CAA PLANNING

# Memorandum

To: Colby Cataldi

From: Shawna Schaffner

Date: September 28, 2016

Subject: Esperanza Hills - Specific Plan Modified Access, CEQA Substantial Conformance Review

This memorandum was prepared to review refinements to the access configuration for the proposed project, as presented in the Specific Plan. As further detailed below, the project approvals from March 10, 2015 and June 2, 2015 are anticipated to be rescinded by the Board of Supervisors and the project and Revised Environmental Impact Report reconsidered in response to a Court judgment. Since the 2015 consideration of the Specific Plan, the main vehicular access to the project site was refined to reduce the curving nature of the roadway. While the refined project access is intended to improve vehicular and emergency access to the site, the refinement also serves to minimize environmental impacts as compared to those detailed in the FEIR. The following analysis provides detailed information in support of the adequacy of the FEIR related to the modified access provided in the Specific Plan.

Public Resources Code Section 21166 and California Code of Regulations, Title 14, Section 15162, address the question of whether to prepare a supplemental EIR, subsequent EIR or no additional environmental documentation based on the decision of the lead agency when an approved project is modified. Under PRC Section 21166, the lead agency has discretion not to prepare a subsequent EIR if any "substantial evidence" supports the lead agency's decision. . The Esperanza Hills Final Environmental Impact Report (SCH No. 2012121071/PA 120037) was certified by the Orange County Board of Supervisors on March 10, 2015. The Draft EIR analyzed two primary access configurations and several alternative access configurations including project access via Stonehaven Drive with emergency-only access also via Stonehaven Drive (Option 1) and project access via Aspen Way with emergency only access via Stonehaven Drive (Option 2). The Final EIR, certified on March 10, 2015, analyzed a third access option (Option 2 - Modified Aspen Way) which proposed a full project access to Aspen Way connecting to San Antonio Road and a secondary access to Stonehaven Drive. Option 1 provides a primary access and a separate road for emergency purposes only, similar to Option 1 Modified. All environmental impacts associated with each individual access configuration were fully disclosed and analyzed. All feasible mitigation measures were identified in the FEIR and the County adopted a Statement of Overriding Considerations for environmental impacts that could not be mitigated.

Following the County's certification of FEIR 616 on March 10, 2015 and the County's approval of the Esperanza Hills project on June 2, 2015, a Petition for Writ of Mandate was filed by Protect Our Homes and Hills et al on July 7, 2015, challenging the adequacy of the FEIR. Judge William Claster by the Statement of Decision dated July 22, 2016, in Orange County Superior Court Case No. 30-2015-00797300-CU-TT-CXC, found that "the EIR impermissibly defers mitigation of greenhouse gas (GHG) impacts and also arbitrarily limits the extent to which mitigation measures must be considered. . ." and that "the EIR is flawed insofar as it arbitrarily limits mitigation requirements to an additional 5% reduction in GHG emissions, fails to mandate analysis of all mitigation measures beyond the 5% level and does not require the adoption of all mitigation measures."

The Court issued a judgment and writ on August 24, 2016, which ordered as follows:

a. The County vacate certification of the FEIR, adoption of a Mitigation Monitoring and Reporting Program and Findings of Fact/Statement of Overriding Considerations made in support of the Project.
b. The County vacate all approvals of the Project based upon the EIR including Board of Supervisors Resolution No. 15-018 certifying FEIR 616, Board of Supervisors Resolution adopting General Plan Amendment LUE 14-02 and Ordinance No. 15-010 adopting the Esperanza Hills Specific Plan and rezoning certain land from the A-1 General Agricultural and A1(O) General Agricultural/Oil Production Districts to the S "Specific Plan" District.
c. The County shall revise the EIR in accordance with CEQA, the CEQA Guidelines, the Statement of Decision and the final Judgment to bring the EIR into compliance with CEQA by resolving the deficiencies identified by the Court in its Statement of Decision.
d. The EIR certification and approvals be remanded to the County for reconsideration.
e. No grading permits shall be issued and no construction activities can commence until the County takes the necessary steps to bring the EIR into compliance with CEQA by resolving the deficiencies identified by the Court in its Statement of Decision.

Therefore, in order to address the Court's concerns, the Greenhouse Gas section of the FEIR (Chapter 5.6) was revised to incorporate previously identified mitigation measures and project design features and additional mitigation measures to achieve a 7.93% reduction in operational greenhouse gas emissions.
This reduction is in addition to the anticipated 23.9% reduction resulting from state regulations required by AB 32.

The original Esperanza Hills Specific Plan, included two access options - the San Antonio Road Access Configuration (analyzed in the EIR as Option 2B) and the Aspen Way Drive Access Configuration (Option 2 - Modified Aspen Way described above). The San Antonio Road Access Configuration would provide primary access to San Antonio Road south of Aspen Way and a secondary access to Stonehaven Drive. The Project applicant has now provided an access alternative (Option 1 Modified) which proposes to reconfigure the main project access street alignment and emergency access connection point as shown on Exhibit 7 of the Specific Plan. .

The Option 1 Modified alternative realigns the entry street from Stonehaven Drive to limit steep grades and turns, and reduce biological impacts and grading quantities. The access would include a lengthened bridge with a more direct orientation into the gated project entry on a wider road. In addition, the connection point of emergency access would be relocated northeasterly in order to further separate the main project entry from the emergency access. The emergency access would originate from the same location as Option 1 along an access easement through the adjacent Property owned by the Richards Trust behind lots 1-30 and connecting to Esperanza Hills Parkway closer to the Orange County Fire Authority (OCFA) Emergency Fire Staging Area. The emergency access road would also provide a separate connection point to Esperanza Hills Parkway southerly of the gated entrance, resulting in a secondary emergency connection for use at the discretion of OCFA. All legal entitlements for access to public roads are in place.

In support of the determination by the County, as Lead Agency, that a subsequent or supplemental EIR is not required to implement the proposed Option 1 Modified access alternative, following is a consistency analysis based on Public Resources Code Section 21166 and CEQA Guidelines Section 15162, as required by the Orange County CEQA Manual, Section IX. The referenced Sections are included in their entirety below.

Public Resources Code (PRC) Section 21166. Lead agency prohibition to require subsequent reports for a certified project unless specific events.

> *When an environmental impact report has been prepared for a project pursuant to this division, no subsequent or supplemental environmental impact report shall be required by the lead agency or by any responsible agency, unless one or more of the following events occurs:*
>
> *a) Substantial changes are proposed in the project which will require major revisions of the environmental impact report.*
> *b) Substantial changes occur with respect to the circumstances under which the project is being undertaken which will require major revisions in the environmental impact report.*
> *c) New information which was not known and could not have been known at the time the environmental impact report was certified as complete, becomes available.*

California Code of Regulations, Title 14, Chapter 3 (CEQA Guidelines) - Section 15162 - Subsequent EIRs and Negative Declarations

*(a) When an EIR has been certified or negative declaration adopted for a project, no subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in the light of the whole record, one or more of the following:*

> *1) Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;*

2) *Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or*
3) *New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the negative declaration was adopted, shows any of the following:*
    A. *The project will have one or more significant effects not discussed in the previous EIR or negative declaration;*
    B. *Significant effects previously examined will be substantially more severe than shown in the previous EIR;*
    C. *Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project but the project proponents decline to adopt the mitigation measure or alternative; or*
    D. *Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.*

*(b) If changes to a project or its circumstances occur or new information becomes available after adoption of a negative declaration, the lead agency shall prepare a subsequent EIR if required under subdivision (a). Otherwise, the lead agency shall determine whether to prepare a subsequent negative declaration and addendum, or no further documentation.*

*(c) Once a project has been approved, the lead agency's role in project approval is completed, unless further discretionary approval on that project is required. Information appearing after an approval does not require reopening of that approval. If after the project is approved, any of the conditions described in subdivision (a) occurs, a subsequent EIR or negative declaration shall only be prepared by the public agency which grants the next discretionary approval for the project, if any. In this situation no other responsible agency shall grant an approval for the project until the subsequent EIR has been certified or subsequent negative declaration adopted.*

*(d) A subsequent EIR or subsequent negative declaration shall be given the same notice and public review as required under Section 15087 or Section 15072. A subsequent EIR or negative declaration shall state where the previous document is available and can be reviewed.*

The following environmental impact topics were analyzed in the Esperanza Hills FEIR. A brief summary of impacts describes how implementation of Option 1 Modified affects the topical area as analyzed, including identifying where there is a lesser impact or benefit due to implementation of Option 1 Modified. As detailed below, the Specific Plan requested by Applicant including

Option 1 Modified:

1. Does not involve new significant environmental effects or a substantial increase in the severity of previously identified significant effects which would require preparation of a subsequent or supplemental EIR;

2. Does not result in substantial changes which either have occurred or will occur with respect to the circumstances under which the project will be undertaken which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

3. Does not constitute new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the FEIR was certified as complete on June 2, 2015 that shows that: (i) the existing project or the requested Plan Amendment will have one or more significant effects not discussed in the FEIR, (ii) significant effects previously examined will be substantially more severe than shown in the FEIR with the existing project or the requested Plan Amendment; (iii) mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project but the project proponents decline to adopt the mitigation measure or alternative; or (iv) mitigation measures or alternatives which are considerably different from those analyzed in the FEIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative

Aesthetics

Option 1 Modified reduces the offsite grading footprint as compared to both the San Antonio and Aspen Drive Access Options, eliminates grading from the Travis Trust property to the west, removes an existing road through Blue Mud Canyon and restores it to open space, creates a bridge across Blue Mud Canyon, and pulls back the development pad areas along the westernmost lots (lots 6, 7, 8 and 9) a minimum 150 feet east from the western property line for an emergency access road and to enhance fuel modification. Natural space onsite will be increased by 8.94 acres. Offsite disturbance of natural open space to the west will be eliminated as the main access roads to Aspen Drive and San Antonio over the Travis Trust property will be eliminated. Ridgelines to the east and north will remain undisturbed, and light and glare will be reduced through the elimination of the lighting of the additional roads to the west and decreasing the length of the main access road by 0.28 miles - from 0.81 miles to 0.53 miles. Visibility of the project to properties to the west will be reduced by moving the lots east. Therefore, Option 1 Modified will not result in a change in the previously analyzed impacts to Aesthetics and the design is consistent with project design features and mitigation measures in the Revised FEIR. There are no substantial changes per CEQA Guidelines Section 15162 related to Option 1 Modified that will require additional analysis or the implementation of additional mitigation

measures related to Aesthetics. All impacts were identified and addressed in the Revised FEIR.

Air Quality

Air Quality impacts due to construction will be improved because grading will be reduced when compared to either of the main access roads to San Antonio and Aspen Way, as offsite grading to the west over the Travis Trust and City of Yorba Linda properties will be eliminated. The grading footprint will also be reduced from the original Option 1 as the bridge structure across Blue Mud Canyon for the main access road will be straightened and the existing road down through Blue Mud Canyon will be eliminated, as well as the grading adjacent to the original Option 1 main entrance road. The shorter, more direct main access road across the bridge designed as part of Option 1 Modified will result in marginally fewer vehicle miles traveled on an annual basis to and from the project as the main entrance road will be reduced by 0.28 miles. No additional or substantial changes per CEQA Guidelines Section 15162 related to Air Quality impacts will occur with implementation of Option 1 Modified. Therefore, the FEIR as certified remains adequate related to Air Quality analysis.

Biological Resources

Compared to Option 1 discussed in the FEIR, Option 1 Modified will reduce the roadway impacts to Blue Mud Canyon as the main access road and grading on both sides of Blue Mud Canyon analyzed in the FEIR for Option 1 will be eliminated and a shorter more direct bridge with less permanent impacts will be constructed. Option 1 Modified will result in less environmental impact overall than either the San Antonio (Option 2B) or Aspen Way (Option 2 Modified) access options due to the elimination of all of the offsite grading over the Travis Trust property and the City of Yorba Linda property to the west.

Compared to Option 1, Option 1 Modified reduces permanent impacts to ACOE jurisdiction from 0.91 acre to 0.87 acre and reduces impacts to jurisdiction wetlands from 0.02 acre to 0.0 acre. By way of comparison, the San Antonio Access Option (Option 2B in the FEIR), proposed substantially more impact - 1.17 acre of the ACOE jurisdiction and 0.11 acre of jurisdictional wetlands.

Temporary biological impacts will occur due to grading, access and equipment staging related to bridge construction. A bridge was proposed with Option 1. The bridge identified in Option 1 Modified is reduced in length and the configuration and location have been modified. This modification will result in disturbance to existing vegetation, including areas within ACOE and CDFW jurisdiction. The disturbed areas are within the previously designated fuel modification zones and analysis of the impacts was considered in the FEIR. The removal or disturbance of vegetation will be mitigated by replacement in kind in all disturbed areas as detailed in the following comparisons.

