

N:\Projects\38002-01\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.



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



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.**

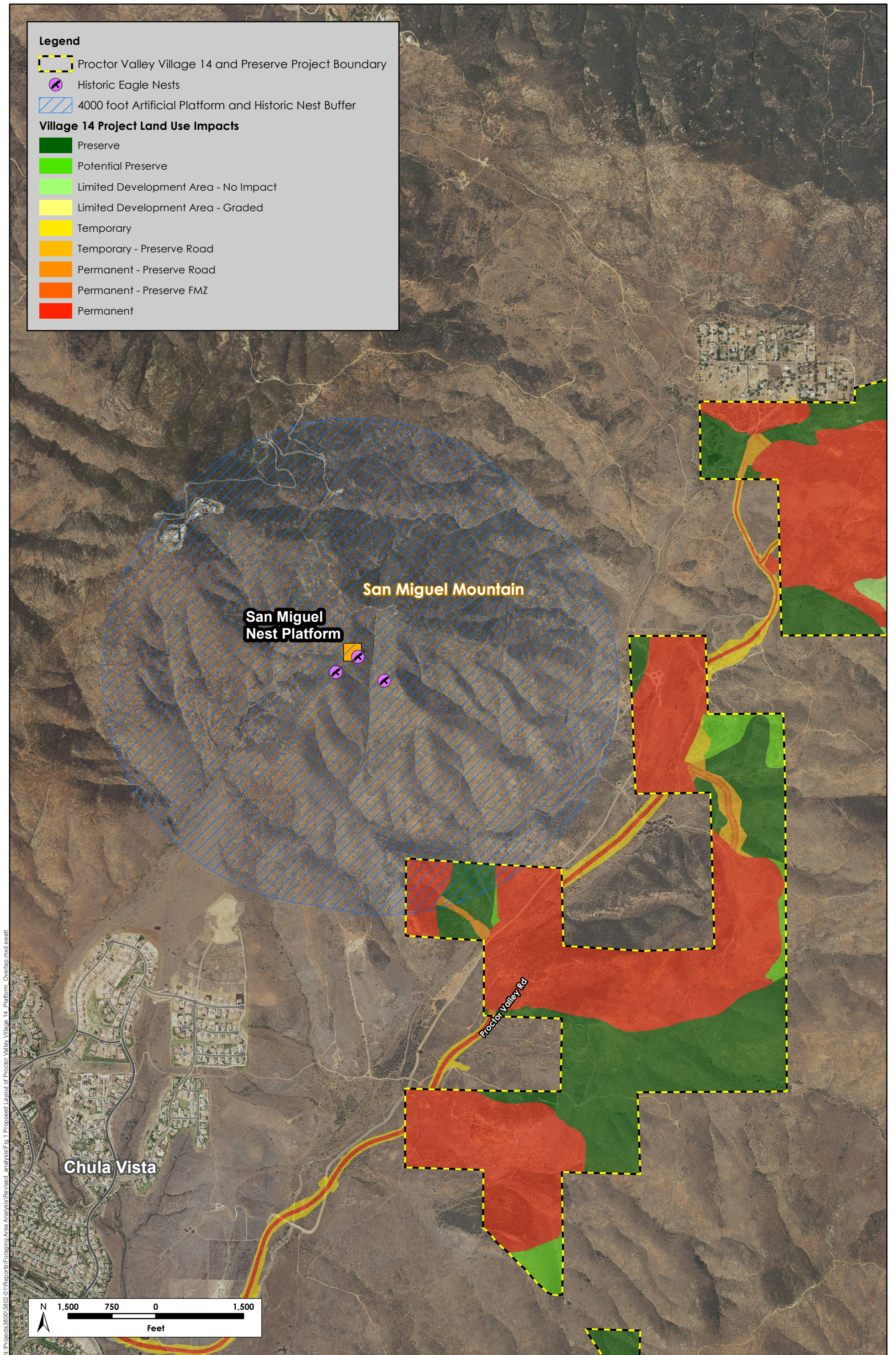
We do not have precise information concerning the locations of the historic nest sites used by golden eagles on San Miguel Mountain, none of which still exist. We do know, however, that there were three nests located in the same general vicinity as the artificial nest platform that the USFWS installed 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



N:\Projects\3800\3802-01\Reports\Foraging Area Analysis\Revised analysis\Fig 1 Proposed Layout of Proctor Valley Village 14 Platform Overlap.mxd swatt

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

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.

