel Mountain	14:00–16:40	Jeff Zirpoli
7 January 2017	N Proctor Valley hilltop – focus on N Proctor Valley, NW Jamul Mountains, NE San Miguel Mountain, and ridges N and NW of Jamul	07:35–09:35	Jeff Zirpoli
7 January 2017	W of Jamul – focus on ridges N and NW of Jamul and NE San Miguel Mountain	09:45–11:45	Jeff Zirpoli
7 January 2017	Hwy 94 observation point – focus on NE Jamul Mountains and Jamul nest platform	12:00–14:00	Jeff Zirpoli

2 March 2017	Hwy 94 observation point – focus on NE Jamul Mountains and Jamul nest platform	08:00–11:00	Jeff Smith
2 March 2017	N Proctor Valley hilltop – focus on N Proctor Valley, NW Jamul Mountains, NE San Miguel Mountain, and ridges N and NW of Jamul	11:40–14:40	Jeff Smith
2 March 2017	Central Proctor Valley – focus on E San Miguel Mountain nest platform and historic nesting areas, west-central Jamul Mountains, and central Proctor Valley	15:00–16:30	Jeff Smith
3 March 2017	Bella Lago residential area – focus on E/SE flank of San Miguel Mountain, San Miguel nest platform and historic nest areas, and S Proctor Valley/SW Jamul Mountains	08:00-11:00	Jeff Smith
3 March 2017	Upper Otay Lake – brief hike to look for possible nest sites in surrounding eucalyptus groves	11:15–12:15	Jeff Smith
3 March 2017	Central Proctor Valley hilltop – focus on central and S Proctor Valley, SW Jamul Mountains, and SE flank of San Miguel Mountain	12:30–15:30	Jeff Smith
3 March 2017	Hwy 94 observation point – focus on NE Jamul Mountains and Jamul nest platform	16:15–17:15	Jeff Smith
26 April 2017	Central and W Jamul Mountains – hiking and ridgetop monitoring	08:30–14:30	Jeff Smith
26 April 2017	Hwy 94 observation point – focus on NE Jamul Mountains and Jamul nest platform	08:35–12:05	Jeff Zirpoli
26 April 2017	N Proctor Valley hilltop – focus on N Proctor Valley, NW Jamul Mountains, NE San Miguel Mountain, and ridges N and NW of Jamul	12:30–16:30	Jeff Zirpoli
26 April 2017	Central Proctor Valley hilltop – focus on central and S Proctor Valley, SW Jamul Mountains, and SE flank of San Miguel Mountain	15:00–17:00	Jeff Smith
27 April 2017	N Proctor Valley hilltop – focus on N Proctor Valley, NW Jamul Mountains, NE San Miguel Mountain, and ridges N and NW of Jamul	08:15–11:15	Jeff Smith
27 April 2017	Bella Lago residential area – focus on E/SE flank of San Miguel Mountain, San Miguel nest platform and historic nest areas, and S Proctor Valley/SW Jamul Mountains	08:00–11:30	Jeff Zirpoli
27 April 2017	Hwy 94 observation point – focus on NE Jamul Mountains and Jamul nest platform	14:50–17:00	Jeff Smith

[1] See Figure 1 for locations of primary observation points.

H. T. HARVEY & ASSOCIATES
Ecological Consultants

Memorandum

May 22, 2017

To: David Hubbard, Rob Cameron, and Liz and Jim Jackson

From: Jeff Smith

Subject: Reports prepared to date by H.T. Harvey & Associate for Village 14 Project

Otay Ranch Village 14 GOEA Nest Survey Rpt 2016-2017_19May2017.pdf

- Two-year synopsis of nest survey efforts, with 2017 survey area expanded to correspond to Village 14 and Planning Areas 16/19 layout

Village 14 Response to County GOEA Issues_28Mar2017.pdf

- Responses to 18 questions derived from County consultations, based on Village 14 and Planning Areas 16/19 layout

Otay Ranch Village 14 GOEA Assmt EIR Memo Rpt v4_13Mar2017.pdf

- MSCP four-question memo based on current Village 14 and Planning Areas 16/19 layout

Otay Ranch Village 14 GOEA Foraging Habitat Analysis_31Dec2016.docx

- Modified draft begun to correspond to current Village 14 and Planning Areas 16/19 layout, but effort suspended due to uncertain need

Otay Ranch Village 14 GOEA Assmt EIR Memo Rpt_revised_23Jun2016.pdf

- MSCP four-question memo based on Village 14 only / land-exchange layout

Otay Ranch Village 14 GOEA Nest Survey Rpt 2016_03Jun2016.pdf

- Breeding surveys based on Village 14 only / land-exchange layout

Otay Ranch Village 14 GOEA Foraging Habitat Comparison_27Apr2016.pdf

- Report focused on assessing value to eagles of Village 14 only / land-exchange layout

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H. T. HARVEY & ASSOCIATES
Ecological Consultants

Memorandum

March 28, 2017

To: **David Hubbard**
Gatzke, Dillon & Ballance LLP

From: **Jeff Smith, Judd Howell, and Scott Terrill**

Subject: **Responses to Questions Posed by the County of San Diego Regarding the Otay Ranch Village 14 and Planning Areas 16/19 Project Golden Eagle Assessment**

The proposed Otay Ranch Village 14 and Planning Areas 16/19 Project (Project) encompasses 1,370.7 acres, including 86.9 acres of offsite improvement areas where Project-related development disturbance will occur. Of this total, 809.8 acres is proposed for development, including permanent and temporary impacts, offsite improvements, and roadways, utility corridors, and fuel management zones in what will otherwise remain open space. Conversely, at least 407.2 acres and potentially as much as 476.5 acres will be conserved as part of the overall MSCP/Otay Ranch Preserve, and an additional 84.3 acres will be designated as Limited Development Areas that will remain as open space. As defined in the MSCP, 97% of the Project landscape constitutes potential golden eagle foraging habitat, comprising Diegan coastal sage scrub, chaparral, and annual grassland habitats; however, approximately 11% of the proposed development area is not suited to eagle foraging because the chaparral is too dense.

Following are responses to questions posed by the County of San Diego about the Project and its potential to affect golden eagles.

1. **Confirm that there are no active nests within 4,000 feet of the Project development boundary.**

   Currently, no golden eagle nests exist within 4,000 feet of the Project development boundary, nor anywhere close to that distance from the Project site.

2. **Confirm the distance between the next nearest active nest and the Project development boundary.**

   Based on available data summarized in the USFWS 2012 MSCP Status Report, the nearest known recently active (2011) golden eagle nest is located ~5.4 miles to the south in the Cedar Canyon area near Otay Mountain. We do not currently have access to any more recent data about golden eagle nesting activity in outlying areas, but closer nesting activity has not been publically documented for more than a decade and no other golden eagle breeding territories besides San Miguel Mountain have ever contained known nests located closer than 4–5 miles from the proposed Project.

3. **Provide an opinion as to whether the proposed Project would result in human disturbance of any active golden eagle nest.**

   There is currently no potential for such disturbance to occur, because the closest known recently active nest is more than 5 miles away.

4. **Provide an opinion as to whether the proposed Project would place human disturbances within 4,000 feet of any active golden eagle nest.**

   There is currently no potential for such disturbance to occur, because the closest known recently active nest is more than 5 miles away.

5. **Confirm the distance between the former San Miguel Mountain nest site and the Project development boundary.**

   We do not have precise information concerning the locations of the historic nest sites used by golden eagles on San Miguel Mountain, none of which still exist. We do know, however, that there were three nests located in the same general vicinity as the artificial nest platform that the USFWS installed on the southeast flank of San Miguel Mountain in 2013 (D. Bittner personal communication, March 2017). The most recently used (2004) nest was located on another outcrop just below the artificial platform. This nest burned and the rock ledge it was on collapsed in the 2007 Harris fire. A second nest was located within 100 meters or less of the primary nest in the same general expanse of jumbled rocky outcrops. A third nest was located across the canyon to the southeast in another rocky outcrop area. These nests either disappeared previously or were also burned in the Harris fire. Given that none of these nests still exist and no new eagle nests have been built in the area since the 1990s, concern over the proximity of proposed development is largely irrelevant in the context of a CEQA evaluation. Nevertheless, for perspective, coarse measurements based on best-guess approximations of these historic nest locations places them within 3,065–3,541 feet from the nearest Project impact boundary (i.e., the nearest point where Project development will result in at least temporary development disturbance). Figure 1 illustrates the zone of overlap where development impacts would occur within 4,000 feet of the estimated locations of these three historic San Miguel Mountain eagle nests. The area of overlap encompasses 16.4 acres constituting two 4–5 acre residential lots, portions of two other adjacent large lots, a small segment of a roadway that will serve as the access route for these four lots across an intervening section of Preserve, and the back corner of what will become a public park.

6. **Confirm the distance between the former San Miguel Mountain nest site and the nearest proposed "human disturbance" as shown in the Project site plan.**

   As framed, the answer to this question is the same as for Question 5, in that we equate "project development boundary" with "nearest proposed human disturbance."

7. **Confirm that the San Miguel Mountain nest site platform was destroyed and has not been rebuilt or reestablished.**

   The natural nest that was last used (in 2004) by golden eagles in the San Miguel Mountain breeding territory was burned in the 2007 Harris fire, and at that time the rock ledge the nest was on also fractured and collapsed. The former eagle pair remained on territory but initiated no breeding attempts from 2005–2007, and then