Compared to Option 1, Option 1 Modified results in an additional 0.08 acre of temporary impacts to ACOE jurisdiction associated with bridge construction; however, these impacts would be mitigated with implementation of Mitigation Measures Bio-6, Bio-7 and Bio-8 by restoring the impacted areas in place, resulting in no significant impacts.

Compared to Option 1, Option 1 Modified reduces total permanent impacts to CDFW

jurisdiction from 1.955 acres to 1.88 acres, and impacts to riparian habitat from 1.15 acres to 0.735 acre. By way of comparison, Option 2B proposed impacts to 2.70 acres of CDFW jurisdiction, of which 1.90 acres consisted of riparian habitat.

Option 1 Modified results in an additional 0.14 acre of temporary impacts to CDFW jurisdiction associated with bridge construction; however, these impacts would be mitigated as detailed in Mitigation Measures Bio-6 and Bio-7 by restoring the impacted areas in place, resulting in no significant impacts.

There would be no effect on Braunton's Milkvetch or Mariposa Lily that has not been analyzed in the FEIR, Mitigation Measures Bio-2 and Bio-3 would reduce impacts to less than significant.

Compared to Option 1, Option 1 Modified reduces permanent impacts to Blue Elderberry Woodland from 11.37 acres to 11.22 acres and does not affect the restoration sites identified in the Habitat Monitoring and Mitigation Plan dated April, 2014. By way of comparison, Option 2B proposed 12.37 acres of impacts. Temporary impacts of 0.02 acre associated with construction of the bridge for the primary access across Blue Mud Canyon would occur and be mitigated in place, resulting in no additional significant impacts due to temporary impacts.

Compared to Option 1, Option 1 Modified reduces permanent impacts to California Walnut Woodland from 0.48 acre to 0.08 acre. Temporary impacts totaling 1.17 acres would occur associated with construction of the bridge for the primary access across Blue Mud Canyon. However, the bridge will be crossing an area previously identified as subject to temporary impacts within the Fire Prone Vegetation Removal Zone and already identified as an area subject to temporary vegetation impacts.[1] Temporary impacts to California Walnut Woodland associated with construction of the bridge would be mitigated with Mitigation Measure Bio-1 within the temporary impact area and, therefore, impacts would be reduced to less than significant.

Both Option 1 and Option 1 Modified avoid the direct impacts to willow riparian habitat covering 0.44 acres occupied by least Bell's vireo that would result with implementation of Option 2B. Offsite impacts to least Bell's vireo habitat associated with utilities and secondary access are the same for Option 1 and Option 1 Modified.

A Coastal California Gnatcatcher Focused Survey report dated July 8, 2016 for the Cielo Vista property adjacent to the Project site identified that four gnatcatchers were observed within 34.92 acres of suitable habitat on June 12, 2016 and subsequent surveys. The locations of the sightings were identified as Territory 1 (the jurisdictional drainage west to the eastern terminus of Aspen Way south southeast to the drainage below 4545 Dorinda Road) and Territory 2 (the jurisdictional drainage east along the hillside below the proposed project's footprint northern boundary). The report noted that although the gnatcatchers came within approximately 35 feet of the project footprint at the closest, they were consistently observed outside the Cielo Vista proposed work limits as further described below.

The Option 1 Modified project emergency access would be located along an access easement

1 It is important to note that California walnuts were noted as not exhibiting "fire-prone" characteristics and to be retained where the plants are healthy. Any impacts to healthy California walnuts would be mitigated in place.

through the adjacent Cielo Vista property; however, the roadway avoids the areas identified in the Gnatcatcher Surveys as locations where sightings occurred. All of the sighting locations identified in the survey occurred along the western boundary of the Cielo Vista property. Option 2 and 2B, as analyzed in the FEIR, included access roads that traversed the Cielo Vista property in an east/west direction, which could potentially result in impacts to the gnatcatcher locations. The proposed Esperanza Hills emergency access roadway under Option 1 Modified is located within the eastern portion of the Cielo Vista project, traversing the site in a north/south direction, thereby avoiding the gnatcatcher locations entirely. Therefore, Option 1 Modified would have no impacts on Coastal California Gnatcatchers.

No changes are required in the Habitat Mitigation and Monitoring Program dated April 2014 or the Native Plant Restoration Plan dated April 2014.

The Project will not have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies or regulations or by the CDFW or the USFWS. Because Option 1 Modified will result in less disturbance overall, Option 1 Modified will not result in any impacts to plant species, special status wildlife and sensitive natural communities not previously analyzed in the previous biotechnical reports and April 2014 Habitat and Mitigation Monitoring Program. Consequently, there are no substantial changes per CEQA Guidelines Section 15162 related to Biological Resources and the FEIR remains adequate as certified.

Cultural Resources

Option 1 Modified will result in less offsite grading than either the San Antonio or Aspen Way Access Options and grading in Blue Mud Canyon will be reduced from the original Option 1, as described above. The FEIR noted that there is no evidence of archaeological resources or human burial discovered on the Project Site and no paleontological resources have been previously documented within a one-mile radius. The reduced grading footprint will have less potential to uncover unknown resources during construction but mitigation has been included to in the FEIR to reduce potential impacts to less than significant if such resources are discovered. No additional or substantial changes per CEQA Guidelines Section 15162 related to Cultural Resources will occur with implementation of Option 1 modified and the FEIR analysis and mitigation remains adequate.

Geology and Soils

Compared to Option 1, Option 1 Modified reduces grading and the extent of retaining walls necessary through Blue Mud Canyon as set forth above. Compared to either the San Antonio (Option 2B) or Aspen Way (Option 2 Modified) access options, Option 1 Modified will also eliminate all offsite grading for the roads on the Travis Trust and City of Yorba Linda properties to the west. This reduced grading in the Blue Mud Canyon area and offsite areas will reduce potential impacts due to erosion, slope stability, ground rupture, settlement, compressible soils, liquefaction, groundwater and expansive soils, which appropriate mitigation measures had reduced to a less than significant level for all access options analyzed in the FEIR.

Implementation of Option 1 Modified will not result in substantial changes requiring major revisions per CEQA Guidelines Section 15162 related to Geology and Soils impacts and the

DEIR, with mitigation as proposed, remains adequate.

Greenhouse Gas Emissions

Option 1 Modified will reduce grading quantities because the roadway is more direct and does not require off-site grading to the west. The shortened main access road will also minimally reduce vehicle miles traveled within the project property limits; however, the reduction will not result in a significant change to potential GHG emissions as analyzed in the FEIR. Therefore, no significant changes per CEQA Guidelines Section 15162 in the area of GHG emissions that will occur and the Revised FEIR remains adequate for GHG analysis.

Hazards and Hazardous Materials

The Project was analyzed in terms of the existence of oil wells on the Project site, the location of the Project in a Severe Fire Hazard Zone, proximity to the Whittier Fault and the disturbance of sensitive biological habitat due to the establishment of fuel modification zones for fire protection.

The Option 1 Modified road alignment will increase the distance between the oil well on the Yorba Linda Estates property and the nearest residential lot, but will not otherwise affect any oil wells or the impacts related to fuel modification requirements. The revised alignment of the emergency road creates an additional 50 foot buffer to the open space to the west which increases the distance between open space and the residential structures. Evacuation to and from the site will be enhanced through shortening the main access road by 0.28 miles. The access road will be six feet wider and on a bridge which is located further away from the Whittier Fault than the previous main access road. The new road alignment reduces disturbance to sensitive biological resources for fuel modification purposes, as it reduces the amount of fuel modification in Blue Mud Canyon through the elimination of the previous road down through the Canyon. . Mitigation Measures and project design features already included in the FEIR will reduce potential impacts to a less than significant level. No substantial changes per CEQA Guidelines Section 15162 will occur and, therefore, the FEIR analysis and mitigation measures remain adequate.

Hydrology and Water Quality

The Project includes conditions of approval to ensure compliance with all local regulations for water quality, preparation of stormwater pollution prevention and drainage plans, and best management practices to lessen erosion and siltation impacts. With implementation of the conditions of approval, no unavoidable impacts related to hydrology and water quality have been identified. Roadway realignment proposed with Option 1 Modified will not result in changes to the requirement for compliance with local regulations related to hydrology and water quality. Erosion and siltation impacts have been mitigated and less grading will be required with the realignment of the access and emergency roadways under Option 1 Modified. An updated Water Quality Management Plan (WQMP) was submitted to the County on September 26, 2016. The WQMP did not identify any new or additional impacts due to implementation of Option 1 Modified. No substantial changes per CEQA Guidelines Section 15162 will occur and, therefore, the FEIR analysis and mitigation measures remain adequate.

Land Use and Planning

The Project does not conflict with any applicable land use policies and regulations and no unavoidable adverse impacts are associated with the Project. The number of lots remains the same as analyzed in the FEIR with only minor lot line modifications. Modifications to the Vesting Tentative Tract Map will be required, but these proposed changes represent a minor modification under Specific Plan Section 13.4 for the Vesting Tentative Tract Map, which must be approved by the Board of Supervisors under Section 13.3 of the Specific Plan since road alignment for public access is changed. No substantial changes per CEQA Guidelines Section 15162 will result and the FEIR analysis for Land Use and Planning remains consistent and adequate.

Noise

Project construction will comply with applicable Noise Ordinance regulations. Long term operation will result in potential traffic noise impacts under Option 1 and Option 2 which are considered significant and unavoidable. Option 1 Modified will not result in any substantial changes per CEQA Guidelines Section 15162 related to increases in noise and the FEIR, with included mitigation measures, remains adequate.

Population and Housing

No significant impacts related to population and housing were identified in the Revised FEIR analysis either individually or cumulatively. The Option 1 Modified proposal will not result in an increase or decrease in housing or population. The modification will not result in substantial changes in the project or involve new information per CEQA Guidelines Section 15162. The FEIR remains adequate with respect to the area of Population and Housing.

Public Services

There will be no change to the analysis in the FEIR as no additional public services will be required with Option 1 Modified. No substantial changes per CEQA Guidelines Section 15162 will occur and, therefore, the FEIR remains adequate in the area of Public Services.

Recreation

Option 1 Modified increases the total park area by .87 acres, restores natural open space in Blue Mud Canyon, reduces the length of the main access road through Blue Mud Canyon by .28 miles, and eliminates all grading to the west over the Travis Trust and City of Yorba Linda properties, leaving those areas undisturbed. The number of parks remains unchanged. No impacts to proposed recreation improvements will result. The modification will not result in a substantial change in the FEIR analysis per CEQA Guidelines 15162 and the FEIR remains adequate in the area of Recreation.

Transportation and Traffic

Compared to original Option 1, Option 1 Modified provides a roadway realignment that will straighten the main access road, reduce its length by .28 miles and widen it by 6 feet. Vehicle

miles traveled by residents daily will be reduced and emergency access will be improved. The emergency road has been extended to tie into the heart of Planning Area 1 near the fire staging area to permit more flexibility for OCFA in the event of an emergency. Compared to the San Antonio and Aspen Way access options, Option 1 Modified will have only one main entrance on Stonehaven with an emergency entrance out to Via Del Agua but will again minimally reduce vehicle miles traveled on a daily basis and provide for a shorter, wider road to Stonehaven. The traffic analysis for Option 1 in the FEIR remains unchanged as the number of lots and amount of traffic has not changed, except as set forth above.

In a letter dated September 8, 2016, Linscott Law & Greenspan (LLG), traffic consultants, evaluated Option 1 Modified. The evaluation, which is attached hereto, concluded that Option 1 Modified will not change the project traffic generation forecast or distribution pattern. The evaluation also confirmed that the findings in the approved Traffic Impact Analysis Report (March 18, 2013), Traffic Impact Analysis Addendum (October 14, 2013) and Emergency Fire Evacuation Analysis (May 9, 2014) remain applicable. LLG concluded that Option 1 Modified does not result in any new significant environmental effects related to traffic and does not change previous conclusions or analysis.

Per CEQA Guidelines Section 15162, this roadway realignment is not a substantial change requiring major revisions, a substantial change with respect to circumstances under which the project is being undertaken or new information not known with respect to the FEIR as analyzed.

Utilities and Service Systems

Option 1 Modified will require less construction water due to the reduced grading both onsite and offsite as set forth above, but will not otherwise result in any change in the utility and service system analysis in the FEIR. Because the number of lots and location of utility servicing lines remains the same, no substantial changes or new information will occur with Option 1 Modified per CEQA Guidelines Section 15162 and, therefore, the FEIR remains adequate in the analysis for Utilities and Service Systems.