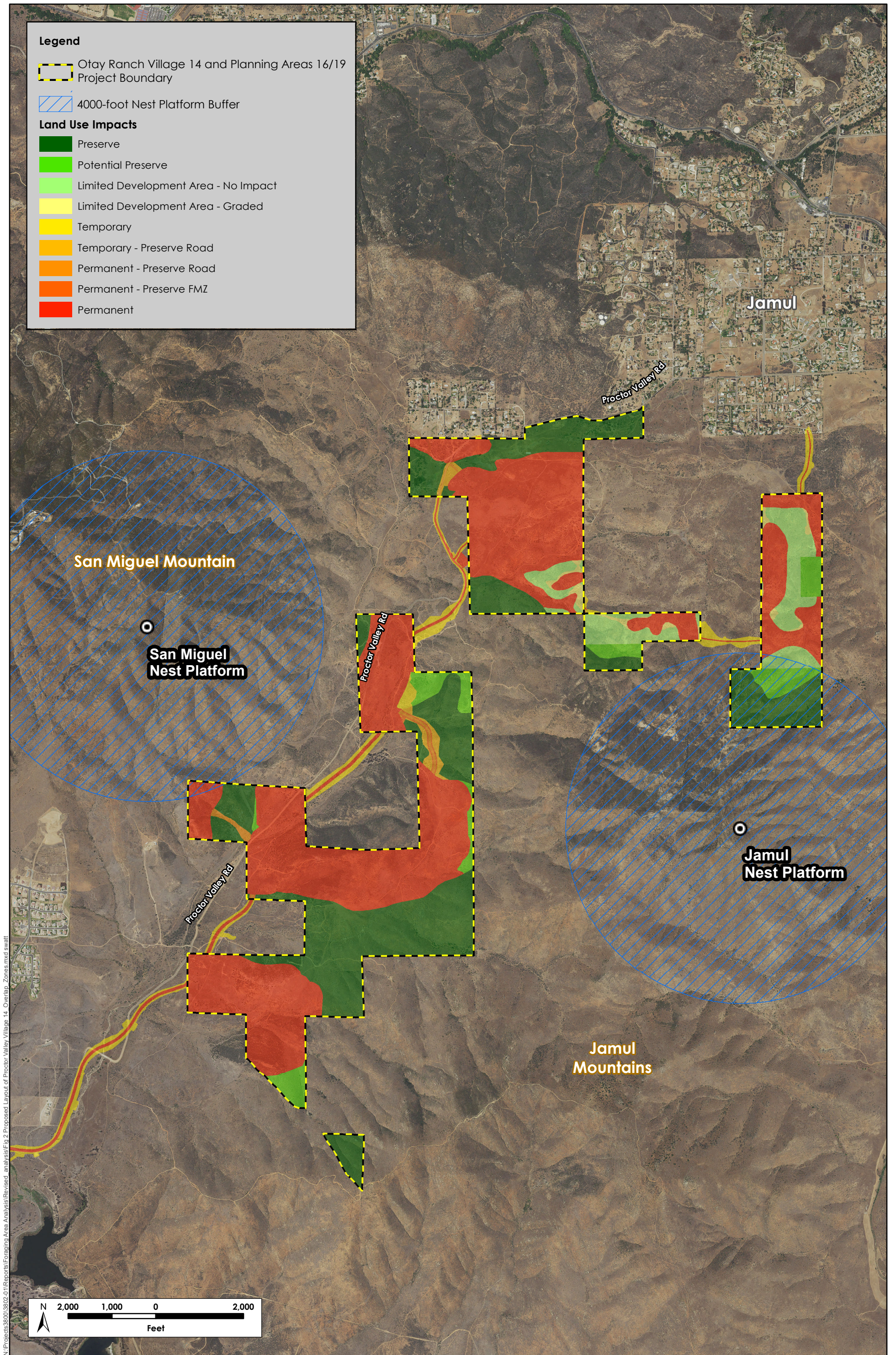


Figure 2: Proposed Layout of Otay Ranch Village 14 and Planning Areas 16/19 Project Showing Development Overlap Zones Within 4,000 Feet of Two Artificial Nesting Platforms Installed in 2013
 Otay Ranch Village 14 Revised Golden Eagle Foraging Area Analysis (3802-01)
 March 2017

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)

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 808.1-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 **808.1 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 **11.6 acres**.