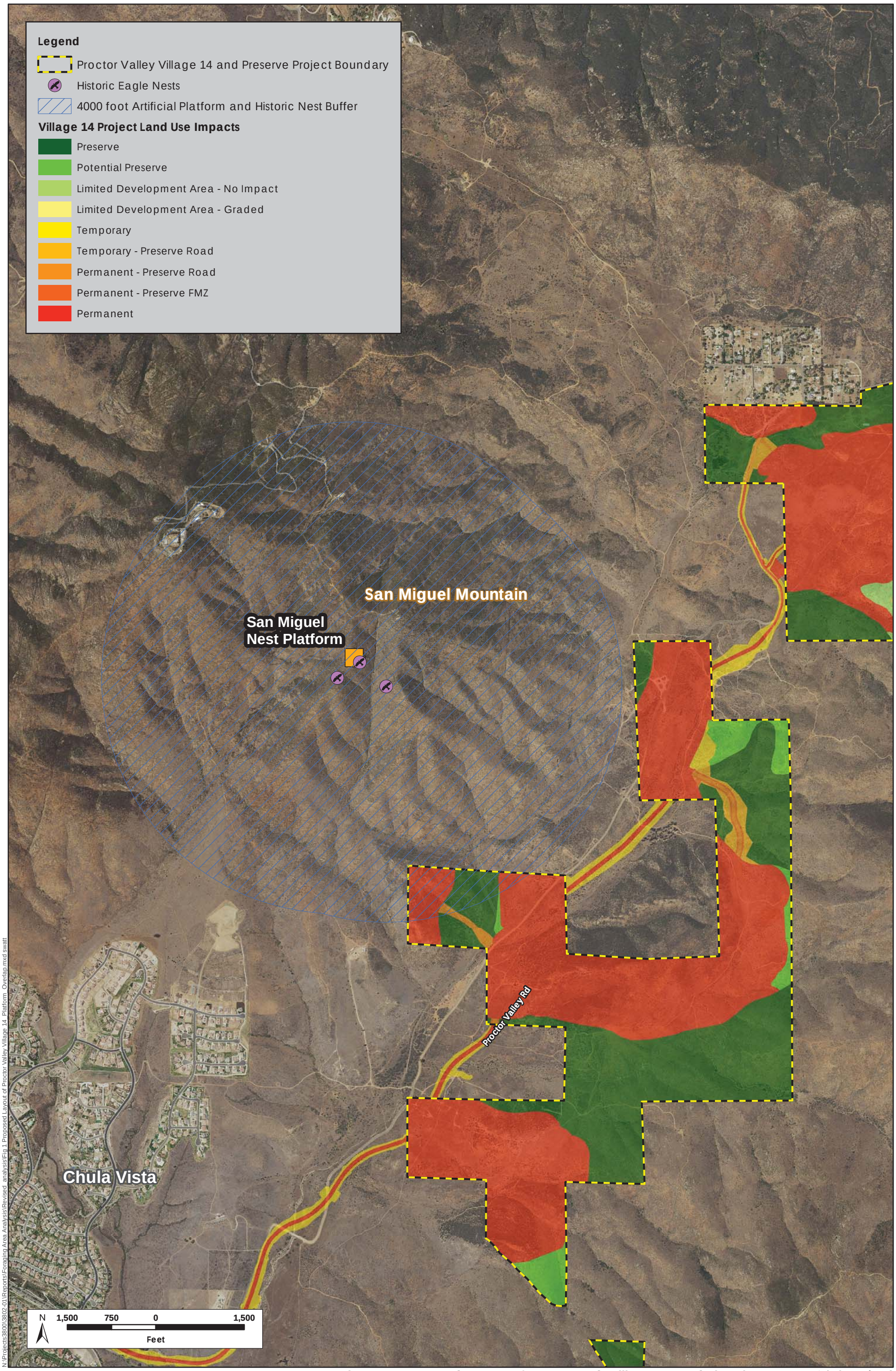

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Figure 1. Proposed Layout of Otay Ranch Village 14 and Planning Areas 16/19 Project Showing Development Overlap Zone Within 4,000 Feet of Artificial Nest Platform and Historic Eagle Nests on San Miguel Mountain

Otay Ranch Village 14 Revised Golden Eagle Foraging Area Analysis (3802-01)
March 2017

abandoned the territory after the fall 2007 fire. No former nests still exist and no new eagle nests have been built in this former nesting area, including on the artificial nest platform the USFWS installed in the area.

8. **Confirm that the San Miguel Mountain breeding territory meets the criteria of an "abandoned" or "inactive" territory.**

   There is no formal definition for what constitutes an "abandoned/inactive" golden eagle breeding territory (which may include several alternative nests—the historic case over the years in the San Miguel Mountain territory), but confirmation that no breeding-age pair of eagles has occupied a former breeding territory for 4 years or more is generally a strong indicator that the territory has been abandoned. The evidence at hand suggests that the former San Miguel breeding territory has not been occupied by a breeding pair of eagles since 2007. No known breeding attempt (meaning eggs were laid) has occurred on San Miguel Mountain since 2004 and all former nests no longer exist; therefore, the need to distinguish between active/used (contains eggs or young) and inactive/unused (not used during the current breeding season) nests is moot.

9. **Confirm the distance between the USFWS artificial nesting platform on San Miguel Mountain and the nearest Project development boundary.**

   ~3,666 feet. Figure 2 illustrates the zone of overlap where development impacts would occur within 4,000 feet of the artificial nest platform on San Miguel Mountain. The area of overlap encompasses approximately 4 acres constituting portions of two 4–5-acre residential lots where no grading or other physical development disturbance will occur.

10. **Confirm the distance between the USFWS artificial nesting platform on San Miguel Mountain and the nearest proposed "human disturbance" as shown in the Project site plan.**

    As framed, the answer to this question is the same as for Question 9, in that we equate "project development boundary" with "nearest proposed human disturbance."

11. **Confirm that no golden eagles have established a nest at the USFWS artificial platform on San Miguel Mountain.**

    No golden eagle nest has been constructed on the San Miguel artificial nest platform. This has been confirmed both by H.T. Harvey & Associates visual observations during the 2016 and 2017 breeding seasons, as well as by an absence of eagle activity documented by the USFWS trail camera that is focused on the platform (J. Martin personal communication, March 2017).

12. **Confirm the distance between the USFWS/BLM artificial nesting platform in the Jamul Mountains and the nearest Project Development boundary.**

    ~3,916 feet to the nearest permanent or temporary impact boundary; 3,666 feet to the nearest "limited development area" (LDA) boundary. Figure 2 illustrates the zone of overlap where development impacts would occur within 4,000 feet of the artificial nest platform in the Jamul Mountains. The area of overlap comprises 0.3 acres of one residential-lot backyard, where no grading or physical development disturbance will occur, plus 5.2 acres designated as LDA that will remain as undisturbed open space.

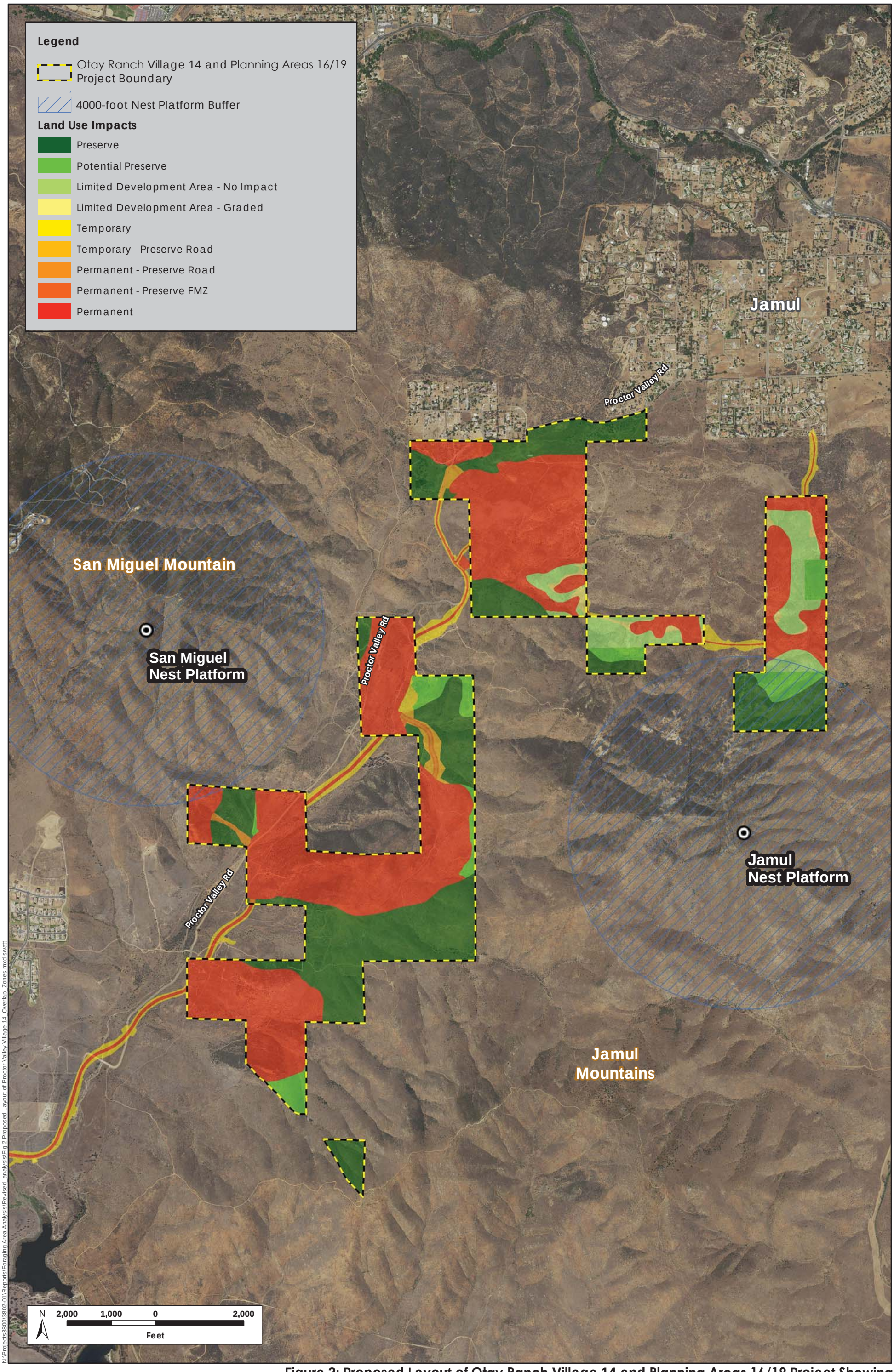


Figure 2: Proposed Layout of Otay Ranch Village 14 and Planning Areas 16/19 Project Showing Development Overlap Zones Within 4,000 Feet of Two Artificial Nesting Platforms Installed in 2013

Otay Ranch Village 14 Revised Golden Eagle Foraging Area Analysis (3802-01)

March 2017

H. T. HARVEY & ASSOCIATES
Ecological Consultants

13. **Confirm that no golden eagles have established a nest at the USFWS/BLM artificial platform in the Jamul Mountains.**

No golden eagle nest has been constructed on the Jamul Mountains platform. This has been confirmed both by H.T. Harvey & Associates visual observations during the 2016 and 2017 breeding seasons, as well as by an absence of eagle activity documented by the USFWS trail camera that is focused on the platform (J. Martin personal communication, March 2017).

14. **Provide an opinion as to whether the golden eagles observed foraging on the Project site are defending a breeding territory or merely foraging within their home range.**

Based on the periodic 2-day surveys we conducted during the 2016 and 2017 breeding seasons, we have recorded no evidence of definitive territorial activity in the San Miguel Mountain, Jamul Mountains, or Proctor Valley areas. The few eagles that we have observed in the area, as well as the USGS tracking data, confirm that transient subadult and adult eagles occur in the area at least seasonally and periodically. In addition, the initial USGS data suggested that the overall foraging home ranges of eagles nesting in Cedar Canyon at least temporarily encompassed the Jamul Mountains and Proctor Valley areas. Further, our two recent sightings of an adult eagle in the Jamul Mountains, with the March occurrence definitely involving a non-telemetered eagle, suggest the possibility that a floater adult may have taken up residence in the Jamul Mountains in 2017. Again, however, we have witnessed no signs of territorial displays, other overt territorial behavior, or any eagle nesting activity in the area during the past two breeding seasons.

15. **Provide an opinion as to whether the proposed Project would result in lethal take of any golden eagle.**

The Project would not disturb any eagle breeding activity and the resulting loss of peripheral foraging habitat would be insubstantial for the currently known and established breeders in the MSCP planning area. Therefore, the potential for breeding disturbance and habitat loss to result in lethal take within the area breeding population is essentially nonexistent. Similarly, the potential for the loss of 810 acres of foraging habitat to result in lethal take of any local floater (nonbreeding adults), transient, or seasonally resident eagles that forage in the Project area also is vanishingly small, because such birds would still have broad access to other areas of high quality foraging habitat within the Preserve.