Attachments

Included as attachments hereto are a June 20, 2016 letter from Tony Bomkamp of Glenn Lukos Associates which provides a review of the biological impacts associated with Option 1 Modified. Also attached are the Habitat Mitigation and Monitoring Plan and Native Plant Restoration Plan prepared by Glenn Lukos Associates dated April 2014 which are referenced herein under Biological Resources. As noted above, the Linscott, Law & Greenspan evaluation of the traffic impacts related to Option 1 Modified is also attached. In addition, the Gnatcatcher Focused Survey dated July 8, 2016 and prepared for the Cielo Vista project is attached for reference.

GLENN LUKOS ASSOCIATES
Regulatory Services

June 20, 2016

Colby Cataldi
Deputy Director
OC Public Works/Development Services
300 N. Flower Street
Santa Ana, CA, 92703

Subject: Review of Option 1 Modified, Esperanza Hills Project, Yorba Linda, Orange County, California

Dear Mr. Cataldi,

Glenn Lukos Associates (GLA) has conducted a review of the proposed VTTM for Option 1 Modified [Exhibit 1], comparing it with Option 1 that was evaluated in the Project FEIR, the Biological Technical Report that was an appendix to the FEIR.

From a biological perspective, Option 1 Modified will result in less environmental impact overall than either the San Antonio (Option 2B) or Aspen Way (Option 2 Modified) access options due to the elimination of all of the offsite grading over the Travis Trust property and the City of Yorba Linda property to the west, and results in reduced overall permanent impact than Option 1 due to the reduced grading in Blue Mud Canyon for the main access road. As with all access options, Option 1 Modified results in less than significant impact with mitigation. No changes are required in the Habitat Mitigation and Monitoring Program dated April, 2014 or the Native Plant Restoration Plan dated April 2014, which is attached hereto as Exhibit 2.

The specific details and comparisons are set forth below. As noted, a map of Option 1 Modified showing the revised street alignments and their effects on the existing biology is attached as Exhibit 1.

**U.S. Army Corps of Engineers Jurisdiction**

Compared to Option 1, Modified Option 1 reduces permanent impacts to Corps jurisdiction from 0.91 acre to 0.87 acre and reduces impacts to jurisdiction wetlands from .02 acre to 0.0 acre. By way of comparison, the San Antonio Access Option (Option 2B in the FEIR), proposed

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substantially more impact - 1.17 acre of the Corps jurisdiction and 0.11 acre of jurisdictional wetlands.

Modified Option 1 does result in an additional 0.08 acre of temporary impacts associated with bridge construction; however, these impacts would be mitigated by restoring the impacted areas in place, resulting in no significant impacts.

**California Department of Fish and Wildlife**

Compared to Option 1, Option 1 Modified reduces total permanent impacts to CDFW jurisdiction from 1.955 acres to 1.88 acres, and impacts to riparian habitat from 1.15 acres to 0.735 acre. By way of comparison, Option 2B proposed impacts to 2.70 acres of CDFW jurisdiction, of which 1.90 acres consisted of riparian habitat.

Modified Option 1 does result in an additional 0.14 acre of temporary impacts associated with bridge construction; however, these impacts would be mitigated by restoring the impacted areas in place, resulting in no significant impacts.

**Brauton's Milkvetch**

Option 1 Modified would result in no impact on the Braunton's Milkvetch, which is located in Planning Area 2, over one half mile north, or in the proposed replanting areas, which are not located near the proposed main access road site.

**Mariposa Lily**

Option 1 Modified would result in no impact on the Mariposa Lily or the replanting site for the Mariposa Lily.

**Blue Elderberry Woodland**

Compared to Option 1, Option 1 Modified reduces permanent impacts to Blue Elderberry Woodland from 11.37 acres to 11.22 acres and does not affect the restoration sites identified in the Habitat Monitoring and Mitigation Plan dated April, 2014. By way of comparison, Option 2B proposed 12.37 acres of impacts. Temporary impacts of 0.02 acre associated with construction of the bridge for the primary access across Blue Mud Canyon would occur and be mitigated in place, resulting in no additional significant impacts due to temporary impacts.

**California Walnut Woodland**

Compared to Option 1, Option 1 Modified reduces permanent impacts to California Walnut Woodland from 0.48 acre to 0.08 acre. Temporary impacts totaling 1.17 acres would occur associated with construction of the bridge for the primary access across Blue Mud Canyon. However, the bridge will be crossing an area previously identified as subject to temporary impacts within the Fire Prone Vegetation Removal Zone and already identified as an area subject to temporary vegetation impacts.[1] Temporary impacts to California Walnuts, associated with construction of the bridge, would be mitigated within the temporary impact area, with the result that impacts would be reduced to less than significant.

**Least Bell's Vireo**

Both Option 1 and Option 1 Modified eliminate the direct impact to willow riparian habitat covering 0.44 acres that is occupied by least Bell's vireo for Option 2B. Offsite impacts to least Bell's vireo habitat associated with utilities and secondary access are the same for Option 1 and Option 1 Modified.

If you have any further questions regarding this matter, please do not hesitate to contact me at (949) 837-0404 ext. 41.

Sincerely,

Tony Bomkamp

Glenn Lukos Associates
Senior Biologist

cc. Doug Wymore, Yorba Linda Estates, LLC

[1] It is important to note that California walnuts were noted as not exhibiting "fire-prone" characteristics and to be retained where the plants are healthy. Any impacts to healthy California walnuts would be mitigated in place.


## Legend

Property Boundary

Project Site Plan

N

0 350 700 1,400

Feet

**1 inch = 700 feet**

**ESPERANZA HILLS SPECIFIC PLAN AREA**

Project Site Plan

GLENN LUKOS ASSOCIATES

Exhibit 1

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# MITIGATION AND MONITORING PLAN
# FOR

# IMPACTS TO THE FEDERALLY-ENDANGERED BRAUNTON'S MILKVETCH (*ASTRAGALUS BRAUNTONII*)

# AND

# CALIFORNIA RARE PLANT RANK 1B INTERMEDIATE MARIPOSA LILY *(CALOCHORTUS WEEDII* VAR. *INTERMEDIUS)*

# FOR

# ESPERANZA HILLS SPECIFIC PLAN AREA

**APRIL 2014**

**Prepared for:**

**Yorba Linda Estates, LLC**
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**MITIGATION AND MONITORING PLAN**

## I. DESCRIPTION OF THE PROJECT/IMPACT SITE

### A. Responsible Parties

Applicant/Permittee: Yorba Linda Estates, LLC
7114 East Stetson, Suite 350
Scottsdale, Arizona 85251
Contact: Douglas G. Wymore

Preparer of Mitigation Plan: Glenn Lukos Associates, Inc.
Contact: Tony Bomkamp
29 Orchard
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Telephone: (949) 837-0404

### B. Location of Project and Brief Summary of Overall Project

The Project Site comprises approximately 469 acres adjacent to the city of Yorba Linda within unincorporated Orange County, California, while the Study Area, which includes the Project Site and the location of proposed off-site impacts, comprises 504 acres [Exhibit 1 – Regional Map]. The Project Site is located within Section 17, 18 of Township 3S, Range 8W, of the Yorba Linda (dated 1964 and photorevised in 1981) and Prado Dam (dated 1967 and photorevised in 1981) USGS 7.5" Quadrangle Maps. The Project Site also includes un-sectioned portions of Township 3S, Range 8W [Exhibit 2 – Vicinity Map]. Elevation ranges from approximately 550 feet at the southwest boundary to 1,550 feet at the north boundary. The Study Area is bordered by Blue Mud Canyon and Green Crest Drive to the south, Chino Hills State Park to the north and east, and residential areas adjacent to San Antonio Road to the west. The property immediately north east, and west of the study area is currently open space, while property bordering the southern boundary is residential development.

Esperanza Hills is located within unincorporated Orange County (County) north of the SR-91 Freeway, southwest of Chino Hills State Park, and adjacent to existing residential development in the City of Yorba Linda (City). The Project is east of San Antonio Drive and north of Stonehaven Drive in the City. The project footprint is bordered by Chino Hills State Park on the north and east. To the South and northwest lie existing residential communities, including Dominguez Ranch, Green Hills, Casino Ridge, Travis Ranch, and Yorba Linda Hills. The Cielo Vista project, a proposed residential subdivision in the County, lies to the west and southwest. The Esperanza Hills property is largely undeveloped, with the exception of oil well operation in the western portion of the site.

Habitats on-site include non-native grasslands, coastal sage scrub, chaparral, walnut and oak woodlands, riparian habitats, and disturbed areas. The project site was burned in the "Freeway Complex Fire" in the fall of 2008, and prior had been historically used for animal grazing. Currently the site is used as open space and for energy transmission associated with the Southern California Edison Company.

## C. Impacts to Braunton's Milkvetch

Braunton's milkvetch (*Astragalus brauntonii*) is a perennial herb designated as a California Rare Plant Rank List 1B.1 species, and is federally listed as endangered. The species is known to occur in Los Angeles, Orange, Riverside, and Ventura Counties. Braunton's milkvetch is a fire follower and occurs mainly in chaparral, coastal scrub, and valley and foothill grasslands in recently burned or disturbed areas in sandstone soil with carbonate layers from 4 to 640 meters in elevation.

Approximately 400 individuals of Braunton's milkvetch were detected during focused surveys in 2010, as depicted by Exhibit 3. A survey conducted on January 9, 2013 found many of the dried remains of the plants still intact; however all individuals of this short-lived perennial had senesced.

All three project alternatives would impact all Braunton's milkvetch individuals within the project site [Exhibit 3].

## D. Impacts to Intermediate Mariposa Lily

Intermediate mariposa lily (*Calochortus weedii* var. *intermedius*) is a bulbiferous herb designated as a California Rare Plant Rank List 1B.2 species but is not Federally or State Listed. This species is found in Los Angeles, Orange, Riverside, and San Bernardino Counties. Intermediate mariposa lily occurs mainly in chaparral, coastal sage scrub, and valley and foothill grasslands in rocky, calcareous soils from 105 to 855 meters in elevation.

Relative to the intermediate mariposa lily, it is important to note for purposes of context that while this species is designated as a CRPR List 1B.2, it is subject to substantial preservation efforts in the region. Specifically, the USFWS has made a finding that this species has met the terms for "conditional coverage" within the adjacent Orange County Central and Coastal Natural Community Conservation Plan/Habitat Conservation Plan area where 758 of 826 (92-percent) known intermediate mariposa lily occurrences and 79,108 or 90,140 (87-percent) individuals will be conserved.1 GLA is currently engaged in restoration/translocation efforts for this species within the Orange County Southern Subregion Habitat Conservation Plan area and is aware of past problems with translocation efforts and is working closely with Tree of Life Nursery in implementing procedures that increase survival of propagated and translocated individuals.

[1] USFWS and CDFG Joint Letter, dated July 7, 2006. "Amendment to Proposed Mitigation for Impacts to Intermediate Mariposa Lily Associated with Mountain Park, East Orange, and Irvine Planning areas 1, 2, and 6, Orange County California". Addressed to Scot Scialpi at the he Irvine Company.

## II. OBJECTIVES OF THE COMPENSATORY MITIGATION

**Braunton's Milkvetch**

The objective of the proposed mitigation and monitoring program for Braunton's milkvetch is to provide for full mitigation of permanent impacts to 400 individuals of Braunton's milkvetch.

In order to offset impacts to 400 individuals of Braunton's milkvetch, the Project will include planting of 480 individuals of milkvetch within an area of suitable habitat in the undeveloped portions of the property, or suitable offsite areas (e.g., Chino Hills State Park) for a ratio of 1.2:1, with the additional 20-percent included to account for mortality in the planted individuals. The specific mitigation area has not yet been identified, but suitable candidate areas that may be proposed for mitigation based on presence of suitable soils are depicted on Exhibit 4.

**Intermediate Mariposa Lily**

The objective of the proposed mitigation and monitoring program for intermediate mariposa lily is to provide for full mitigation of permanent impacts to 326 individuals of intermediate mariposa lily.

In order to offset impacts to 326 individuals of intermediate mariposa lily, the Project will include planting of 391 individuals of mariposa lily within an area of suitable habitat in the undeveloped portions of the property for a ratio of 1.2:1, with the additional 20-percent to account for mortality in the planted individuals. The final mitigation area has not yet been identified, but candidate areas that may be proposed for mitigation based on presence of suitable soils are depicted on Exhibit 4.