Conserved Footprint: The combined Conserved Footprint of Village 14 and PA 16/19 is approximately **560.9 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 **83.7 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
- II. Description of QCB Habitat Assessments/Surveys (2014-2016)
- III. Species Status
- IV. QCB Habitat Resources
- V. Project Impacts on QCB and Mitigation
- VI. Conclusion

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 2015¹ 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 808.1-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	11.6	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	83.7
TOTAL^a	808.1	560.9

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	431.6 53%	372.1 66%
Non-native Grassland	82.5 10%	29.7 5%
Southern Mixed Chaparral	15.9 2%	85.0 15%
Other	<u>28.4</u> 4%	<u>15.0</u> 3%
TOTAL^a	808.1	560.9
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	793.7 98%	554.7 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 808.1-acre Development Footprint were considered excluded areas and removed from further consideration in QCB surveys, leaving a total of 793.7 acres to be surveyed for QCB within the Development Footprint. This same evaluation process indicated that 6.2 acres of the 560.9-acre Conserved Footprint should also be excluded, leaving a total of 554.7 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 protocol⁶, 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 sightings⁷ 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 Borchert, 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 560.9 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 560.9 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 Footprint⁹ 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 808.1-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, cryptogammic 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 793.7 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 793.7 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 156.1 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,



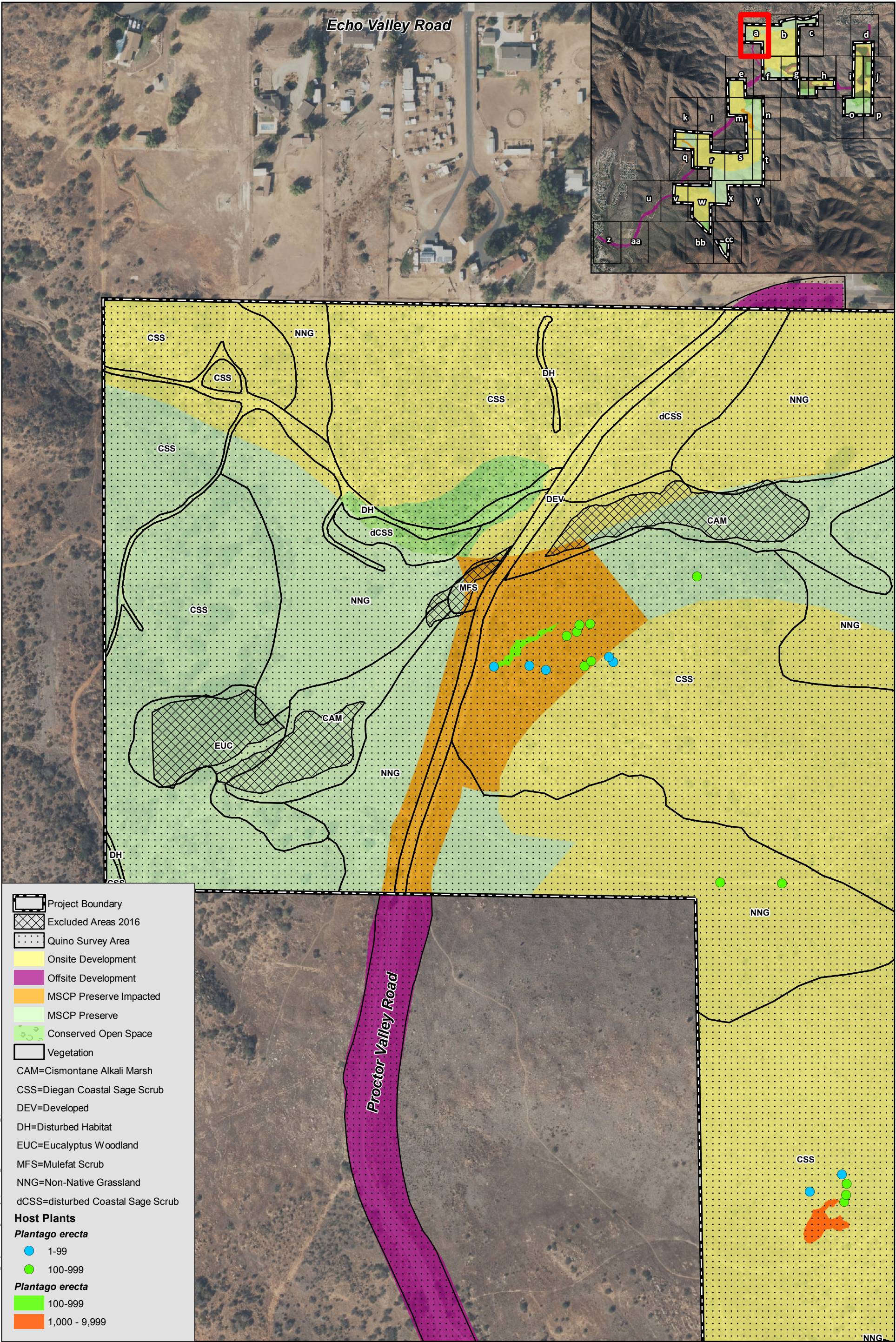
Shelby Howard
Principal Biologist



Barry L. Jones
Senior Consulting Biologist

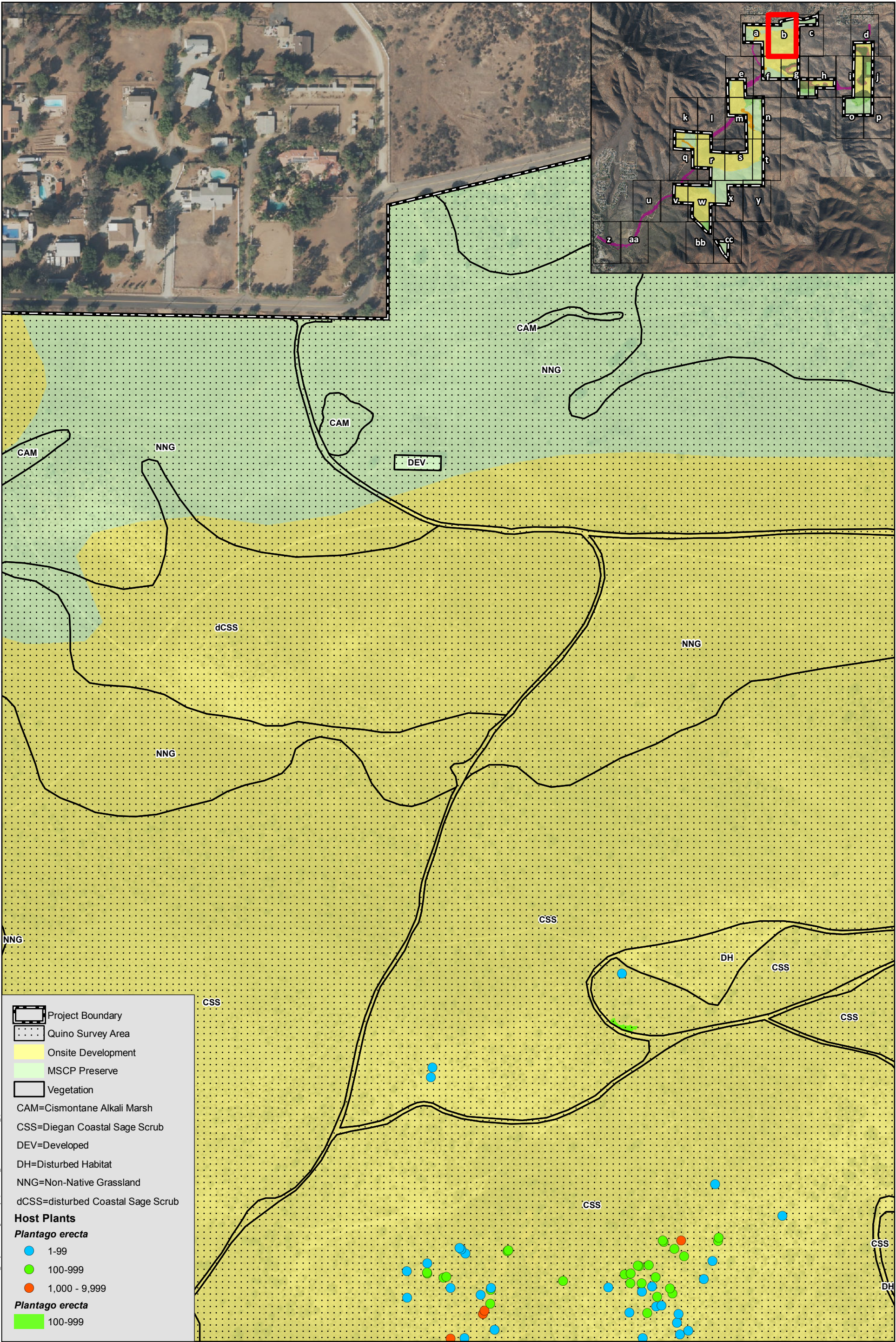
Enclosures:

- 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



2016 Quino Host Plant Mapping and Historical Locations

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



2016 Quino Host Plant Mapping and Historical Locations

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