16. **Provide an opinion as to whether the MSCP preserve, as augmented by the acreage conveyed by the proposed Project, provides adequate forage to sustain the golden eagles that currently include the Project site within their home range.**

Based on the available and accessible evidence, it is not clear that any individual eagles currently rely on the Project area as foraging habitat consistently or perennially. Although the initial USGS tracking data suggested that the overall home range of the former Cedar Canyon breeding pair included Proctor Valley and the Jamul Mountains, that female died and our recent observations revealed a non-telemetered adult in the area. Access to more recent USGS tracking data may help clarify the current situation; however, those data are not publically available. Regardless, given that Proctor Valley does not currently overlap any pair's core breeding territory and the closest known recently active nests are more than 5 miles away, if a pair nesting in the San

Ysidro Mountains routinely forages in Proctor Valley, the loss of even a few thousand acres of foraging habitat (the Project development footprint is approximately 810 acres and, by the MSCP definition, 97% of this area constitutes golden eagle foraging habitat) in a peripheral portion of that pair's overall home range would not exceed the 20% threshold of foraging area loss identified as significant in the MSCP. Moreover, such a pair would continue to have ready access to large acreages of suitable foraging habitat within the MSCP Preserve in the Jamul Mountains, the foothills of Proctor Valley, possibly around San Miguel Mountain, and in the large expanse of Preserve habitat located between the Jamul Mountains and San Ysidro Mountains. Therefore, developing the Project would not significantly compromise the ability of any current breeding pairs to sustain themselves.

17. **Confirm your earlier opinion that the USGS data, while interesting for purposes of studying golden eagle behavior over the long-term, is incomplete and includes no analytical component, making it of marginal use in a project-specific impact assessment.**

    A robust assessment of eagle usage patterns and the importance of the Project site to tagged eagles would require a much more detailed evaluation of the gathered data than is possible based solely on the coarse-scale summary maps—with no interpretation—presented in the initial 2016 USGS report. Most importantly, discerning whether usage of the Project area by tagged adults that appear to be year-round residents is consistent throughout the year or seasonally variable, and using available analytical techniques to effectively portray the relative density of usage in different areas, are critical missing ingredients that would be required to use the data for assessing the relative importance of the Project area to resident breeders.

18. **Confirm your earlier opinion that the project site's golden eagle habitat is sub-optimal due to density of chaparral and loamy/cobbly soils.**

    This statement applies ONLY to the Otay Ranch Village 14 portion of the proposed Project development area in the central portion of Proctor Valley. Planning Areas 16 and 19 contain greater proportions and extents of high-quality coastal sage scrub and annual grassland habitat. There is definitely foraging habitat for golden eagles in the Village 14 area of central Proctor Valley, which in some areas is relatively high quality. However, a substantial portion of the habitat in the vicinity of the Village 14 development area is not golden eagle foraging habitat because the chaparral is too dense. In addition, because of the soil characteristics, most of the bottomland portions of central Proctor Valley where much of the development will occur is not well suited to ground squirrels compared to other neighboring foothill areas (as well as the grazed grassland and coastal scrub habitats located primarily in Planning Area 16). This does not mean that there are no foraging opportunities for eagles in these areas, but it limits the potential diversity of prey compared to other foothill areas that will be preserved.

APPENDIX D

Quino Checkerspot Butterfly Survey Reports (HELIX)

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942
619.462.1515 **tel**
619.462.0552 **fax**
www.**helixepi**.com

October 2~~February 5~~, 2018 JPD-08

Mr. James Jackson
Jackson Pendo Development Company
2245 San Diego Avenue, Suite 223
San Diego, CA 92110

Subject: Quino Checkerspot Butterfly Status on Otay Ranch Village 14 and Planning Areas 16/19 Development Footprint and Conserved Footprint

Dear Mr. Jackson:

This letter summarizes the results of habitat assessments and protocol surveys for the Quino checkerspot butterfly (*Euphydryas editha quino*; QCB) that HELIX Environmental Planning, Inc. (HELIX) conducted on the Otay Ranch Village 14 and Planning Areas (PA) 16/19 project (Project). It also provides HELIX's evaluation of the status of the species on site. As explained below, no QCB individuals have been observed on the Project site since 2001, and the proposed Project will disturb approximately 5.38 acres of QCB host plant locations scattered throughout the approximately ~~808~~809.1-acre Development Footprint (defined below). For purposes specific to this letter, the following definitions apply:

Development Footprint: The combined Development Footprint of Village 14 and PA 16/19 is approximately **~~808~~809.1 acres**. The categories described as On-site Development, Off-site Development, Preserve Impacted, and Limited Development Area Impacted (LDA; see below) are combined and referred to as "Development Footprint" in the remainder of this letter.

> On-site Development: The **689.2 acres** of development planned within the Applicant's ownership in Village 14 and PA 16/19, including 416.6 acres within Village 14, 256.3 acres within PA 16, and 16.3 acres within PA 19.
>
> Off-site Development: This includes off-site improvements associated with Proctor Valley Road and access roads for Village 14 and PA 16/19. Both temporary and permanent impacts are included and total approximately **85.4 acres**.

Multiple Species Conservation Program (MSCP) Preserve Impacted: This includes improvements through the Preserve (defined below). Both temporary and permanent impacts are included and total approximately **21.9 acres**.

Limited Development Area Impacted: Limited Development Areas (LDA) were established as part of the previously-approved Otay Ranch General Development Plan (GDP) and are required to have deed restrictions. The areas classified as LDA Impacted occur in (i) PA 16 where grading is proposed, and (ii) one area of PA 16 that is considered too isolated to provide conservation value for the QCB. The LDA Impacted areas total **~~1~~12.6 acres**.

Conserved Footprint: The combined Conserved Footprint of Village 14 and PA 16/19 is approximately **~~560~~559.9 acres**. The categories described as MSCP Preserve, Conserved Open Space, and Limited Development Area Unimpacted (see below) are combined and referred to as "Conserved Footprint" in the remainder of this letter.

MSCP Preserve: Includes the designated Village 14 preserve and Planning Area 16/19 preserve that were established as part of the Otay Ranch Resource Management Plan (RMP). The MSCP Preserve areas total **404.8** acres.

Conserved Open Space: This includes areas which, although mapped as GDP development and zoned accordingly, are not proposed for development, remain in their natural condition, and are suitable for long-term conservation. The Conserved Open Space areas total **72.4** acres.

Limited Development Area Unimpacted: LDAs were established as part of the GDP and are required to have deed restrictions. LDAs in PA 16 with no proposed grading or development (LDA Non-impacted), which provide potential long-term conservation value for the QCB, are classified as LDA Unimpacted. The LDA Non-impacted areas that would contribute to the QCB Conserved Footprint total **~~83~~82.7** acres.

QCB Host Plants: Several species of host plants were mapped on site, including dwarf plantain (*Plantago erecta*), desert plantain (*Plantago patagonica*), owl's clover (*Castilleja exserta* and *C. densiflora*), Chinese houses (*Collinsia* spp.), and Coulter's snapdragon (*Antirrhinum coulterianum*) (Exhibit 1). The analysis in this letter relies on the size and locations of dwarf plantain as this is the overwhelmingly dominant host plant species. The other species are minor components and will not be discussed further in this analysis.

Field assessments and surveys have been conducted to determine overall QCB habitat values for the Project because QCB is not a covered species in the MSCP. This letter is presented in the following outline:

I. EXECUTIVE SUMMARY

Between 2014 and 2016, Dudek and HELIX conducted three QCB habitat assessments in the Development and Conserved Footprints (Dudek in 2014 and HELIX in 2015 and 2016). HELIX conducted protocol surveys for QCB adults following the U.S. Fish and Wildlife Service (USFWS) survey guidelines on the Village 14 portion of the Development Footprint in 2015[1] and on the Development and Conserved Footprints in 2016.[2] Results are summarized as follows and are provided in Table 1:

a. No adult QCB or larvae were observed during any field work or protocol surveys in 2014, 2015, or 2016.

b. Thus, neither the Development Footprint nor the Conserved Footprint is currently occupied by QCB.

c. There were multiple documented QCB sightings less than one mile from the Project survey area in 2016. This indicates that conditions in 2016 were suitable for QCB presence and activity; yet, no QCB were observed at the Project site.

d. There were multiple documented QCB sightings by USFWS immediately adjacent to the Project in 2017, including the area immediately west of Proctor Valley Road where QCB were observed in 2006 through 2008. This indicates that QCB are still present in at least low numbers in the vicinity; these sightings do not change the overall conclusions reached from the intensive 2015 and 2016 survey efforts on the site.

e. Based on the 2016 HELIX QCB resource mapping, the Project impacts to QCB host plant areas total 5.38 acres scattered across the ~~808~~809.1-acre Development Footprint.

f. The host plants on site are very patchy in distribution within a matrix of chaparral and sage scrub communities. Given the scattered QCB resources across the Development Footprint in an exceptional year for QCB host plants (2015) and in an above-average year for QCB host plants (2016), neither the Development Footprint nor the Conserved Footprint is expected to support a core population of QCB.

[1] HELIX Environmental Planning, Inc. (HELIX). 2015. Otay Ranch Proctor Valley Village and Preserve Quino Checkerspot Butterfly Survey Report. June 3.
[2] HELIX. 2016. Otay Ranch Proctor Valley Village and Preserve Quino Checkerspot Butterfly Survey Report. May 13.

g. Most of the areas with higher densities of host plants occurred: (a) within small openings (often disturbed areas) of larger tracts of chaparral, (b) within sage scrub and non-native grassland areas, or (c) at locations adjacent to areas excluded from surveys because they were considered too dense to support QCB.

h. Although the extent of suitable QCB habitat is not limited to the host plant patches, the patchy distribution of the plants, coupled with the significant amount of chaparral on the site, suggests that future QCB use of the site, if any, would be limited.

i. There is substantial habitat within the proposed Conserved Footprint that could support QCB in the future. This habitat is of value to the species because it is potentially suitable for future QCB use and is connected to other areas of suitable habitat that are preserved. The habitat within the Conserved Footprint, when combined with the additional conservation land that the applicant must convey to the County under the Otay Ranch RMP, provides adequate conservation of QCB resources and thus sufficiently mitigates the habitat lost through implementation of the Project. This is because the Conserved Footprint, along with the RMP-required conveyance, will preserve large blocks of habitat capable of supporting QCB (predominantly coastal sage scrub containing hilltops and QCB resources that are contiguous with other open space).

j. The Project will not preclude QCB conservation in the region because (1) there are limited historic QCB locations on site, (2) the Project is not considered a core area by the USFWS, and (3) on-site conservation, in addition to the RMP conveyance obligations, will contribute to larger scale conservation of the QCB within the south San Diego County region through maintenance of connectivity between areas of known QCB populations.