### A. Time Lapse Between Impacts and Expected Compensatory Mitigation Success

Project grading activities will commence upon receipt of permits with project impacts expected to occur immediately thereafter. Seeds have already been collected from the population to be impacted and will be propagated following project approval and final site selection. Milkvetch and mariposa lily mitigation site preparation and planting shall conducted in a timely manner consistent with the growth and germination rates for each species. Eradication of non-native plant species encountered will be concurrent with commencement of grading or as determined by the project biologist based on the dates for expected planting. For Braunton's milkvetch, installation may be extended if offsite locations are determined to be more appropriate.[2]

Within one year of the completion of mitigation installation, it is expected that planted Braunton's milk vetch will set seed in the mitigation site and begin to establish a seed bank. For the intermediate mariposa lily, at the end of five years, a minimum of 326 individuals would be established and reproducing.

[2] The life history of the milkvetch includes long periods (many decades) of dormancy, and as such the seed is very long-lived (i.e., 80 years or more). As such extending the germination and planting would not adversely affect the viability of the restoration program.

## III. DESCRIPTION OF THE PROPOSED COMPENSATORY MITIGATION SITE

### A. Location and Size of the Compensatory Mitigation Site

As previously stated, the final location of the mitigation site has not yet been identified; however, separate candidate sites have been identified as depicted on Exhibit 4 and will be of sufficient size to support a population of 400 individuals of Braunton's milkvetch and 326 individuals of intermediate mariposa lily, respectively. As noted, numerous suitable offsite areas are also available in areas such as Chino Hills State Park, which may also be used following necessary authorizations.

### B. Ownership Status

The present owners of the candidate onsite mitigation sites are:

Applicant/Permittee: Yorba Linda Estates, LLC
7114 East Stetson, Suite 350
Scottsdale, Arizona 85251
Contact: Douglas G. Wymore

## IV. IMPLEMENTATION PLAN FOR MILKVETCH AND MARIPOSA LILY COMPENSATORY MITIGATION

### A. Rationale for Expecting Implementation Success

The proposed mitigation will be installed following impacts to Braunton's milkvetch and intermediate mariposa lily within the development area and will be based on germination and growth of the container stock for each species. The candidate mitigation areas are good candidates for establishment of Braunton's milkvetch and mariposa lily habitat rehabilitation, as they exhibit the same soils as the populations to be impacted.

### B. Responsible Parties

Applicant/Permittee: Yorba Linda Estates, LLC
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## C. Milkvetch Propagation

Braunton's milkvetch seeds were previously collected from the impacted population on June 19, 2010, and cleaned and stored at S&S Seeds for future propagation. Prior to project impacts and mitigation planting, the seeds will be transferred from S&S seeds to Tree of Life Nursery, or other appropriate nursery experienced in native plant propagation from seed, where they will be scarified and planted. As Braunton's milkvetch is a fire follower, the seeds require scarification, either though heat or physical means, to allow for exchange of gases and moisture though the seed coat. Plants will be grown to either liner or gallon size prior to planting at the mitigation site.

## D. Mariposa Lily Propagation

Priority will be given to cultivated seedlings grown under greenhouse conditions, with the direct seeding of translocation sites being a secondary use of seed collected from natural populations. The intermediate mariposa lily will be cultivated in a greenhouse setting for transplanting later to the receptor sites. Plants will be germinated and raised to a sufficient size necessary for transfer of the bulbs to the restoration site. The facility used for seed storage will also be used for greenhouse cultivation. Cultivation should begin at least two seasons prior to translocation of natural populations to ensure enough time for cultivated individuals to be large enough for transplanting. Individuals will be cultivated from seed collected from natural populations to be translocated.

Seed germination efforts will begin early in the growing season. Soil will be salvaged from the sites of natural populations to be translocated. The salvaged soil will be placed in standard greenhouse flats and mixed with washed builder’s sand in an approximate ratio of three parts soil to one part sand. The sand will be used to loosen the soil and prevent from becoming too hard upon moistening, due to the high clay content.

Seed will be sprinkled on a moist soil surface, but the seeds will not be covered by the soil. The seeds will be watered immediately with a fine mist and this procedure will be repeated three times daily to keep them continuously moist. The greenhouse flats will be covered with shade cloth to reduce evaporative water loss from the soil and to minimize mechanical disturbance from watering.

Each flat will be weeded throughout the growing season. Supplemental water will be given as needed during the dry periods. Supplemental watering will be discontinued by late spring/early summer to allow the cultivated plants to enter the natural dormancy cycle for the species, which begins at the onset of summer drought.

## E. Site Preparation

In order to enhance the potential for translocation of the milkvetch, soil from the existing location will be collected and spread on the final milkvetch translocation area if the mitigation occurs within the Study Area. The top one foot of soil from the currently occupied areas will

translocated to the restoration site and spread to depth of approximately six inches prior to planting of the nursery propagated individuals.

Site preparation for the intermediate mariposa lily will consist of clearing and controlling exotic plants, removing trash and debris, preparing planting holes and doing any other work necessary to make ready the area for planting. No restoration or mitigation shall occur in fuel modification zones, future project areas or areas of maintenance.

**Exotic Vegetation Control**

The predominance of non-native, invasive weed species throughout California has presented a challenge to most native revegetation projects. Weedy species are opportunistic, rapidly colonizing disturbed sites such as revegetation sites. This can lead to the displacement of native species if the weedy species are not properly treated. Several of these invasive species are capable of out-competing most native understory and herbaceous plants and some can out-compete and even displace existing native trees and shrubs. Therefore, non-native vegetation will be removed from the mitigation site and disposed of in a manner and at a location which prevents its reestablishment. Removal shall be done at least twice annually during the spring/summer season, for the first year.

One of the largest obstacles to the successful revegetation of a site is the exotic seed bank residing in the soil. This seed bank can persist for several years, or even decades, and poses one of the major threats to restoration programs. Undesirable exotic plants will be eradicated either during initial site grading or prior to site preparation. If grading precedes planting by more than a few months, it will be necessary to eradicate undesirable exotic plants that have become established prior to planting and seeding of the mitigation sites. If deemed necessary, a "grow-and-kill" cycle will be established during that period. "Grow and kill" is a cycle of applying water, germinating the non-native, invasive species and spraying with the appropriate chemical. This allows a large portion of the seed bank currently present in the soil to be removed. Eliminating or substantially reducing the competition from non-native exotics early in the life cycle of native plants helps to ensure more rapid growth and cover by the native species.

Initially and whenever possible, invasive species shall be removed by hand or by hand-operated power tools rather than by chemical means. Where control of non-native vegetation is required within the bed, bank, or channel of a stream using herbicides and there is a possibility that the herbicides could come into contact with water, the Contractor shall employ only those herbicides, such as Rodeo/Aquamaster (Glyphosate), which are approved for aquatic use. If surfactants are required, they shall be restricted to non-ionic chemicals, such as Agri-Dex, which are approved for aquatic use.

The type, quantity, and method of herbicide application will be determined by a California licensed Pest Control Advisor (PCA) who will inspect the site, write project recommendations and submit same to the Project Biologist for approval. Pesticide recommendations shall include, but are not limited to, the pesticides to be used, rates of application, methods of application, and areas to which pesticides are to be applied. A licensed Pest Control Operator (PCO) may work under the supervision of the PCA who will employ best management practices regarding the

timing, quantity, and type of herbicide for each species. The PCA will determine both immediate and follow-up herbicide application for each species.

No herbicides shall be used where threatened or endangered plant species occur, when wind velocities are above 5 miles per hour, or on native vegetation unless specifically authorized, in writing, by CDFW.

**Nesting Birds**
The Contractor may remove vegetation within the mitigation site March 1 to July 31 if a qualified biologist conducts a survey for nesting birds within three days prior to the vegetation removal and ensures no nesting birds shall be impacted by the project. These surveys shall include the areas within 200 feet of the edge of the proposed impacts. If active nests are found, a minimum 50-foot (200 feet for raptors) fence barrier shall be erected around the nest site. No habitat removal or any other work shall occur within the fenced nest zone if the nest continues active beyond July 31, until the young have fledged, are no longer being fed by the parents, have left the nest, and will no longer be impacted by the project. The Contractor shall submit the mapped survey results to CDFW for review and approval prior to vegetation removal to ensure full avoidance measures are in place. The Contractor will adhere to all applicable requirements of federal and state codes (e.g., Migratory Bird Treaty Act and CDFG Code 3503.5).

## F. Planting Plan

### Braunton's Milkvetch

Following translocation of soil from areas currently occupied by the Braunton's milkvetch, planting shall consist of preparing planting holes, installation of 480 Braunton's milkvetch individuals, and installing plant protection devices. No planting shall be done in any area until the area concerned has been prepared in accordance with the plans and presents an appearance satisfactory to the Project Biologist.

All planting should be done after the first wetting rains between October 1 and November 1 to take advantage of the winter rainy season, dormancy of foliage, and rooting period to ensure optimum survival of plantings. Planting, maintenance, monitoring and reporting activities shall be overseen by a Botanist familiar with restoration of native plants.

Milkvetch will be planted as either liner or gallon container stock. Plant stock will be placed in a hole measuring at least twice the diameter and depth of the container. The root structure will be examined and excess root material removed. The top of the rootball will be set slightly above finish grade. The planting hole will be backfilled with native soil. Fertilizer, watering basins, and mulch are not required for this planting method.

### Intermediate Mariposa Lily

Planting shall consist of preparing planting holes, planting 391 intermediate mariposa lily individuals, and installing plant protection devices. No planting shall be done in any area until

the area concerned has been prepared in accordance with the plans and presents an appearance satisfactory to the Project Biologist.

All planting should be done prior to the rainy season beginning October 1 to take advantage of the winter rainy season, dormancy of foliage, and rooting period to ensure optimum survival of plantings. Planting, maintenance, monitoring and reporting activities shall be overseen by a specialist familiar with restoration of native rare plants.

Prior to first rainfall of the new growing season, salvaged/cultivated bulbs will be planted at the receptor sites. Planting of the bulbs should generally average two individuals per square meter; however, in areas where the substrate appears particularly good (few or no nonnatives and the presence of associate species), densities can be increased to three per square meter. For planting bulbs, a hole slightly larger than the bulb itself will be excavated. The bulb will then be placed into the hole and the gap between the section and hole edge will be filled with soil and lightly compacted. Each bulb will be planted either flush with or slightly below the existing soil surface.

### G. Irrigation Plan

No long-term irrigation is required for establishment of milkvetch or mariposa lily. However, immediately following planting, the area may be subject to an initial irrigation from a water truck or other appropriate source.

## V. MAINTENANCE ACTIVITIES DURING THE MONITORING PERIOD

### A. Maintenance Activities

The purpose of this program is to ensure the success of the mitigation plantings. Given the nature of the mitigation site, only limited maintenance is required. Brauton's milkvetch is a perennial fire-follower that typically lives for a few years following a fire, during which time it contributes to the seed bank before it dies back and/or is outcompeted by other species, and then re-emerges following the next wildfire. As such, it is anticipated that the only maintenance required is weeding the three years which is the average life span for these short-lived perennials to ensure that the milkvetch is not outcompeted by weeds prior to setting seed. The Project Biologist will monitor the mitigation site for up to four years, or until all Braunton’s milkvetch individuals have senesced.

These maintenance guidelines are specifically tailored for native plant establishment. The maintenance personnel will be fully informed regarding the habitat establishment program so they understand the goals of the effort and the maintenance requirements. A landscape contractor with experience and knowledge in native plant habitat restoration will supervise all maintenance personnel.

For a period of 120 days following completion of the planting installation, the initial landscape contractor will be responsible for the care of the plantings. The purpose of the 120-day establishment period is to ensure continuity between the installation of the plant material and its short-term maintenance. The contractor's presence during this period is proven to increase project success. The contractor will control the spread of weed species and identify any efforts necessary to ensure the health and survival of the plantings.

**General Maintenance**
The Contractor will perform the following tasks as general maintenance duties:

- Weed control;
- Trash and debris removal;

**Weed Control**
Weeding must be balanced against the possible damage to the target plant species. The Project Biologist will inspect the mitigation areas and will direct the Landscape Contractor to weed as appropriate to maximize survival of the target plants while ensuring minimal damage to the target species. The primary goal of the restoration program is survival of the target species and weeding is only performed to the extent that is necessary to achieve survival of the target species.

**Trash and Debris Removal**
The mitigation site shall be well maintained in order to deter vandalism and dumping of trash. The Contractor is responsible for avoiding impacts to plantings during trash removal activities. Contractor shall, during daily routine maintenance, manually remove weeds, liter, trash, and debris from the mitigation site and dispose of off-site as permitted by law.