Table 1
RECAP OF QUINO CHECKERSPOT BUTTERFLY ASSESSMENT/SURVEYS

DESCRIPTION	DEVELOPMENT FOOTPRINT	CONSERVED FOOTPRINT
Total Acres (All Habitat Types)		
Village 14	416.6	0
PA 16/19	272.6	0
LDA Impacted	~~11~~12.6	0
MSCP Preserve Impacted	21.9	0
Off sites	85.4	0
MSCP Preserve	0	404.8
Conserved Open Space	0	72.4
LDA Non-impacted	0	~~83~~82.7
TOTAL[a]	**~~808~~809.1**	**~~560~~559.9**

Table 1 (cont.)
RECAP OF QCB ASSESSMENT/SURVEYS

DESCRIPTION	DEVELOPMENT FOOTPRINT	CONSERVED FOOTPRINT
Predominant Habitat		
Chamise Chaparral	249.6 31%	59.0 11%
Diegan Coastal Sage Scrub	~~431~~432.6 53%	~~372.1~~371.2 66%
Non-native Grassland	82.5 10%	29.7 5%
Southern Mixed Chaparral	15.9 2%	85.0 15%
Other	28.4 4%	15.0 3%
TOTAL[a]	**~~808~~809.1**	**~~560~~559.9**
Acres excluded from QCB Surveys		
HELIX 2016	14.4 2%	6.2 1%
HELIX 2015[b]	118.6 15%	72.4 13%
Acreage of Potential QCB Habitat[c]		
HELIX 2016	~~793~~794.7 98%	~~554~~553.7 99%
HELIX 2015[b]	Comprehensive mapping not completed	Comprehensive mapping not completed
Mapped Host Plant Acres (Cumulative Acres Based on HELIX 2016)	Village 14 – 3.41 ac PA 16 – 0.67 ac PA 19 – 0 LDA Impacted – 0.02 MSCP Preserve Impacted – 0.18 Off sites – 1.11 **TOTAL**[a] **– 5.38 acres** scattered & patchy	MSCP Preserve – 1.21 Conserved O.S. – 1.08 LDA Non-Impacted – 0.01 **TOTAL**[a] **– 2.30 acres** scattered & patchy
Current Sightings (2014-2017[d])	No sightings documented between 2014-2016. In 2017, the USFWS incidentally sighted 1 location immediately west of Proctor Valley Road (4 QCB), 1 location east of Proctor Valley Road (1 QCB), 1 location west of Village 14 (2 QCB), and 1 location west of PA 16 (1 QCB).	No sightings documented between 2014-2016. The locations incidentally sighted in 2017 by USFWS were also in the vicinity of the Conserved Footprint.

Table 1 (cont.) **RECAP OF QCB ASSESSMENT/SURVEYS**		
DESCRIPTION	**DEVELOPMENT FOOTPRINT**	**CONSERVED FOOTPRINT**
Historical Sightings	1 location (2001) and 3 nearby locations along Proctor Valley Road (1990, 1990, and 2006) and 1 location near PA 16 (2001). Exhibit 1 provides the locations of the historic QCB sightings.	Several locations near the southernmost portion of the MSCP Preserve in Village 14 (2000, 2009, 2011); 1 location east of the Village 14 MSCP Preserve and Conserved Open Space (2001). As was discussed for the Development Footprint, there was 1 location adjacent to the PA 16 portion of the MSCP Preserve (2001). Exhibit 1 provides the locations of the historic QCB sightings.

a. Totals may be off due to rounding.
b. PA 16/19 were not included in the 2015 assessment. Of the 415 total acres evaluated by HELIX in 2015 for Village 14, 122.2 were excluded. A total acreage of potential QCB habitat is not provided since PA 16/19 were not evaluated in 2015.
c. Potential habitat is defined as the Total Acres minus the Areas excluded from QCB Surveys. Potential Habitat is the acreage that was surveyed for QCB.
d. Protocol surveys were conducted in 2015 and 2016 and no QCB were documented; observations from 2017 are from incidental sightings by USFWS, as reported in the USFWS GIS database.

II. DESCRIPTION OF QUINO CHECKERSPOT BUTTERFLY HABITAT ASSESSMENTS/SURVEYS (2014-2016)

HELIX 2016 Field Reconnaissance

a. February 2016 QCB Habitat Assessment: HELIX completed a site habitat assessment in accordance with the 2016 Quino Checkerspot Butterfly Survey Protocol that was developed in coordination with the USFWS, County of San Diego, and the Building Industry Association (hereafter referred to as the "2016 USFWS Survey Protocol").[3] The study area comprised the proposed Development Footprint and Conserved Footprint (Exhibit 1), including portions of State of California lands adjacent to the project boundary.[4] The purpose of the site assessment was to determine how much of the total Development Footprint and Conserved Footprint contained habitat that could support QCB and thus should be surveyed. Habitat that was not likely to support QCB was

[3] USFWS. 2016. Proposed 2016 Quino Checkerspot Butterfly Survey Protocol. February.
[4] The majority of the State of California lands will not be discussed in this assessment as they are excluded from the Proposed Project. Only the State lands within the Proctor Valley Road alignment and access roads are addressed.

excluded. Habitat within the study area was evaluated on foot. Areas were excluded based on, and in accordance with, guidance provided in the 2016 USFWS Survey Protocol, and then mapped on an aerial photograph as required by the protocol. Several different aerial photographs, including Google Earth and Bing Maps, were used to aid in assessing canopy cover and habitat density, as well as to locate suitable openings in habitat. Based on this habitat assessment and consultation with USFWS, approximately 14.4 acres of the ~~808~~809.1-acre Development Footprint were considered excluded areas and removed from further consideration in QCB surveys, leaving a total of ~~793~~794.7 acres to be surveyed for QCB within the Development Footprint. This same evaluation process indicated that 6.2 acres of the ~~560~~559.9-acre Conserved Footprint should also be excluded, leaving a total of ~~554~~553.7 acres within the Conserved Footprint to be surveyed for QCB. The excluded areas represent dense patches of chamise chaparral or southern mixed chaparral, developed areas, and eucalyptus woodland. Dense patches of excluded chaparral represented closed-canopy vegetation where the branches from shrubs overlapped, leaving no open space areas and preventing physical access to the area (Exhibit 3). Areas where there were suitable openings in the vegetation at least within 100 meters of each other were included in the survey area. Absent the excluded areas, the total 2016 survey area associated with the Proposed Project was 1,348.4 acres. This 1,348.4-acre QCB survey area was divided into smaller areas and distributed amongst the surveyors.

b. February 2016 Host Plant Mapping: Using a Global Positioning System (GPS) HELIX mapped the locations and approximate number of individuals of QCB host plants within the 1,350-acre survey area (i.e., within the Development and Conserved Footprints) in February 2016, prior to the start of the 2016 flight season. Host plant mapping was updated during the 2016 protocol surveys as changes in field conditions were noted. If host plants occurred in areas *smaller* than 250 square feet, they were mapped as "points".[5] If the host plants occurred in areas *greater* than 250 square feet, they were mapped as "patches". For both points and patches, the following density categories were used: *Low* (1-100 plants); *Medium* (100-1,000 plants); and *High* (1,000-10,000 plants). Nearly all of the areas mapped as Low or Medium consisted of points (i.e., in locations less than 250 square feet in size). Areas mapped as High also tended to consist of points, but there were some patches as well, ranging from 250 square feet (0.006 acre) to 1.43 acres in size. Nearly all of the owl's clover (*Castilleja* spp.) was mapped as points, with one patch mapped that was larger than 250 square feet; the owl's clover generally consisted of patches containing less than 10 individuals. Because of the limit amount of owl's clover across the site, only dwarf plantain will be discussed in the remainder of the letter.

[5] For the purposes of incorporating the acreage of point locations into the Mapped Host Plant Acres listed in Table 1, HELIX used the midpoint of the range (i.e., 125 square feet) as the average host plant size for each mapped point, for both the Development and Conserved Footprints.

Permitted QCB biologists considered the host plants that emerged in 2016 to be above average throughout San Diego County; it should be noted that host plant conditions in 2015 were considered to be representative of an exceptional year (see HELIX 2015 Field Reconnaissance, Section f below).

c. 2016 Protocol Surveys for QCB Individuals: HELIX and a team of permitted subconsultants conducted protocol surveys for QCB individuals within the Development and Conserved Footprints. Surveys began on February 24, 2016, and continued through March 31, 2016. Surveys began following the first observation of adult QCB in San Diego County (reported by Korey Klutz [Klutz Biological Consulting] on February 22 at east Otay Mesa [Quino Biologists United 2016]). Surveys were discontinued after the fifth survey week, in coordination with USFWS personnel (email from Eric Porter to Rob Cameron dated April 4, 2016), based on the lack of recent QCB sightings, which indicated that the flight season along the coastal regions had come to an end. The last, fresh QCB sighting in the County was reported on March 17, two weeks prior to the last survey, when a QCB was observed at San Vicente Reservoir. The last reported QCB sighting of a single worn individual occurred on March 25 in Marron Valley, which reinforced that the flight season was nearing completion. The surveys conducted on the Project site were negative for both QCB adults or larvae (i.e., no QCB adults or larvae were observed).[2]

HELIX 2015 Field Reconnaissance

a. February 2015 QCB Habitat Assessment: HELIX's 2015 habitat assessment was conducted in February, prior to the start of the flight season, and included the Village 14 Development Footprint and Proctor Valley Road alignments and an appropriate buffer, and also included portions of State of California lands adjacent to the project boundary. The buffer was determined in coordination with the project's design engineer based on the potential for design changes related to the Village 14 footprint at that time (generally about a 100-foot buffer from the potential Village 14 footprint at that time). It should be noted that while a 100-foot buffer was included in the 2015 habitat assessment and subsequent QCB protocol surveys, subsequent changes to the project design occurred, which resulted in small portions of the Development Footprint not being surveyed in 2015 (although the areas were surveyed in 2016). The State of California lands will not be discussed in this assessment as they are excluded from the Proposed Project. PA 16/19 were not included in the 2015 assessment. The purpose of the habitat assessment was to exclude portions of the project that do not support QCB suitable habitat based on USFWS survey protocol[6], as shown in Figure 1 and detailed in the 2015 QCB survey report.[1] Of the 415 total acres evaluated by HELIX in 2015, 119.2 acres within the footprint were excluded. Therefore, 295.8 acres were part of the protocol surveys.

b. February-April 2015 Protocol Surveys within Development Footprint: HELIX and a team of permitted subconsultants conducted protocol surveys for the Village 14 Development

[6] USFWS. 2014. Quino Checkerspot Butterfly (*Euphydryas editha quino*) Survey Protocol. December.

Footprint, including potential Proctor Valley Road realignment areas and the appropriate buffer described in the February 2015 QCB Habitat Assessment section above, over a seven-week period between February 17 and April 2, 2015. Protocol surveys were not conducted in the proposed Conserved Footprint in Village 14 or in PA 16/19. After consultation with the USFWS, surveys were stopped the first week of April due to deteriorating host plant conditions and because of small number of QCB sightings in San Diego County, including areas known to support the species. No QCB adults or larvae were documented on the project site during the 2015 surveys.[1]

Dudek and Associates (Dudek) Field Reconnaissance (2014)

a. February 2014 Habitat Assessment: Dudek conducted a preliminary assessment and QCB host plant mapping (Exhibit 2).

b. March 2014 Focused Host Plant Assessment: At the request of the USFWS, Dudek conducted a more focused QCB host plant assessment for the portions of the site that had the highest probability for supporting host plants. Four QCB host plant patches were mapped in 2014 and are provided on Exhibit 2 and labeled as "Quino Host Plant (Dudek)". It should be noted that due to the lack of 2014 QCB flight season, protocol level adult QCB surveys were not conducted. No QCB or larvae were observed by Dudek in 2014.

III. SPECIES STATUS

HELIX evaluated the status of the QCB based on current and historic observations, host plant distribution in the Development Footprint, and potential host plant distribution in the Conserved Footprint.

Current and Historic Quino Checkerspot Butterfly Observations

a. Current Observations: No QCB adults or larvae were observed on the Project site by Dudek in 2014 or by HELIX in 2015 and 2016. Incidental sightings[7] by USFWS in 2017 included 2 individuals west of the central portion of Village 14 Development Footprint, 4 individuals immediately offsite west of Proctor Valley Road, 1 individual off site immediately east of Proctor Valley Road and west of PA 16, and 1 individual adjacent to the northeastern portion of the Development Footprint.

b. Historic QCB Observations: HELIX reviewed the California Natural Diversity Database and USFWS databases for documented QCB locations within and adjacent to the project. The databases contain scattered QCB locations throughout the broader Proctor Valley Region with the date of the documented sightings ranging from 1990 to 2007. Only one location has been documented on the Development Footprint as described below:

[7] We describe the sightings as "incidental" because they were made during a general reconnaissance of the area and not pursuant to a focused or protocol survey for the species.

Historical Sighting Location 1: In 2001, David Faulkner (San Diego Natural History Museum) and Jim Rocks (URS) documented 12 QCB butterflies along a ridgeline on the eastern portion of the central Village 14 Development Footprint, as part of a survey for an adjacent property (J. Rocks, personal communication, September 15, 2015). This area contains an old road and appears to have been previously cleared of vegetation, possibly as part of historical firebreaks, past firefighting activities, or some other physical disturbance. The 2016 host plant mapping by HELIX identified two patches of QCB host plants in the area (0.12 acre and 0.25 acre) with High densities, along with two High, three Medium, and several Low density point locations of host plants. The 2015 host plant mapping by HELIX identified a 0.24-acre High density patch of QCB host plants along the old disturbed roadway. There was also a smaller patch of host plants and 6 isolated host plant points in the vicinity. No QCB were observed in this area during the 2015 and 2016 surveys conducted by HELIX. The area generally supports chaparral except for the disturbed areas noted above (Exhibit 1).

Historical Sighting Location 2: A second location occurs just north of the west-central portion of the Village 14 Development Footprint and was documented by Mooney Jones and Stokes as part of a USFWS-funded post-fire study associated with the 2003 Old Fire. One QCB was observed in 2005 along a ridge top west of Proctor Valley Road consisting of burned coastal sage scrub/chamise chaparral; two QCB were observed in the same location in 2006; and one QCB was observed in the same location in 2007 (Andrew Borcher, personal communication, September 15, 2015). HELIX surveyed this area in 2015 and found scattered host plant points, but no QCB. HELIX's 2016 surveys occurred adjacent to this historic sighting location and scattered host plants were mapped (no QCB were documented). The actual data point is avoided but is located within 300 feet of proposed Development Footprint and within 250 feet of grading for Proctor Valley Road.

Host Plant Distribution within the Development Footprint

a. 2016 Host Plant Mapping: The 2016 host plant distribution shown on Exhibit 1 reflects an above-average year for host plant expression based on the feedback from the biologists who completed the surveys in 2016 and the County of San Diego's biologist. Host plants that were mapped in 2016 generally occurred in the same areas as in 2015, but occurred in lower densities as compared to 2015. Results are noted below for dwarf plantain:

   i. 55 percent of the host plant locations within the Development Footprint (209 points and patches of the 380 total host plant locations) were mapped as Low density (1-100 plants). Within the Village 14 development footprint, 61 percent of the host plant locations were mapped as Low density (137 points and patches of the 225 locations). Within the PA 16 development footprint, 52 percent of the host plant locations were mapped as Low density (63 points of the 121 locations). Within the MSCP Preserve (Impacted), 29 percent of the host plant locations were mapped as Low density (four points of the 14 locations). Within the Off-site development footprint, 25 percent of the host plant locations were mapped as Low

density (five points of the 20 locations). No Low density host plant locations were mapped within PA 19 or within LDA Impacted.

ii. 31 percent of the host plant locations within the Development Footprint (118 points and patches) were mapped as Medium density (100-1,000 plants). Within the Village 14 development footprint, 23 percent of the host plant locations were mapped as Medium density (51 points and patches of the 225 locations). Within the PA 16 development footprint, 40 percent of the host plant locations were mapped as Medium density (48 points and patches of the 121 locations). Within the MSCP Preserve (Impacted), 71 percent of the host plant locations were mapped as Medium density (10 points and patches of the 14 locations). Within the Off-site development footprint, 45 percent of the host plant locations were mapped as Medium density (nine points and patches of the 20 locations). No Medium density host plant locations were mapped within PA 19 or within LDA Impacted.

iii. 14 percent of the host plant locations within the Development Footprint (53 points and patches) were mapped as High density (1,000-10,000 plants), as shown in Exhibit 1. Within the Village 14 development footprint, 16 percent of the host plant locations were mapped as High density (37 points and patches of the 225 locations). Within the PA 16 development footprint, eight percent of the host plant locations were mapped as High density (10 points and patches of the 121 locations). Within the Off-site development footprint, 30 percent of the host plant locations were mapped as High density (six patches of the 20 locations). No High density host plant locations were mapped within PA 19, MSCP Preserve Impacted, or LDA Impacted.

iv. A majority of the areas with High densities of host plants within the Development Footprint in 2016 occurred within small openings of larger tracts of chaparral, with the other higher density patches occurring in sage scrub and non-native grassland areas.

v. One of the High density areas in the eastern portion of the central Village 14 development footprint appears to be an area that was previously cleared of vegetation, possibly as part of historical firebreaks, past firefighting activities, or some other physical disturbance (i.e., approximately 300 feet southeast of Historical Sighting 1; Exhibit 1).

vi. To summarize the 2016 survey data, the majority of the host plant locations within the Development Footprint (292 of the 380 mapped locations; 77 percent) were mapped as point locations ranging from a few square feet to 250 square feet in size. Furthermore, of the 292 point locations, the majority of these (280 of the 292 locations; 96 percent) were Low density (1-100 plants) or Medium density (100-1,000 plants); and most occurred within a matrix of chaparral and coastal sage scrub habitats.

b. 2015 Host Plant Mapping: The 2015 host plant distribution shown on Exhibit 2 reflects a more substantial host plant expression within the Village 14 development footprint because 2015 was an excellent year for host plants. Note also that focused 2015 host plant mapping and QCB surveys were conducted only for the development impact area associated with the land exchange that was then being proposed. For this reason, 2015 host plant mapping provided in Exhibit 2 does not represent a comprehensive assessment of the current Development Footprint or Conserved Footprint. Nevertheless, the mapping data is discussed in this letter to provide context for the general expression of resources in 2015. As noted above, focused surveys and host plant mapping were not conducted in the PA 16/19 development footprint. Results are noted below:

   i. The majority of the host plant locations – both points and patches – were mapped as Low density (38 locations with 1-100 plants representing 33 percent of points/patches) or Medium density (39 locations with 100-1,000 plants representing 34 percent of points/patches) within the currently-proposed Village 14 development footprint.

   ii. There were 33 locations within the currently-proposed Village 14 development footprint that were mapped as High density – i.e., contained between 1,000 and 10,000 individuals (29 percent of points/patches). There were also four locations within the currently-proposed Village 14 development footprint that were mapped as Very High density – i.e., contained more than 10,000 individuals (four percent of points/patches). As was the case in 2016, the 2015 surveys indicated that the majority of the high host plant areas within the Village 14 development footprint occurred within small openings of chaparral or were adjacent to areas excluded from surveys in 2015 because they were considered too dense to support QCB.

   iii. 71 percent of the host plant locations (including both points and patches) within the currently-proposed Village 14 development footprint were mapped as Low density (1-100 plants) or Medium density (100-1,000 plants) within a matrix of chaparral.

c. Dudek 2014 Host Plant Mapping: As noted above, the 2014 focused host plant mapping yielded only five host plant patches.

Host Plant Distribution within the Conserved Footprint (2016 mapping)

HELIX completed host plant mapping within the Conserved Footprint in 2016. Results are noted below:

   i. 60 percent of the host plant locations within the MSCP Preserve (55 points of the 92 locations) were mapped as Low density (1-100 plants). Within Non-Impacted LDA, 67 percent of the host plant locations were mapped as Low density (two points of the three locations). Within the Conserved Open Space, 65 percent of

the host plant locations were mapped as Low density (24 points of the 37 locations).

ii. 29 percent of the host plant locations within the MSCP Preserve (27 points and patches of the 92 locations) were mapped as Medium density (100-1,000 plants). Within Non-Impacted LDA, 33 percent of the host plant locations were mapped as Medium density (one point of the three locations). Within the Conserved Open Space, 16 percent of the host plant locations were mapped as Medium density (six points of the 37 locations).

iii. 11 percent of the host plant locations within the MSCP Preserve (10 points and patches of the 92 locations) were mapped as High density (1,000-10,000 plants), as shown in Exhibit 1. Within the Conserved Open Space, 19 percent of the host plant locations were mapped as High density (seven points and patches of the 37 locations). No High density host plant locations were mapped within Non-Impacted LDA.

iv. The High density host plants locations (1,000-10,000 individuals) occurred within openings of Diegan coastal sage scrub and chaparral.

v. As with the Development Footprint in 2016, the majority of the host plant locations in the MSCP Preserve (84 of the 92 mapped locations; 91 percent) were small points ranging from a few square feet to 250 square feet in size. Furthermore, of the 84 locations, the overwhelming majority of these (78 of the 84 locations; 93 percent) were Low density (1-100 plants) or Medium density (100-1,000 plants), and most occurred within a matrix of chaparral and coastal sage scrub communities.

IV. QUINO CHECKERSPOT BUTTERFLY HABITAT RESOURCES

Project Open Space and Conveyance of Preserve Land

The Project open space occurs within the preserve boundary established by the Otay Ranch RMP. The RMP preserve was developed to provide connectivity for a range of species, including connectivity across Proctor Valley in an east-west fashion to connect open space on San Miguel Mountain and the San Diego National Wildlife Refuge to the west with open space east of the Project in the Jamul Mountains. Furthermore, areas previously identified as development under the GDP in Village 14 and PA 16 are currently being managed for conservation by the State of California, which further enhances the functionality of wildlife movement, including the QCB, through the region.