## B. Responsible Parties

The Applicant/Permittee will be responsible for financing and carrying out maintenance activities.

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## VI. MONITORING PLAN FOR THE MITIGATION SITE

### A. Performance Standards for Target Dates and Success Criteria

The mitigation effort will be considered successful if at least 400 of the 480 planted milkvetch individuals survive to set seed for at least a single season, and at least 326 of the planted 391 mariposa lily individuals flower during at least one season during the five-year monitoring program. If the survival requirements have not been met, the Applicant is responsible for replacement plantings to achieve these requirements. Replacement plants shall be monitored with the same requirements for one year after planting. Because of the different life histories for these two species, the monitoring and performance standards are addressed in separate sections below.

### B. Monitoring Methods

#### Braunton's Milkvetch

Monitoring will consist of the Project Biologist conducting a census of individuals that have flowered and set seed. The census will be conducted just prior to expected flowering to document survival and then towards the end of the blooming season to document presence of fruits, with appropriate timing to be determined by the Project Biologist. The population will be photo-documented.

#### Intermediate Mariposa Lily

Translocation sites will be monitored annually for a five-year monitoring period. For each flowering period (for five years) following the introduction of salvaged/cultivated bulbs, flowering individuals will be counted within the limits of the translocation site. Population sizes of mariposa lily vary significantly from year to year based primarily on rainfall. Because of this, development of performance standards can be difficult. As such, the performance standards are intended to evaluate general trends relative to performance and include flexibility, recognizing the inherent variability of this species. Under average conditions, populations should increase to carrying capacity over time; however, in any given year, the mariposa lily may not even emerge or may emerge in very low numbers if conditions are not appropriate. Therefore, if during any of the five-year period, the standard set forth for flowering individuals for year five is achieved, the program will be considered as having achieved the five-year performance standard.

### C. Performance Standards

#### Braunton's Milkvetch

Braunton’s milkvetch is a short-lived perennial that can live up to three years. During each of the first three years, the plants will be monitored during the spring and the number of surviving, flowering and fruiting plants will be documented. The success standards will be achieved when at least 400 plants exhibit flowering and fruits during at least one season.

**Intermediate Mariposa Lily**

The performance standards set forth below are based on expected average conditions; however, there is a high likelihood that numbers will vary substantially from year to year.

First-Year Monitoring
The mariposa lily intergrade typically flowers between late May and July and with peak flowering varying according to seasonal rainfall patterns. Monitoring of translocated populations will begin in May and will be conducted every two weeks until peak flowering occurs. When peak flowering occurs, as determined by the Project Biologist, quantitative measurements will be obtained.

Second-Year Monitoring
Success Standard: translocated populations combined to achieve 40 percent of 326 individuals impacted.

Third-Year Monitoring
Success Standard: translocated populations combined to achieve 60 percent of 326 individuals impacted.

Fourth-Year Monitoring
Success Standard: translocated populations combined to achieve 80 percent of 326 individuals impacted.

Fifth-Year Monitoring
Success Standard: translocated populations combined to achieve 100 percent of 326 individuals impacted.

## D. Annual Monitoring Report

An annual report shall be submitted to the County of Orange by Jan. 1 the first year after planting. Photos of the population shall be included. These monitoring reports will also include the following:

- A list of names, titles, and companies of all persons who prepared the content of the annual report and participated in monitoring activities for that year
- A vicinity map indicating location of the mitigation site
- A mitigation site map identifying the milkvetch and mariposa lily populations, photo station locations, etc. as appropriate
- Copies of all monitoring photographs
- Copies of all completed field data sheets
- An analysis of all qualitative and quantitative monitoring data.

## VII. COMPLETION OF COMPENSATORY MITIGATION

### A. Notification of Completion

The Contractor should notify the Applicant/Permittee and the County of Orange in writing when the monitoring period is complete and the success criteria have been met.

### B. Final Success Criteria Resolution

If the project meets all success criteria at the end of the three-year monitoring period for milkvetch, and five-year monitoring period for the mariposa lily, transplantation will be considered a success. If not, the maintenance and monitoring program will be extended one full year at a time, and a specific set of remedial measures will be implemented until the standards are met. Only those areas that fail to meet the success criteria will require additional monitoring. This process will continue until standards are met.

If, during the monitoring period, a destructive natural occurrence does occur which damages or destroys the mitigation planting, and if the mitigation planting was documented to have been proceeding well toward establishment, then reconstruction and replanting will not be required. However, if the mitigation site fares significantly worse than the surrounding natural communities in this same natural disaster, then the mitigation site would be considered to have not established itself, and reconstruction, replanting, and monitoring would continue.

## VIII. CONTINGENCY MEASURES

### A. Initiating Procedures

If a performance standard is not met after the first year, the Project Biologist will prepare an analysis of the cause(s) of failure and, if determined necessary by the County, propose remedial actions for approval.

### B. Alternative Locations for Contingency Mitigation

Sufficient area for establishment of the mitigation site is available so alternative locations would be unnecessary. Although this plan is expected to be successful, both onsite and off-site alternative locations may be used in the event that revegetation cannot be achieved.

### C. Funding Mechanism

The Applicant/Permittee will fund planning, implementation, maintenance and monitoring of any contingency measures that may be required to achieve mitigation goals through an up-front payment to the Contractor. Thereafter, all expenses in implementing this mitigation plan are to be borne by the Contractor.

## D. Responsible Parties

The Applicant/Permittee will be responsible for implementing, maintaining, and monitoring any contingency procedures.

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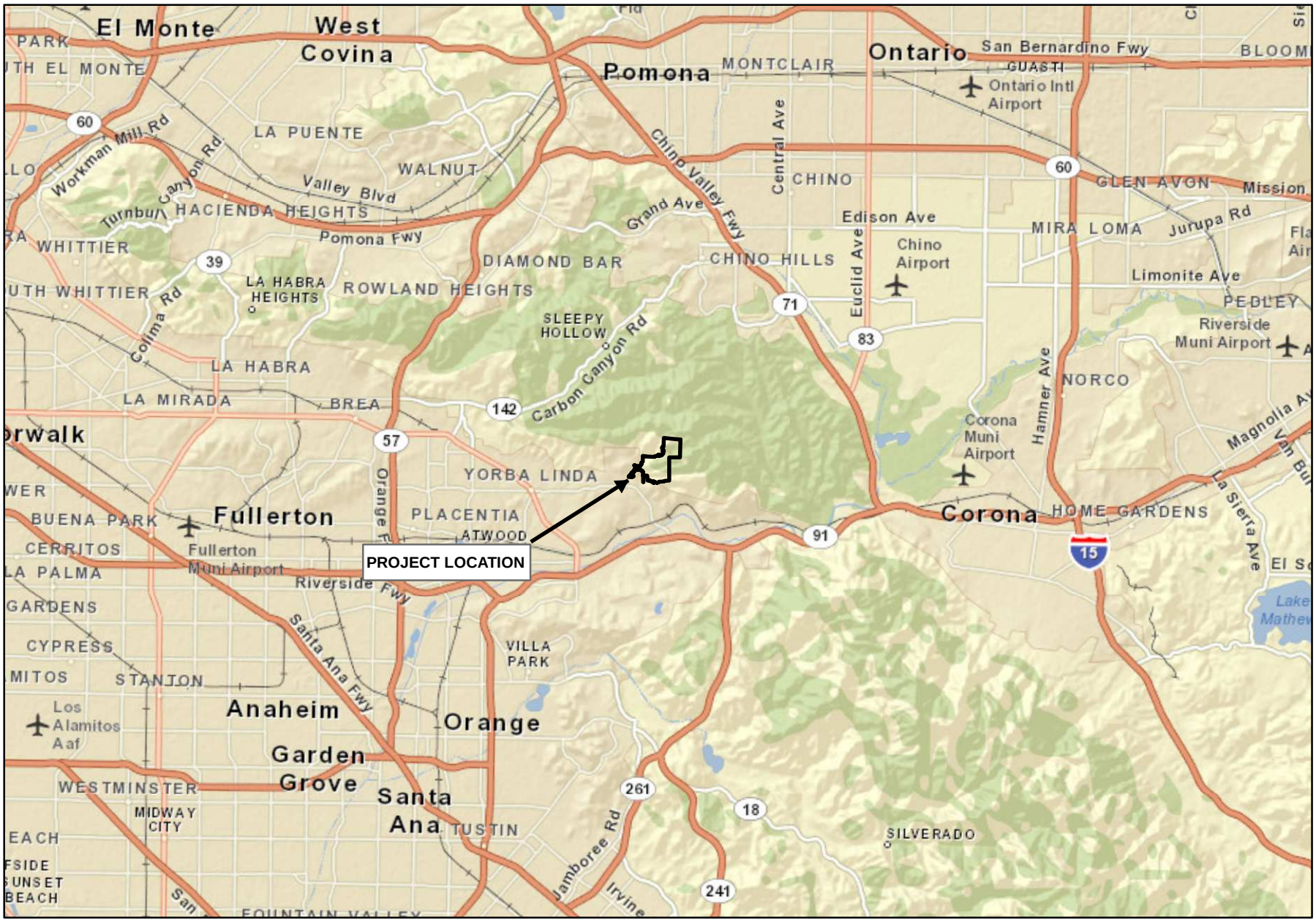


Source: ESRI World Street Map

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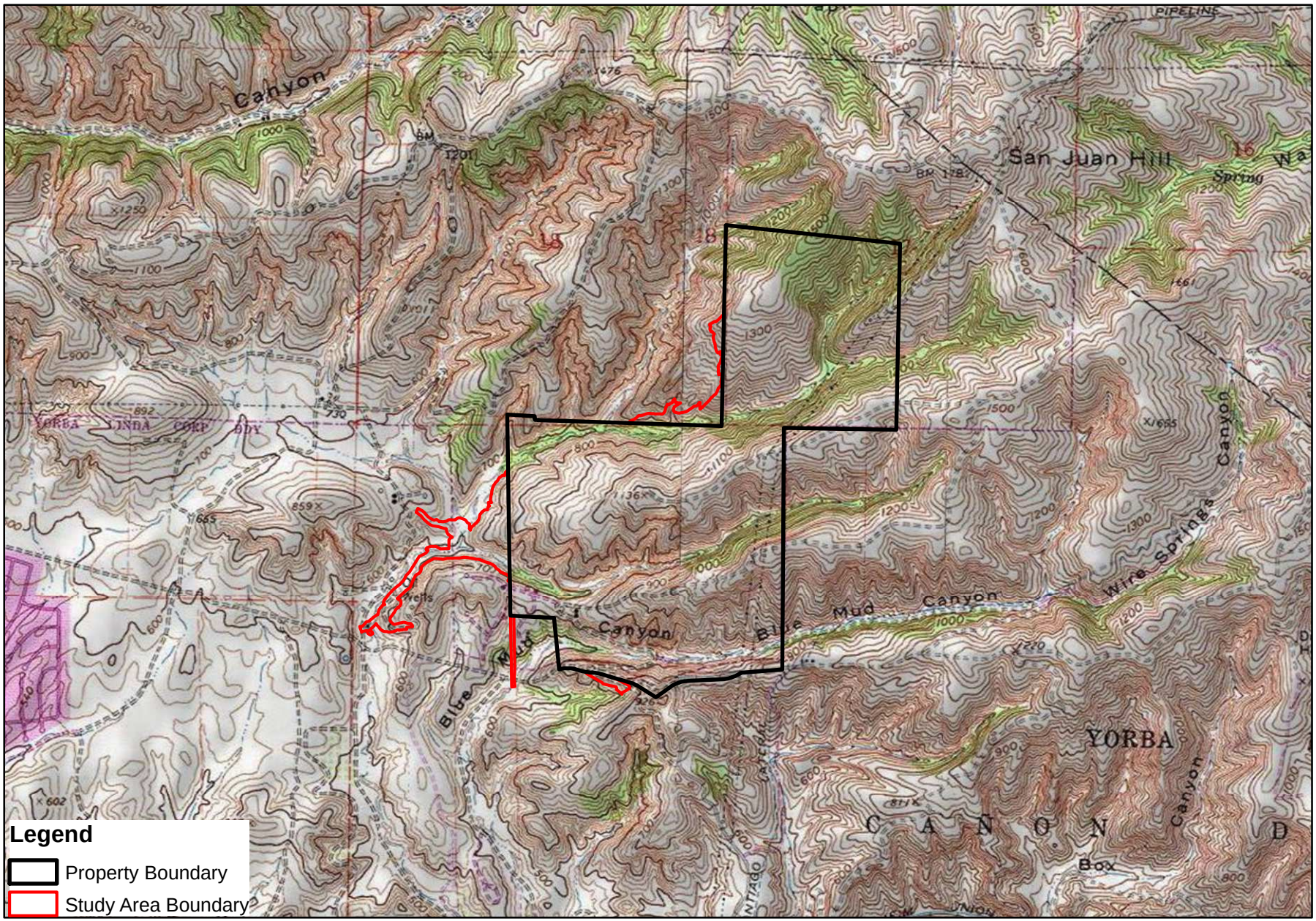
**ESPERANZA HILLS SPECIFIC PLAN AREA**

Regional Map

GLENN LUKOS ASSOCIATES

Exhibit 1

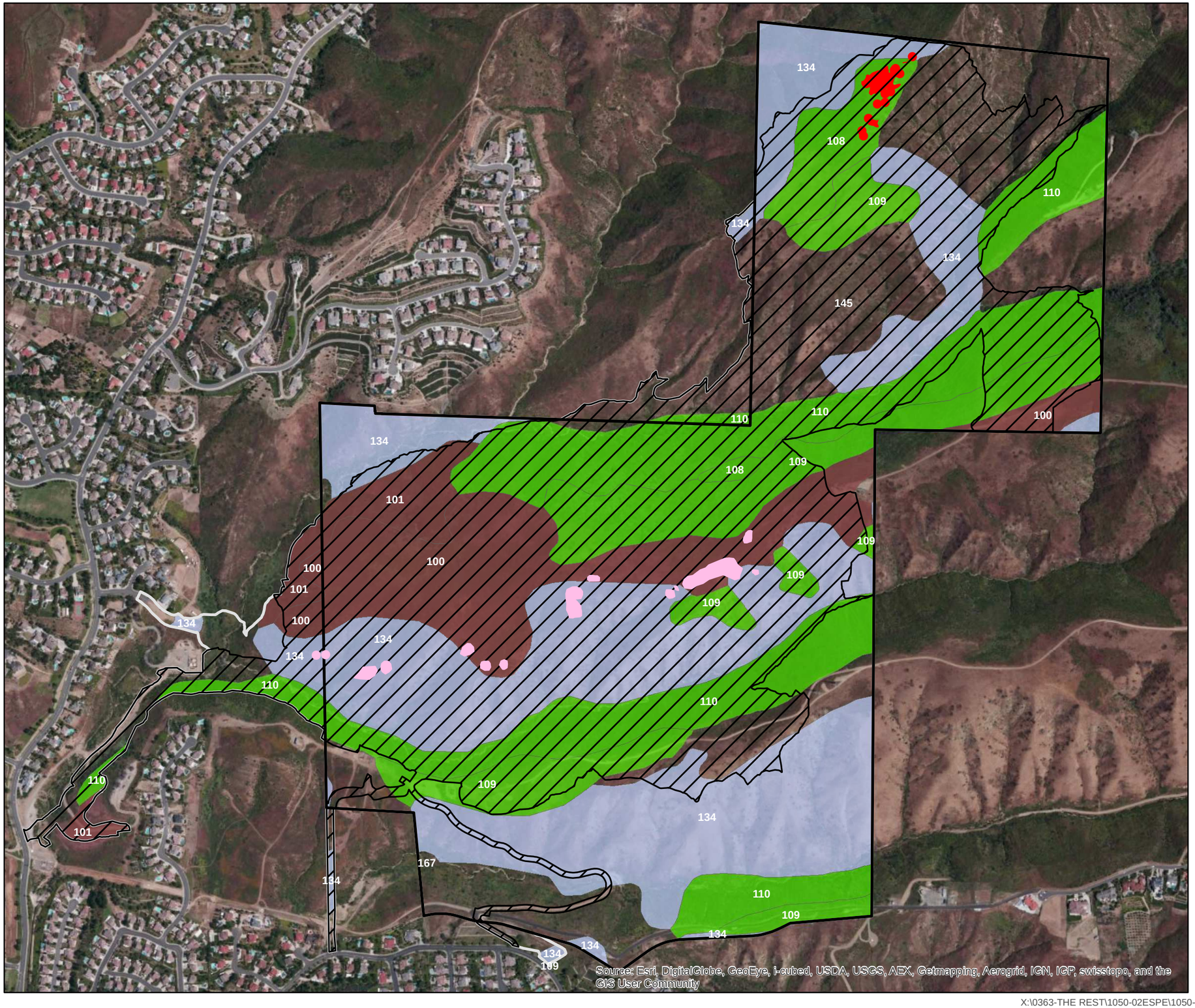



**ESPERANZA HILLS SPECIFIC PLAN AREA**

Vicinity Map

GLENN LUKOS ASSOCIATES

Exhibit 2




## Legend

- Property Boundary
- Study Area Boundary
- Alternative 3 Project Footprint
- Intermediate Mariposa Lily Population
- Braunton's Milkvetch Population
- 100 & 101 ALO CLAY
- 108, 109, & 110 - ANAHEIM CLAY LOAM
- 134 - CALLEGUAS CLAY LOAM, 50 TO 75 PERCENT SLOPES, ERODED

N

0 350 700 1,400

Feet

1 inch = 700 feet

Aerial Photo: ESRI Basemaps Bing Hybrid
Reference Elevation Datum: State Plane 6 NAD 83
Map Prepared by: K. Kartunen, GLA
Date Prepared: March 4, 2014

# ESPERANZA HILLS SPECIFIC PLAN AREA

Soils Types for Rare Plants Populations

GLENN LUKOS ASSOCIATES

Exhibit 3

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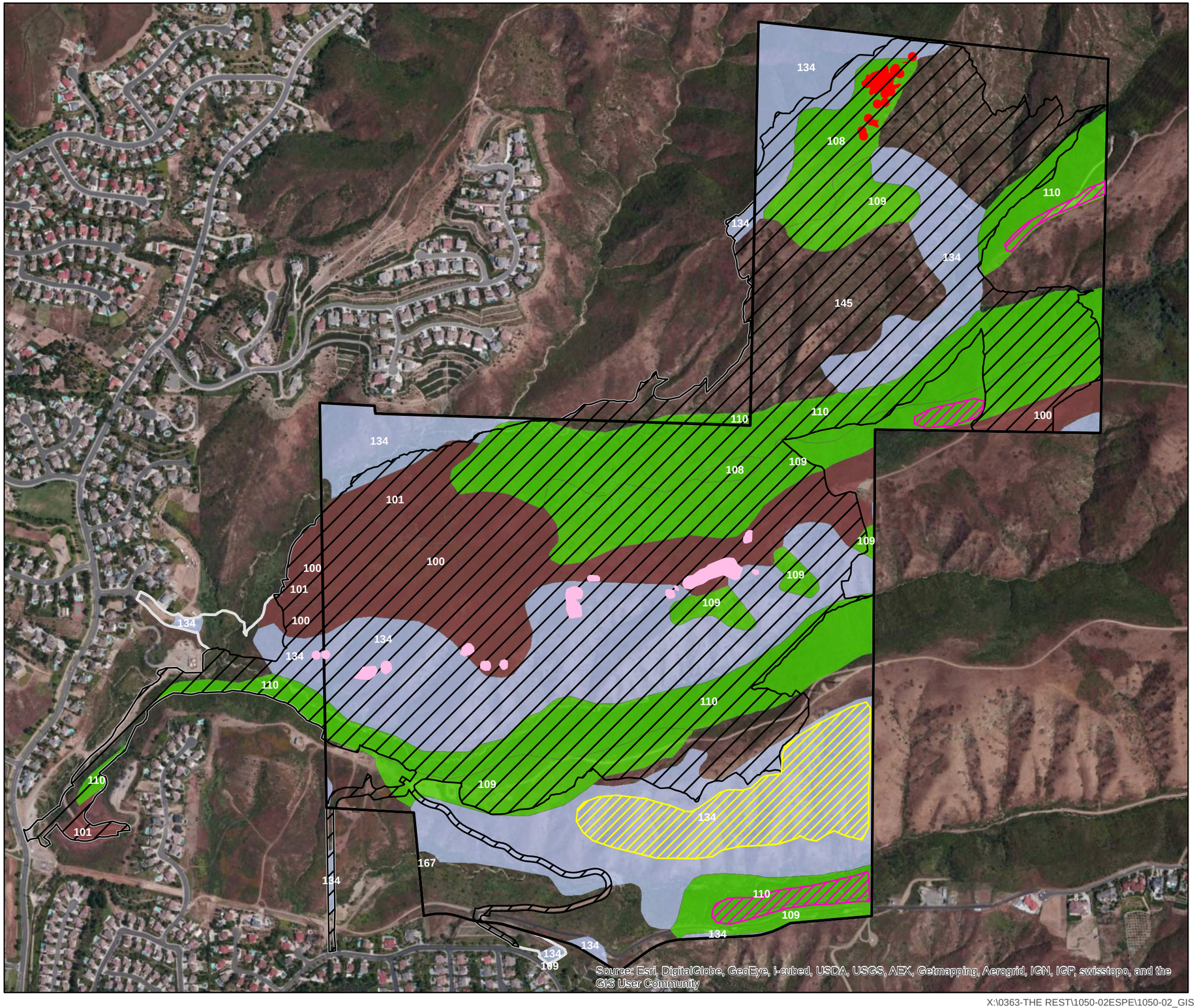


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- Intermediate Mariposa Lily Population
- Braunton's Milkvetch Population
- 100 & 101 ALO CLAY
- 108, 109, & 110 - ANAHEIM CLAY LOAM
- 134 - CALLEGUAS CLAY LOAM, 50 TO 75 PERCENT SLOPES, ERODED
- Candidate Intermediate Lily Restoration Areas
- Candidate Milkvetch Restoration Areas

N

0 350 700 1,400

Feet

1 inch = 700 feet

Aerial Photo: ESRI Basemaps Bing Hybrid
Reference Elevation Datum: State Plane 6 NAD 83
Map Prepared by: K. Kartunen, GLA
Date Prepared: March 4, 2014

# ESPERANZA HILLS SPECIFIC PLAN AREA

Proposed Rare Plant Mitigation

GLENN LUKOS ASSOCIATES

Exhibit 4

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# MITIGATION AND MONITORING PLAN
# FOR IMPACTS TO AREAS WITHIN THE JURISDICTION

**OF**

**THE UNITED STATES ARMY CORPS OF ENGINEERS**
**PURSUANT TO SECTION 404 OF THE CLEAN WATER ACT**

**AND**

**THE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE**
**PURSUANT TO SECTION 1602 OF THE FISH AND GAME CODE**

**AND**

**IMPACTS TO HABITAT OCCUPIED BY THE STATE- AND FEDERALLY-LISTED ENDANGERED LEAST BELL'S VIREO (*VIREO BELLII PUSILLIS*)**

## FOR

## ESPERANZA HILLS SPECIFIC PLAN AREA

**April 2014**

**Prepared for:**

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**APPENDICES**

# ESPERANZA HILLS SPECIFIC PLAN AREA PROJECT
# HABITAT MITIGATION AND MONITORING PLAN[1]

## OVERVIEW OF HABITAT MITIGATION AND MONITORING PLAN

The following plan sets forth a comprehensive approach for mitigating impacts specific impacts associated with the Esperanza Hills Project. Part 1 describes measures to mitigate impacts to drainages subject to the jurisdiction of the U.S. Army Corps of Engineers (Corps) pursuant to Section 404 of the Clean Water Act, Regional Water Quality Control Board pursuant to Section 401 of the Clean Water Act and the California Department of Fish and Wildlife (CDFW) pursuant to Section 1602 of the California Fish and Game Code. Part 2 describes measures to mitigate impacts to non-jurisdictional habitats, specifically, blue elderberry woodland and California walnut woodland. A significant component of the mitigation will be performed in Blue Mud Canyon, along the southern boundary of the project, which will subject to broader restoration efforts that will be implemented for fire protection, which will include removal of a substantial amount of non-native weedy material in concert with the installation of native plant material that will reduce fire danger and increase public safety while ensuring that ecological functions are enhanced over the existing condition. Part 2 also sets forth a program that will ensure integration of fire protection/public safety with long-term maintenance of ecological functions.

## PART 1: MITIGATION FOR JURISDICTIONAL RESOURCES

## I. DESCRIPTION OF THE PROJECT/IMPACT SITE

### A. Responsible Parties

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[1] Part 1 of this mitigation program was prepared in accordance with the following document: Army Corps of Engineers, Los Angeles District: *Special Public Notice: Final Mitigation Guidelines and Monitoring Requirements.* Public Notice 970031200-RRS, April 19, 2004.