The Project is also required to convey 776.8 acres of land within the preserve boundary established by the Otay Ranch RMP, which includes 426.7 acres of on-site conveyance and 350.1 acres of off-site conveyance. While the exact location of the conveyance is not known at

this time, it is anticipated that these lands will further contribute to regional conservation for the QCB.

Quino Checkerspot Butterfly Critical Habitat

A total of 813.9 acres of Designated Critical Habitat occurs within the overall Project area. The majority of the Village 14 portion of the Project is USFWS Designated Critical Habitat for the QCB, while PA 16/19 lie almost entirely outside of critical habitat. Project impacts to Designated Critical Habitat total 502.4 acres, which consists of 416.6 acres within the Village 14 development footprint, 9.2 acres within PA 16, 17.6 acres within MSCP Preserve Impacted, and 59.0 acres of off-sites. Approximately 13.9 of these acres are in dense chaparral and for that reason excluded as unsuitable for QCB (all within the Village 14 development footprint). Therefore, the Development Footprint supports 488.4 acres of potential QCB habitat within critical habitat, including 402.6 acres within the Village 14 development footprint, 9.2 acres within PA 16, 17.6 acres within MSCP Preserve Impacted, and 59.0 acres of off-sites.

By contrast, approximately 274.6 acres of the MSCP Preserve and 36.9 acres of the Conserved Open Space is Designated Critical Habitat. Approximately 3.7 acres are in dense chaparral and were excluded as unsuitable for QCB (2.9 acres within MSCP Preserve and 0.9 acres within Conserved Open Space). Therefore, the MSCP Preserve supports 271.8 acres of potential QCB habitat within critical habitat and the Conserved Open Space supports 36.0 acres of potential QCB habitat within critical habitat. This does not include an additional 350.1 acres off site to be conveyed to the County pursuant to the RMP, some of which may also occur within critical habitat.

Note, however, that the USFWS Recovery Plan for QCB does not consider the Project, or the Proctor Valley Region generally, as supporting a core population of QCB.[8]

Regional Context and Connectivity

The Proctor Valley region is not considered a core area for QCB in the QCB Recovery Plan adopted by the USFWS,[3] however the region does contain documented historical sightings and the region is included in the metapopulation structure for the species. Although limited to scattered patches throughout the valley, suitable habitat for the species is present, including within the Development and Conserved Footprints. From a metapopulation context, the Proctor Valley region provides suitable habitat for the species to expand into during very good reproductive and flight years. The ~~560~~559.9 acres of Conserved Footprint included in the design of the Project allow for contiguity of suitable habitat and QCB resource areas with adjacent, preserved lands (Exhibit 4). The majority of the ~~560~~559.9 acres of Conserved Footprint is open coastal sage scrub that is also contiguous with other sage scrub habitats off site. As shown in Exhibit 4, the preserved lands that occur adjacent to Village 14 include portions of the Rancho

[8] The QCB Recovery Plan does not consider the Proctor Valley Region a core area for QCB but does identify portions of Proctor Valley Region (including the southern portion of the project site) as containing Quino Occurrence Complexes (see Figure 9 of the Recovery Plan).

Jamul Ecological Preserve, City of San Diego MSCP Cornerstone Lands, and a parcel to the east that was acquired by the Bureau of Land Management (BLM) as conserved lands. The preserved lands that occur adjacent to PA 16/19 include portions of the Rancho Jamul Ecological Reserve and San Diego National Wildlife Refuge. There have been substantial numbers of QCB documented to the south of the Development Footprint, to the north and east of Otay Reservoir and also further south within the Otay Lakes Cornerstone Lands and the Otay Mountain Ecological Reserve. The Project's design would maintain contiguous habitat with these locations with areas to the north on San Miguel Mountain, provide widespread QCB resource areas, including hilltops, nectaring resources, and provide host plant patches to help maintain metapopulation dynamics for the species.

As noted above, the Project is also required to convey 350.1 acres of land off site within the preserve boundary established as part of the Otay Ranch RMP. While the exact location of the conveyance isn't known at this time, it is anticipated that these lands will further contribute to regional conservation for the QCB.

V. PROJECT IMPACTS ON QCB AND MITIGATION

Quino Checkerspot Butterfly Individuals and Occupied Habitat

No QCB adults or larvae were observed on the project site during the protocol QCB surveys conducted in 2015 and 2016, or during the other biological surveys conducted for the Project in 2014 and 2015. The 2016 survey and results are considered valid because (i) the surveys were conducted in accordance with the 2016 USFWS Survey Protocol, (ii) QCB were documented approximately one mile southeast of the southernmost portion of the Village 14 Development Footprint[9] during the same time when surveys for the Project were conducted, and (iii) host plant and site conditions were adequate for detecting QCB. Protocol surveys were not conducted in 2017, but the USFWS documented incidental sightings in several areas surrounding the Development Footprint and Conserved Footprint. As mentioned above, a single QCB was incidentally observed by USFWS east of Proctor Valley Road adjacent to the northern portion of the Project and a single QCB was incidentally observed adjacent to the Development Footprint in the northeastern portion of the Project. The USFWS also incidentally observed 6 QCB individuals immediately offsite and adjacent to the west-central portion of Village 14 (2 separate locations). These locations occur immediately adjacent to, but not within, the Development Footprint. These findings are consistent with the overall assessment of this report that the Proctor Valley area has potential to support QCB in low numbers as evidenced in 2017.

Based on the information gathered from the 2014, 2015, and 2016 surveys, the Project site, including the Development Footprint and the Conserved Footprint, did not support occupied QCB habitat. Several incidental QCB sightings were documented in 2017 by USFWS adjacent to the Development and Conserved Footprints, but not within the Project Boundary. With the

[9] Dudek. 2016. 2016 Focused Quino Checkerspot Butterfly Survey Report for the Proposed Otay Ranch Resort Village (Village 13) Project, County of San Diego, California. Letter report to Recovery Permit Coordinator (U.S. Fish and Wildlife Service) from Dudek. May 31.

exception of these areas adjacent to the Development Footprint, absent future occupation of the site by QCB, implementation of the proposed Project would not impact QCB individuals or occupied QCB habitat.

Host Plants

Based on the 2016 host plant surveys, the proposed Project would disturb 5.38 acres of QCB host plants scattered across the ~~808~~809.1-acre Development Footprint, including 3.41 acres within Village 14, 0.67 acres within PA 16, 0.18 acre within MSCP Preserve (Impacted), and 1.11 acres of off-sites. No impacts to host plants would occur within PA 19. Within these 5.38 acres, development would result in the following impacts to host plants:

- 196 Low density points and 13 Low density patches (1-100 individuals);
- 84 Medium density points and 34 Medium density patches (100-1,000 individuals);
- 12 High density points and 41 High density patches (1,000-10,000 individuals).

Although the total amount of affected host plant acreage is small – 5.38 acres – and is scattered patchily throughout the Development Footprint, the impact is considered significant absent mitigation.

For this Project, mitigation is provided through preservation of QCB host plant locations within the MSCP Preserve and the off-site conveyance lands. In addition, the Conserved Open Space and Non-Impacted LDA areas provide additional QCB resources and long-term value for the species, although each is not considered mitigation. Specifically, the 2016 host plant survey indicate the following for the MSCP Preserve:

- Mapped QCB host plant areas in the MSCP Preserve totaled 1.21 acre.
- These 1.21 acres contained 55 Low density points (1-100 individuals), 27 Medium points and patches (100-1,000 individuals), and 10 High patches (1,000-10,000 individuals).
- In addition to the MSCP Preserve, the Conserved Open Space and Non-Impacted LDA areas contain 1.09 acre of QCB host plants, including 24 Low density points (1-100 individuals), six Medium points and patches (100-1,000 individuals), and seven High patches (1,000-10,000 individuals).

The MSCP Preserve provides habitat value for the species, especially when combined with the additional conservation required by the Otay Ranch RMP, as well as the habitat value within the Conserved Open Space and Non-Impacted LDA areas. The habitat within the MSCP Preserve contains a mosaic of open habitat communities along with some chaparral areas, hill top areas, cryptogrammic soils, and scattered host plant areas throughout the areas similar to habitats within the Development Footprint. The habitat within the MSCP Preserve is also connected to other larger blocks of preserved habitat, including the Rancho Jamul Ecological Preserve and City of San Diego MSCP Cornerstone Lands, that are also considered suitable for QCB. For these reasons, the MSCP Preserve, coupled with the additional conservation conveyance required

under the Otay Ranch RMP, would mitigate the proposed Project impacts on QCB host plants to a less than significant level.

Quino Checkerspot Butterfly Habitat Impacts and Mitigation

As explained above, the Development Footprint contains ~~793~~794.7 acres of habitat that could potentially support QCB. Although no QCB were observed on the Project site during the surveys conducted in 2014, 2015, and 2016, and although there have been no documented occurrences of QCB at the Project site since 2001, there is the possibility that QCB could use or occupy the site at some time in the future as was evidenced by the USFWS' incidental observations of QCB adjacent to the Project in 2017. For this reason, the Project's impact on ~~793~~794.7 acres of habitat that could support future QCBs is considered significant absent mitigation.

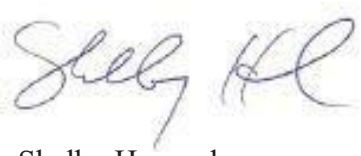
In this case, the impact will be mitigated through the preservation of similar habitat within the MSCP Preserve and off-site conveyance lands. Specifically, the MSCP Preserve will protect in perpetuity 404.8 acres of habitat that could support QCB in the future along with 350.1 acres off site to be conveyed within the preserve boundary established by the RMP. The non-impacted areas (Conserved Open Space and LDAs) will protect in perpetuity ~~156~~155.1 acres of habitat that could support QCB in the future. This set aside of potential QCB habitat would mitigate the proposed Project's impacts on such habitat to a less than significant level.

VI. CONCLUSION

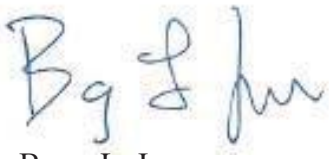
In conclusion, no QCB were documented during 2016 focused surveys within the Development or Conserved Footprints and those surveys were considered valid. The Development Footprint of the project would impact one historic (2001) QCB sighting location, QCB host plant locations, and habitat capable of supporting QCB in the future, including habitat adjacent to the QCB incidental sightings by USFWS in 2017. These are considered potentially significant effects absent mitigation. These effects, however, would be mitigated, by preserving host plants and habitat in the Conserved Footprint and in the additional conservation land conveyed to the County under the RMP. Therefore, the Project's impacts on the QCB would be mitigated to a less than significant level.

If you have any questions, please feel free to contact either of us.