## B. Location of Project and Brief Summary of Overall Project

The Project Site comprises approximately 469 acres adjacent to the city of Yorba Linda within unincorporated Orange County, California, while the Study Area, which includes the Project Site and the location of proposed off-site impacts, comprises 504 acres [Exhibit 1 – Regional Map]. The Project Site is located within Section 17, 18 of Township 3S, Range 8W, of the Yorba Linda (dated 1964 and photorevised in 1981) and Prado Dam (dated 1967 and photorevised in 1981) USGS 7.5" Quadrangle Maps. The Project Site also includes un-sectioned portions of Township 3S, Range 8W [Exhibit 2 – Vicinity Map]. Elevation ranges from approximately 550 feet at the southwest boundary to 1,550 feet at the north boundary. The Study Area is bordered by Blue Mud Canyon and Green Crest Drive to the south, Chino Hills State Park to the north and east, and residential areas adjacent to San Antonio Road to the west. The property immediately north east, and west of the study area is currently open space, while property bordering the southern boundary is residential development.

Esperanza Hills is located within unincorporated Orange County (County) north of the SR-91 Freeway, southwest of Chino Hills State Park, and adjacent to existing residential development in the City of Yorba Linda (City). The Project is east of San Antonio Drive and north of Stonehaven Drive in the City. The project footprint is bordered by Chino Hills State Park on the north and east. To the South and northwest lie existing residential communities, including Dominguez Ranch, Green Hills, Casino Ridge, Travis Ranch, and Yorba Linda Hills. The Cielo Vista project, a proposed residential subdivision in the County, lies to the west and southwest. The Esperanza Hills property is largely undeveloped, with the exception of oil well operation in the western portion of the site.

The Esperanza Hills project proposed to construct 340 single-family residential units on 468.9 acres in the unincorporated portion of the County adjacent to the City. As currently proposed, project components will include approximately 13.9 acres of active and passive parks, 7 miles of trails and 230 acres of open space. The trails will include pedestrian, bicycle, and equestrian trails with linkages to permit non-vehicular access to the Chino Hills State Park and surrounding open space areas. Fuel Modification areas have been identified and emergency access/evacuation plans have been defined in cooperation with the Orange County Fire Authority, and two underground water reservoirs are planned to assist in fire fighting. Two options for access to the community will be analyzed: one with a primary connection going south to Stonehaven Drive and a second with a primary connection going west from the community to Aspen Way, connecting to San Antonio Road. A homeowners' association will manage streets, landscaping, parks, and other amenities.

Habitats on-site include non-native grasslands, coastal sage scrub, chaparral, limited areas of disturbed walnut and oak woodlands, limited amounts of riparian habitat, and disturbed areas. The project site was burned in the "Freeway Complex Fire" in the fall of 2008, and prior had been historically used for animal grazing. Currently the site is used as open space and for energy transmission associated with the Southern California Edison Company. A total of four blue-line drainages occur on site, extending into offsite portions of the Study Area.

## C. Jurisdictional Areas to be filled by Habitat Type and Location

Corps jurisdiction at the Esperanza Hills Project Study Area totals approximately 2.08 acres, of which 0.19 acre consists of wetlands. The wetland areas are associated with Drainage D, a small artificial detention basin at the mouth of Blue Mud Canyon (Drainage F) and Drainage G [Corps Jurisdictional Delineation Map - Exhibit 3a]. Three different Project alternatives are currently proposed. The most impactful of the three alternatives, as currently proposed, would impact approximately 1.17 acres of waters of the U.S., of which 0.11 acre consists of wetlands. Impacts would occur within Drainages A, D, E, and F, all of which are non-relatively permanent (i.e. ephemeral) waters (Non-RPWs).

California Department of Fish and Wildlife (CDFW) jurisdiction at the Esperanza Hills Project Site totals approximately 4.15 acres, of which approximately 2.57 acres consist of vegetated riparian habitat [CDFW Jurisdictional Delineation Map - Exhibit 3b]. The most impactful of the three alternatives, as currently proposed, would impact approximately 2.57 acres of CDFW jurisdiction, of which 1.77 acre is vegetated riparian habitat consisting of disturbed coast live oak riparian forest, mulefat scrub, California walnut/mulefat scrub, blue elderberry woodland, and southern willow scrub. A summary of associated impacts to CDFW jurisdiction under each alternative is provided in Table 1 below.

**TABLE 1**

**Impacts to CDFW Jurisdiction**

| Vegetation Types | Option 1 Impacts | Option 2 Impacts | Option 2A Impacts |
|---|---|---|---|
| Black Willow Riparian Forest | 0.0 acre | 0.19 acre | 0.08 acre |
| Blue Elderberry Woodland | 0.45 acre | 0.45 acre | 0.45 acre |
| Mulefat Scrub | 0.09 acre | 0.09 acre | 0.32 acre |
| Coast Live Oak Riparian Forest | 0.54 acre | 0.54 acre | 0.54 acre |
| Detention Basin | 0.02 acre | 0.02 acre | 0.02 acre |
| Southern Willow Scrub | 0.0 acre | 0.0 acre | 0.36 acre |
| Unvegetated Channel | 0.80 acre | 0.80 acre | 0.80 acre |
| **Total:** | **1.90 acres** | **2.09 acre** | **2.57 acre** |

## D. Type(s), Functions and Values of the Jurisdictional Areas to be Directly and Indirectly Impacted

Functions and values to be affected by the project are divided into three categories: hydrologic, biogeochemical, and habitat. Each is addressed below.

### 1. Hydrologic Functions

The drainages to be affected occur at the bottom of deep canyons and generally range from one to four feet wide. As such, there is little potential for surface water storage and limited potential for recharge of groundwater. The narrow drainages support only limited areas of riparian vegetation,

which is typically outside of the active channel and therefore exhibit limited potential for energy dissipation. In short, the drainages exhibit limited hydrological functions, typical of ephemeral drainages within the region.

### 2. Biogeochemical Functions

The largely unvegetated ephemeral drainages exhibit biogeochemical functions typical of ephemeral drainages in the region including export of particulate carbon and other fine organic matter; however, all of the drainages ultimately discharge to offsite storm drains, which in turn empty into the Santa Ana River, which exhibits very limited habitat value as it is managed for purposes of groundwater recharge. Similarly, the drainages exhibit limited potential for water quality improvement (e.g., retention of particulates and/or removal of elements and compounds) for two reasons: first, due to the limited amount of riparian vegetation, steep gradients, and narrow width and second, because the site is currently in a natural state (albeit much of the vegetation consists of non-native weedy species).

### 3. Habitat Functions

As noted, the drainages on the site support limited areas of riparian habitat consisting mostly of small patches of non-wetland mulefat (*Baccharis salicifolia*) intermixed with other upland vegetation including scattered blue elderberry (*Sambucus nigra* ssp. *caerulea*). Drainage D includes limited areas of coast live oak riparian forest, which burned during the Freeway Complex Fire in late 2008, killing approximately half of the oaks with about half of the oaks exhibiting some re-growth, though in poor condition. Drainage F (Blue Mud Canyon) supports scattered patched of willow and mulefat including at the downstream limit, which is offsite but which would be affected by utilities and an emergency access route. As discussed below, an off-site area, at the mouth of Blue Mud Canyon has recently supported least Bell's vireo, a state- and federally listed songbird.

## E. <u>Occupied Least Bell's Vireo Habitat to be Impacted</u>

Three Project alternatives are currently proposed. The most impactful of the three, as currently proposed, would permanently impact approximately 0.05 acre of mulefat scrub vegetation, 0.09 acre of black willow riparian forest, and 0.36 acre of southern willow scrub occupied by the state- and federally listed endangered least Bell's vireo (LBV) [Exhibit 5]. The LBV is a state- and federally listed endangered species, and as such both CDFW and US Fish and Wildlife Service (USFWS) regulate impacts to occupied LBV habitat.

## II. OBJECTIVES OF THE COMPENSATORY MITIGATION

The objectives of the proposed habitat mitigation and monitoring program (HMMP) is to provide for (1) full mitigation of permanent impacts, which under the most impactful project alternative consist of impacts to 1.17 acres of waters of the U.S., of which 0.11 acre consists of wetlands, and 2.57 acres of CDFW jurisdiction, of which 1.77 acre is vegetated riparian habitat; and (2) mitigation for impacts to 0.05 acre of mulefat scrub, 0.09 acre of black willow riparian forest, and 0.36 acre of southern willow scrub occupied by the state- and federally listed endangered LBV.

Table 2 provides a summary of mitigation required for each CDFW jurisdictional resource under each of the alternatives.

**TABLE 2**

**Mitigation for CDFW Jurisdictional Resources**

| Resource to be Mitigated | Option 1 | Option 2 | Option 2A |
|---|---|---|---|
| | Mitigation Required | | |
| CDFW Riparian (at 2:1) | 2.20 acres | 2.58 acres | 3.54 acres |
| CDFW Unvegetated Channel (at 1:1) | 0.80 acre | 0.80 acre | 0.80 acre |
| **Total CDFW** | **3.0 acres** | **3.38 acres** | **4.34 acres** |

The goals will be achieved through permittee-responsible mitigation that incorporates components of a watershed approach that includes: (1) onsite replacement or enhancement of the functions provided by the existing ephemeral drainages and associated wetland and riparian habitats to be impacted, (2) in some instances, establishment of additional hydrologic, biogeochemical and wildlife functions currently not associated with drainages to be impacted; (3) fostering an increase in the habitat values beyond those currently provided by the existing streambeds, wetlands and/or riparian habitats; and (4) providing optimal breeding habitat for least Bell's vireo (LBV). In determining the best way to ensure no net-loss of aquatic resource functions in the region, a number of factors were considered, including:

- The functioning and impairment of existing aquatic resources onsite;
- The best location for rehabilitation of aquatic resources;
- The relative acreage for each habitat type of impacted aquatic resource; and
- The opportunity to compensate for potential cumulative impacts.

In order to achieve the goal of no-net-loss of aquatic resource functions, this HMMP proposes rehabilitation, using components of the watershed approach set forth at 40 CFR Part 230: *Compensatory Mitigation for Losses of Aquatic Resources; Final Rule*. ("Mitigation Rule")[2]

## A. Types and Areas of Habitat to be Rehabilitated

In order to offset impacts to Corps and CDFW jurisdiction and ensure the goals of no-net loss of riparian habitat and associated functions, including coast live oak riparian forest, mulefat scrub, California walnut/mulefat scrub, elderberry woodland and southern willow scrub, the Project will include rehabilitation of southern willow scrub and southern coast live oak-California walnut riparian forest within Blue Mud Canyon (Drainage F). Under the most impactful alternative, a minimum of 4.34 acres would be rehabilitated, for a ratio of 2:1 for CDFW impacts and 3.7:1 for Corps impacts. Additionally, the one acre rehabilitated southern willow scrub habitat will mitigate for impacts to 0.05-acre of mulefat scrub, 0.09 acre of black willow riparian forest, and 0.36 acre of southern willow scrub habitat occupied by LBV at a ratio of 2:1. The candidate mitigation areas proposed for mitigation of CDFW and Corps jurisdictional impacts and impacts to habitat occupied by LBV are summarized in Table 3 below and depicted on Exhibit 6. If a less impactful alternative is ultimately selected, mitigation will be installed at ratios noted above for Corps and CDFW.

**TABLE 3**
**SUMMARY OF CANDIDATE MITIGATION AREAS**

| Mitigation Site | Mitigation Type | Habitat Type | Area (Acres) |
|---|---|---|---|
| Blue Mud Canyon (Drainage F) | Rehabilitation | Southern Willow Scrub | 1.0 |
| Blue Mud Canyon (Drainage F) | Rehabilitation | Coast Live Oak-Walnut Riparian Forest | 3.34 |
| | | **TOTAL** | 4.34** |

**Although up to 5.30 acres of candidate mitigation area is available, actual mitigation acreage will be installed at a 3.7:1 ration for Corps impacts, 2:1 ratio for CDFW impacts and 2:1 for LBV impacts.

The rehabilitation mitigation site within Blue Mud Canyon would offset impacts to Corps jurisdiction, as it is a water of the United States and exhibits an OHWM. Following implementation of the mitigation project, it is expected that areas will support vegetated riparian habitat with portions exhibiting wetland characteristics.