Sincerely,



Shelby Howard
Principal Biologist



Barry L. Jones
Senior Consulting Biologist

Enclosures:

Exhibit 1	2016 Quino Host Plant Mapping and Historical Locations
Exhibit 2	2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations
Exhibit 3	Chaparral Cover and QCB Excluded Habitat
Exhibit 4	Preservation of Documented QCB Sightings in County Subarea Plan

Echo Valley Road

a b c d e f g h i j k l m n o p q r s t u v w x y z aa bb cc

CSS NNG DH dCSS DEV CAM MFS EUC

Project Boundary
Excluded Areas 2016
Quino Survey Area
Onsite Development
Offsite Development
MSCP Preserve Impacted
MSCP Preserve
Conserved Open Space
Vegetation
CAM=Cismontane Alkali Marsh
CSS=Diegan Coastal Sage Scrub
DEV=Developed
DH=Disturbed Habitat
EUC=Eucalyptus Woodland
MFS=Mulefat Scrub
NNG=Non-Native Grassland
dCSS=disturbed Coastal Sage Scrub

Host Plants

Plantago erecta
1-99
100-999

Plantago erecta
100-999
1,000 - 9,999

Proctor Valley Road

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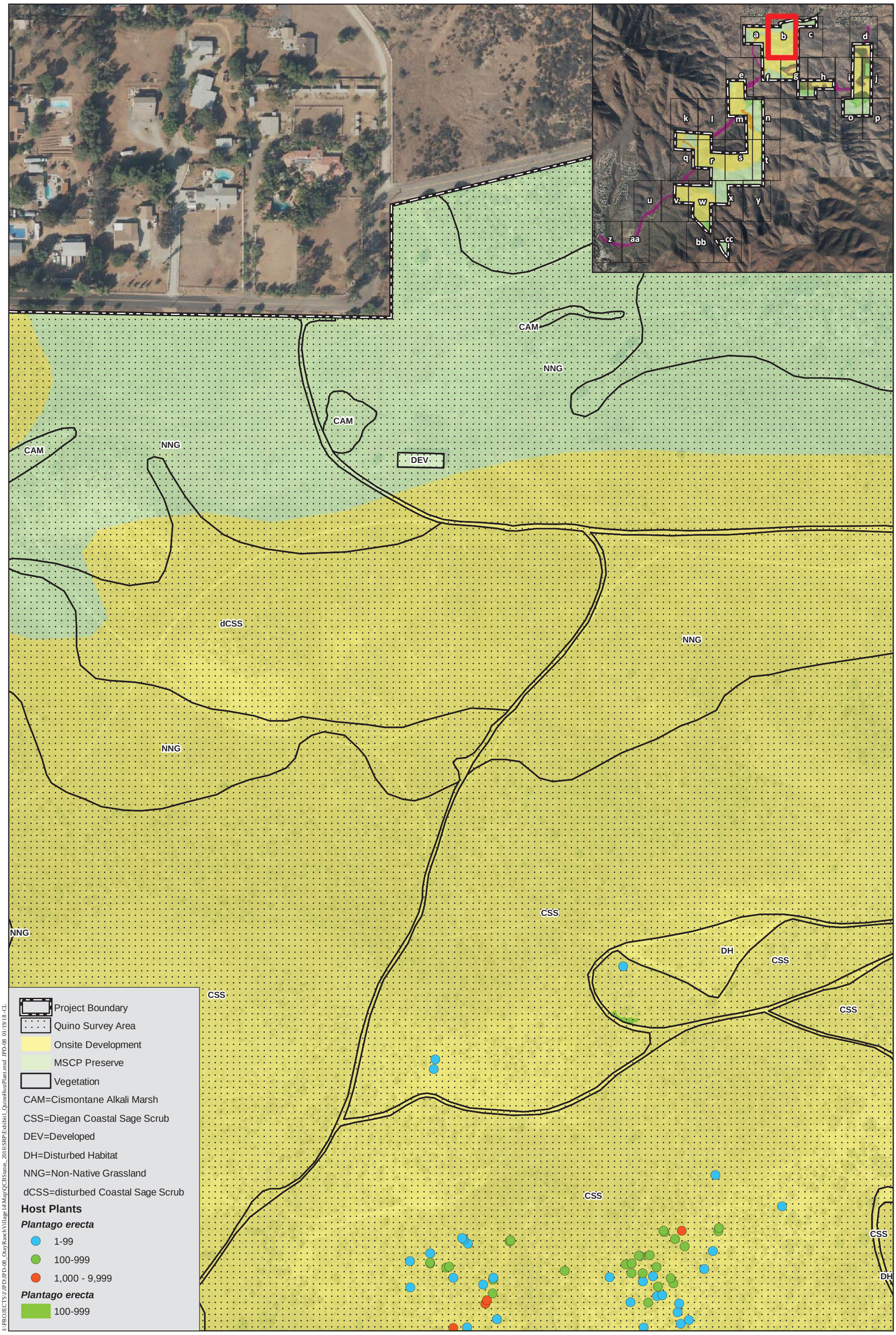
2016 Quino Host Plant Mapping and Historical Locations

OTAY RANCH VILLAGE 14 AND PLANNING AREAS 16/19
DEVELOPMENT FOOTPRINT AND PRESERVE

HELIX Environmental Planning

N 0 200 Feet

Exhibit 1a



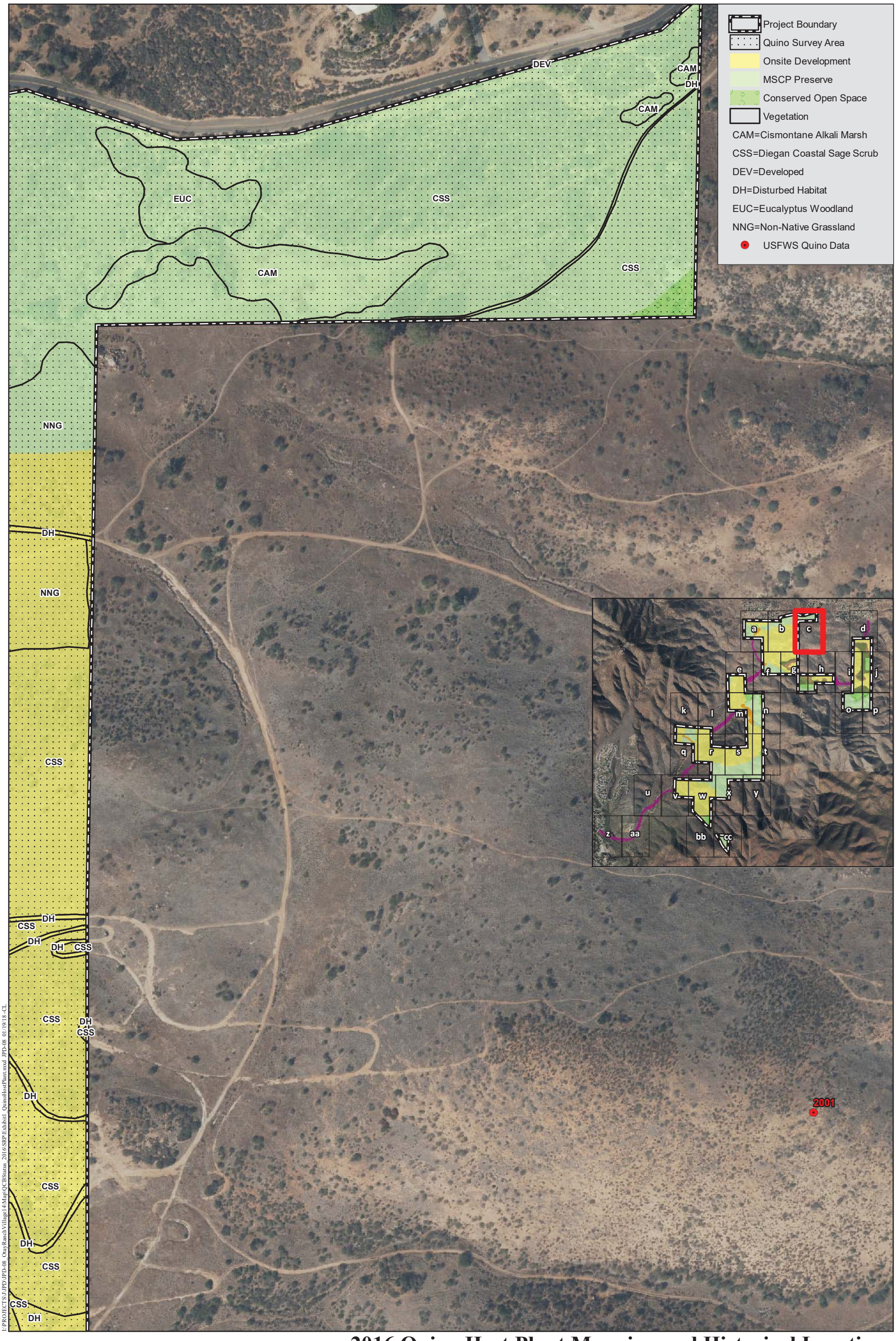
2016 Quino Host Plant Mapping and Historical Locations

OTAY RANCH VILLAGE 14 AND PLANNING AREAS 16/19
DEVELOPMENT FOOTPRINT AND PRESERVE

HELIX Environmental Planning

N 0 200 Feet

Exhibit 1b



2016 Quino Host Plant Mapping and Historical Locations

OTAY RANCH VILLAGE 14 AND PLANNING AREAS 16/19
DEVELOPMENT FOOTPRINT AND PRESERVE

HELIX Environmental Planning

N 0 200 Feet

Exhibit 1c

Project Boundary
Quino Survey Area
Onsite Development
Offsite Development
LDA Non-Impacted
LDA Impacted
Vegetation
CSS=Diegan Coastal Sage Scrub
DH=Disturbed Habitat

a b c d e f g h i j k l m n o p q r s t u v w x y z aa bb cc

CSS

DH

CSS

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2016 Quino Host Plant Mapping and Historical Locations

OTAY RANCH VILLAGE 14 AND PLANNING AREAS 16/19
DEVELOPMENT FOOTPRINT AND PRESERVE

HELIX Environmental Planning

N 0 200 Feet

Exhibit 1d

Project Boundary
Quino Survey Area
Onsite Development
Offsite Development
MSCP Preserve
Conserved Open Space
Vegetation
CC=Chamise Chaparral
CSS=Diegan Coastal Sage Scrub
DEV=Developed
DH=Disturbed Habitat
NNG=Non-Native Grassland
dCSS=disturbed Coastal Sage Scrub

Host Plants

Castilleja spp. (*C. exserta; C. densiflora*)

1-99

Plantago erecta

1-99
100-999
1,000 - 9,999

Plantago erecta

100-999
1,000 - 9,999

a b c d e f g h i j k l m n o p q r s t u v w x y z aa bb cc

CSS dCSS CC DH NNG CC DEV DH CC NNG CC dCSS CC CC CC CC DH CC

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2016 Quino Host Plant Mapping and Historical Locations

OTAY RANCH VILLAGE 14 AND PLANNING AREAS 16/19
DEVELOPMENT FOOTPRINT AND PRESERVE

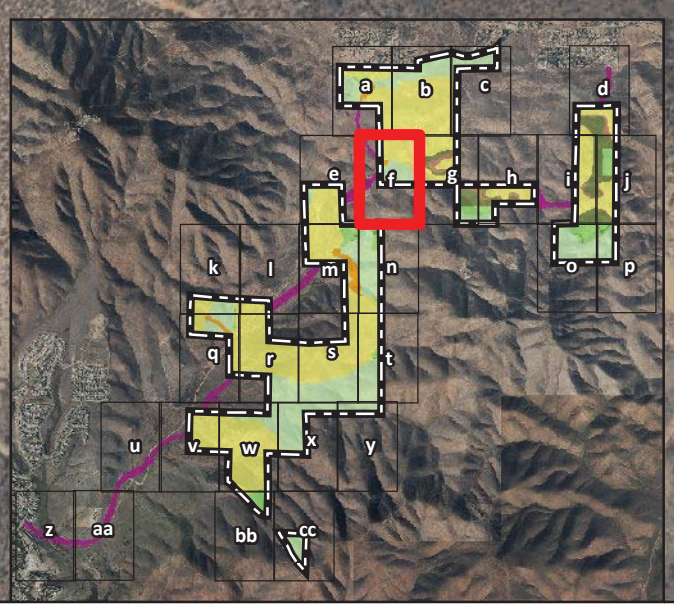
HELIX Environmental Planning

N

0 200 Feet

Exhibit 1e

CSS
NNG
CSS
NNG
DH
CSS
DH
MFS
SWS
SWS
NNG
CSS



Project Boundary
Quino Survey Area
Onsite Development
Offsite Development
MSCP Preserve Impacted
MSCP Preserve
LDA Non-Impacted
Vegetation
CSS=Diegan Coastal Sage Scrub
DH=Disturbed Habitat
MFS=Mulefat Scrub
NNG=Non-Native Grassland
SWS=Southern Willow Scrub

Host Plants

Castilleja spp. (*C. exserta; C. densiflora*)

1-99

Plantago erecta

1-99

100-999

Plantago erecta

100-999

1,000 - 9,999

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2016 Quino Host Plant Mapping and Historical Locations

OTAY RANCH VILLAGE 14 AND PLANNING AREAS 16/19
DEVELOPMENT FOOTPRINT AND PRESERVE

HELIX Environmental Planning

N

0 200 Feet

Exhibit 1f

CSS
CAM
DH
DH
CSS
CSS
CSS
SMX
a
b
c
d
e
f
g
h
i
j
k
l
m
n
o
p
q
r
s
t
u
v
w
x
y
z
aa
bb
cc

Project Boundary
Quino Survey Area
Onsite Development
Offsite Development
MSCP Preserve
Conserved Open Space
LDA Non-Impacted
LDA Impacted
Vegetation
CAM=Cismontane Alkali Marsh
CSS=Diegan Coastal Sage Scrub
DH=Disturbed Habitat
SMX=Southern Mixed Chaparral

Host Plants

Castilleja spp. (*C. exserta; C. densiflora*)

1-99

Plantago erecta

1-99
100-999
1,000 - 9,999

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2016 Quino Host Plant Mapping and Historical Locations

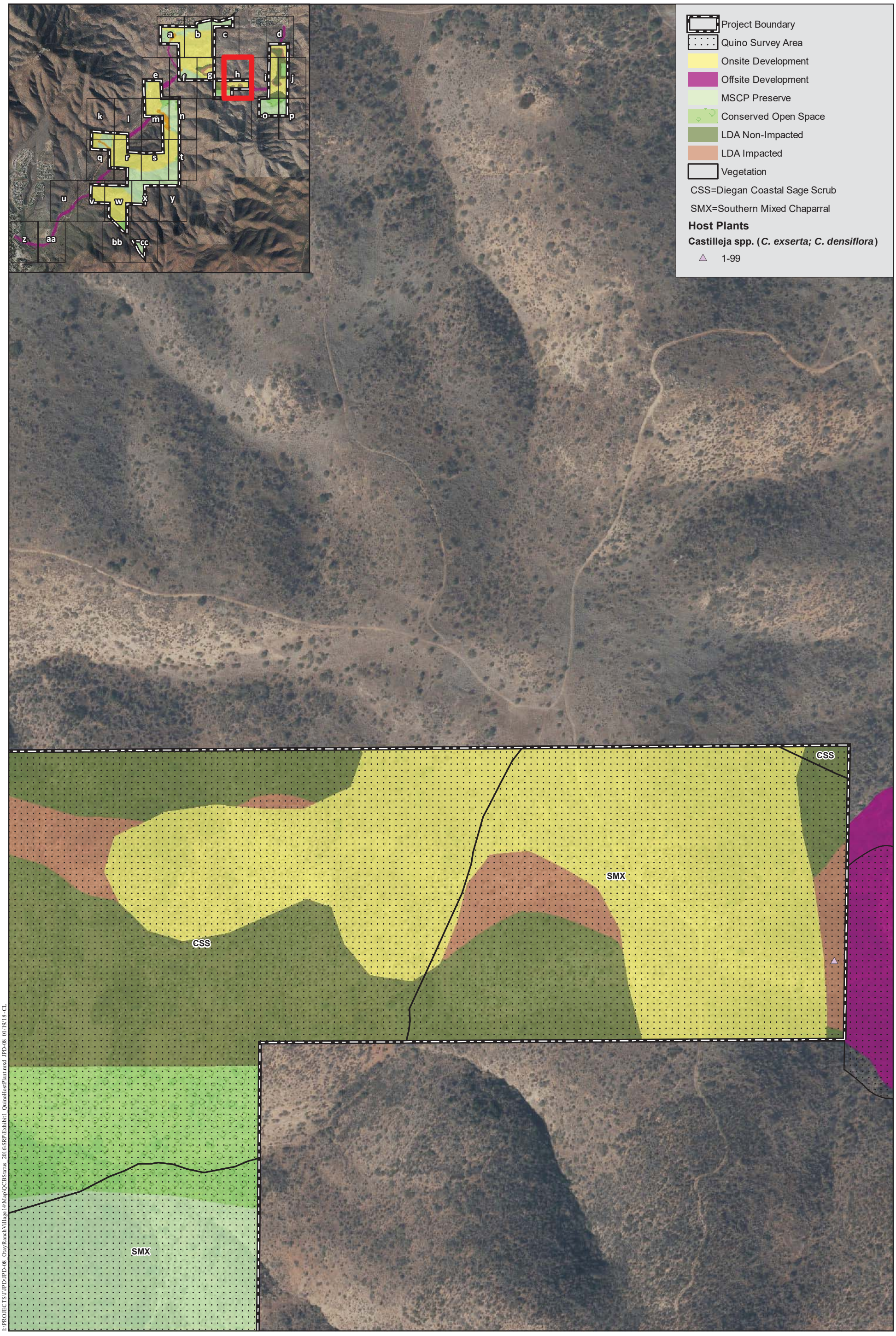
OTAY RANCH VILLAGE 14 AND PLANNING AREAS 16/19
DEVELOPMENT FOOTPRINT AND PRESERVE

HELIX Environmental Planning

N

0 200 Feet

Exhibit 1g



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2016 Quino Host Plant Mapping and Historical Locations

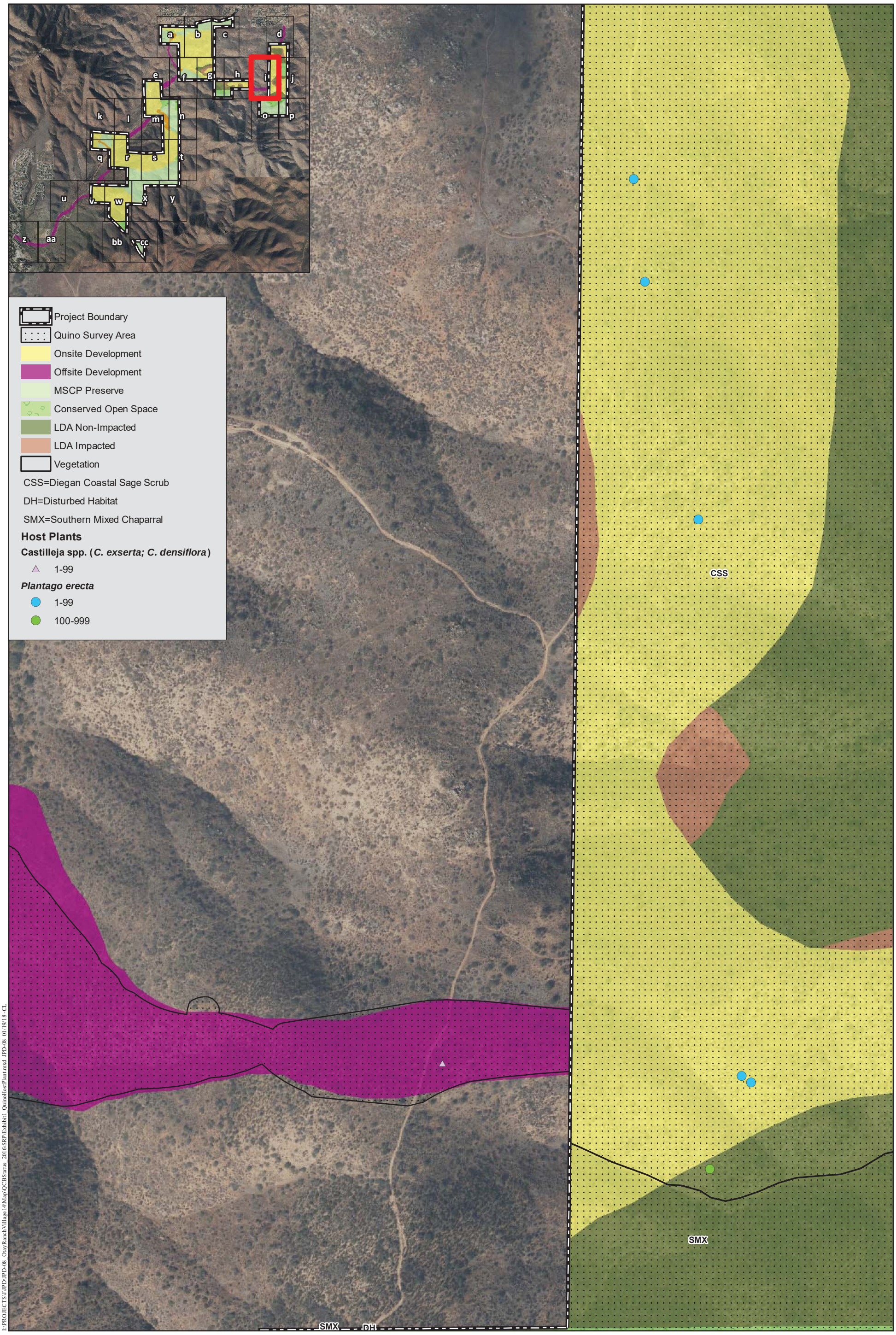
OTAY RANCH VILLAGE 14 AND PLANNING AREAS 16/19
DEVELOPMENT FOOTPRINT AND PRESERVE

HELIX Environmental Planning

N

0 200 Feet

Exhibit 1h



2016 Quino Host Plant Mapping and Historical Locations

OTAY RANCH VILLAGE 14 AND PLANNING AREAS 16/19
DEVELOPMENT FOOTPRINT AND PRESERVE

HELIX Environmental Planning

0 200 Feet

Exhibit 1i

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