For the above-referenced mitigation areas, the 5.30-acre candidate area of southern willow scrub and coast live oak-California walnut riparian forest in Blue Mud Canyon are appropriately categorized as rehabilitation under the Mitigation Rule, as there will be a gain in aquatic resource

[2] Federal Register Vol. 73 No. 70. April 10, 2008. Department of Defense: Department of the Army, Corps of Engineers, 33 CFR Parts 325 and 332 and Environmental Protection Agency, 40 CFR Part 230 Compensatory Mitigation for Losses of Aquatic Resources; Final Rule.

function but no gain in aquatic resource area. The portion of Blue Mud Canyon to be established as the mitigation site currently exhibits an OHWM that ranges from four to six feet wide, and is generally vegetated with patches of mulefat scrub, remnant California walnut woodland (many were killed by the 2008 Freeway Complex Fire), California walnut woodland/mulefat scrub, and limited amounts of blue elderberry woodland (also largely killed and/or damaged by the fire). However, following the 2008 fire, much of the fire-damaged native vegetation on the slopes on either side of the Drainage F was largely displaced by non-native species including poison hemlock (*Conium maculatum*), sweet fennel (*Foeniculum vulgare*), tree tobacco (*Nicotiana glauca*), and castor bean (*Ricinus communis*). In general Drainage F is characterized by a dominance of bush mallow (*Malacothamnus fasciculatus*, UPL) and poison hemlock (*Conium maculatum*, FAC), limited areas of Arroyo willow (*Salix lasiolepis*, FACW), mulefat (*Baccharis salicifolia*, FAC), coyote bush (*Baccharis pilularis*, UPL), laurel sumac (*Malosma laurina* UPL), giant wild rye (*Elymus condensatus*, FACU), and non-native sweet fennel (*Foeniculum vulgare*, UPL).

## B. Specific Functions and Values of Habitat Types to be Rehabilitated

Upon successful implementation, the mitigation site will provide replacement of functions and values for impacts to ephemeral drainages, vegetated riparian habitat, most of which is degraded and has a substantial component of non-native species, and a very small area of jurisdictional wetlands (0.11 acre). The proposed rehabilitation of southern willow scrub and coast live oak-walnut riparian forest within the 5.30-acre candidate mitigation area provides for no-net-loss of both function and area of wetland and riparian resources.

Additionally, the proposed rehabilitation of southern willow scrub will provide optimal breeding habitat for LBV and offsets the loss of occupied riparian habitat at a ratio of at least 2:1.

## C. Time Lapse Between Jurisdictional Impacts and Expected Compensatory Mitigation Success

Project grading activities will commence upon receipt of permits with project impacts expected to occur immediately thereafter. Mitigation site grading, planting, and irrigation shall begin prior to or concurrent with the planned date of initiating authorized fill activities. Eradication of non-native plant species encountered will be concurrent with commencement of grading.

Within one year of the completion of mitigation installation, it is expected that immature riparian vegetative structure will exist such that insects and birds will utilize the mitigation site for foraging, and within approximately three years, the riparian vegetative structure will be sufficiently mature to support LBV.

## D. Estimated Total Cost

Table 4 below indicates the estimated cost for implementation, maintenance, and monitoring of the mitigation area for five years.

**TABLE 4**
**ESTIMATED MITIGATION COST FOR 4.34 ACRES**

| Task | Cost |
|---|---|
| Grading (costs included with general site grading) | N/A |
| Mobilization | $6,400 |
| Site Preparation | $11,200 |
| Irrigation Installation | $40,000 |
| Installation (includes plants and seeds) | $56,000 |
| Project Maintenance | $120,000 |
| Project Monitoring and Reporting | $80,000 |
| **Total** | **$313,600** |

# III. DESCRIPTION OF THE PROPOSED COMPENSATORY MITIGATION SITE

## A. Location and Size of the Compensatory Mitigation Site

The 5.30-acre candidate mitigation site will be located in the portion of Blue Mud Canyon (Drainage F) not subject to project impacts as depicted on Exhibit 6. Under the most impactful alternative, the mitigation area will include rehabilitation of 1.00 acre of southern willow scrub and 3.34 acres of coast live oak-walnut riparian forest.

Selection of this area is consistent with the site selection criteria set forth on page 19674 of the Mitigation Rule. Specifically, characteristics of Blue Mud Canyon include (1) hydrological and other physical characteristics conducive to rehabilitation; (2) sufficient hydrologic sources to support the rehabilitation project; (3) location where it would be compatible with adjacent land uses, as it is located within a portion of the Specific Plan Area not planned for development; and (4) it will provide habitat for the state- and federally-listed endangered least Bell's vireo. The rehabilitation area is described below.

## B. Ownership Status

The present owners of the mitigation areas are:

Applicant/Permittee: Yorba Linda Estates, LLC
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Scottsdale, Arizona 85251
Contact: Douglas G. Wymore

## C. Existing Functions and Values of the Rehabilitation Mitigation Site

The portion of Blue Mud Canyon to be established as the mitigation site currently exhibits an OHWM, and supports vegetation that established following the 2008 Freeway Complex Fire that includes dense areas of bush mallow mixed with locally dense stands of poison hemlock, scattered castor bean and tree tobacco interspersed with occasional patches of mulefat and willow scrub, remnant California walnut woodland (most were killed or damaged by the 2008 Freeway Complex Fire), and limited amounts of blue elderberry woodland (also largely killed or damaged by the fire). In general Drainage F besides the areas dominated by bush mallow (*Malacothamnus fasciculatus*, UPL) poison hemlock (*Conium maculatum*, FAC), and limited areas of arroyo willow (*Salix lasiolepis*, FACW) and mulefat (*Baccharis salicifolia*, FAC), the banks of the drainage support scattered individuals of coyote bush (*Baccharis pilularis*, UPL), laurel sumac (*Malosma laurina* UPL), and giant wild rye (*Elymus condensatus*, FACU).

Subsequent to the 2008 Freeway Complex Fire, the habitat functions of Drainage F were greatly reduced, as much of the riparian habitat burned. Following the 2008 fire, much of the fire-damaged native vegetation on the terraces/slopes on either side of the Drainage F was displaced by non-native species including poison hemlock (*Conium maculatum*), sweet fennel (*Foeniculum vulgare*), tree tobacco (*Nicotiana glauca*), and castor bean (*Ricinus communis*). The areas of willow and mulefat are slowly recovering, but during surveys in early 2013, only exhibited roughly half the cover of their pre-fire condition.

## D. Jurisdictional Delineation of Mitigation Areas

As noted above, Blue Mud Canyon is subject to Corps and CDFW jurisdiction and has an OHWM that varies from 6 to 8 feet within the area to be rehabilitated and supports mulefat scrub, remnant California walnut woodland (most were killed or damaged by the 2008 Freeway Complex Fire), California walnut woodland/mulefat scrub, and limited amounts of blue elderberry woodland (also largely killed or damaged by the fire). The slopes adjacent to the drainage are outside of Corps jurisdiction, but are appropriate for inclusion of the mitigation site as they currently support areas of invasive non-native species and conversion to native riparian habitat would improve the aquatic functions and values of the mitigation site and watershed.

## E. Present and Proposed Uses of Mitigation Site

Blue Mud Canyon is an existing drainage that supports areas of mulefat scrub, remnant California walnut woodland (most were killed by the 2008 Freeway Complex Fire), California walnut woodland/mulefat scrub, and limited amounts of blue elderberry woodland (also largely killed by the fire) and is currently undeveloped. Upon completion of the grading, limited portions of the drainage at the far western edge of the project site will be filled for road construction and utility installation. The remainder of the on-site portion of the drainage will be planted with riparian vegetation.

# IV. IMPLEMENTATION PLAN FOR THE COMPENSATORY MITIGATION SITES

## A. Rationale for Expecting Implementation Success

The proposed mitigation will be installed prior to or concurrent with impacts to Corps and CDFW jurisdiction. Specific rationale for expecting implementation of the various components of the mitigation program is provided below.

The proposed mitigation area within Blue Mud Canyon is a good candidate for habitat rehabilitation for several reasons and will result in an increase in aquatic functional capacity within the Santa Ana River watershed to which the proposed impact site contributes. First, hydrology to support the wetland/riparian areas within the sites is assured from existing sources. Second, the proposed plant palettes consist of species that occur onsite and are known to perform well in habitat restoration programs. After minimal localized grading, which will serve to enhance hydrological conditions in a few areas, the mitigation areas will be ideal for species such as willows, coast live oak, California walnut, blue elderberry, and mulefat as well as suite of diverse understory species. The restored habitat areas will be located at the optimal elevations and distance from the main channel with the driest areas supporting coast live oak, blue elderberry, and California walnut, and the wettest areas supporting arroyo willow, black willow, and mulefat with an appropriate understory. The tenacious quality of native riparian plant species, which allows their continued survival in areas of natural disturbance, also helps to ensure their establishment as part of the proposed mitigation. Natural recruitment and reproduction is expected within the site.

With regard to least Bell's vireo, it is expected that the rehabilitated habitat will exhibit sufficient canopy structure to support breeding LBV within approximately three years of mitigation installation. As LBV were observed in mulefat scrub in Drainage F in 2012, and documented to have nested in Drainage G on the west side of the Project Study Area in 2012, it is expected that LBV will immediately begin to utilize the mitigation site for foraging and potentially for breeding.

## B. Responsible Parties

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## C. Implementation Schedule

The mitigation installation contractor (herein "Contractor"), shall be responsible for site preparation, irrigation installation and mitigation plantings, which shall begin during construction activities. Compensatory mitigation designated to occur within the mitigation site shall be installed no later than one construction season after commencement of fill activities within jurisdictional waters.

Table 5 below indicates timing of intended impacts to Corps and CDFW jurisdiction and LBV habitat, site grading, eradication of weedy exotic plant species, site preparation and planting. The Contractor will retain a biological monitor with appropriate experience with site flora & fauna ("Project Biologist") to supervise and provide biological monitoring during project construction, site preparation, installation of plant materials and maintenance.

**TABLE 5**
**IMPLEMENTATION SCHEDULE**

| | |
|---|---|
| Impacts to Corps and CDFW Jurisdiction and LBV Habitat | Year 1 |
| Mitigation Site Grading | Year 1 |
| Site Preparation | Year 1 |
| Irrigation Installation | Year 2 |
| Container Stock Installation | Year 2 |
| Hydroseeding | Year 2 |

## D. Site Preparation

Site preparation shall consist of minor localized grading, clearing and controlling exotic plants, trenching and installation of underground irrigation components, removing trash and debris, preparing planting holes and doing any other work necessary to make ready the area for planting. No restoration or mitigation shall occur in fuel modification zones, future project areas or areas of maintenance.

**Mitigation Site Grading Plan**

As the topography of the mitigation site is generally satisfactory under existing conditions for establishing the mitigation site, only minimal localized grading will be necessary. For those areas that require grading, a grading plan for the Blue Mud Canyon mitigation site will be developed making use of existing hydrological data, however, micro elevations and micro grading will be determined by the Project Biologist in conjunction with the project hydrologist with adjustments occurring based on site conditions at that time. The work area shall be flagged to identify its limits within the project footprint to avoid unnecessary impact to areas outside of the mitigation site. Vegetation shall not be removed or intentionally damaged beyond these limits. Vegetation in this area consists of mulefat scrub, remnant California walnut woodland (most were killed by the 2008 Freeway Complex Fire), California walnut woodland/mulefat scrub, and limited amounts of blue elderberry woodland (also largely killed by the fire), and if living vegetation is damaged, shall be included into the mitigation. No equipment shall be operated within the drip line of preserved oaks. Protective fencing shall be placed around the drip line of all preserved oaks to prevent compaction of the root zone.

**Exotic Vegetation Control**

The predominance of non-native, invasive weed species throughout California has presented a challenge to most native revegetation projects. Weedy species are opportunistic, rapidly colonizing disturbed sites such as revegetation sites. This can lead to the displacement of native species if the weedy species are not properly treated. Several of these invasive species are capable of out-competing most native understory and herbaceous plants and some can out-compete and even displace existing native trees and shrubs. Therefore, non-native vegetation including but not limited to poison hemlock (*Conium maculatum*), sweet fennel (*Foeniculum vulgare*), tree tobacco (*Nicotiana glauca*), castor bean (*Ricinus communis*), will be removed from the mitigation site and disposed of in a manner and at a location which prevents its reestablishment. Removal shall be done at least twice annually during the spring/summer season, as needed, through the term of the mitigation monitoring period.

Although it has not been detected during previous survey efforts, if giant reed (*Arundo donax*) is present, it shall be cut to a height of 6 inches or less, and the stumps painted with an herbicide approved for aquatic use within 5 minutes of cutting. Herbicides shall be applied at least three times during the period from May 1 to October 1 to eradicate these plants. Where proposed methods for removing giant reed deviate from this procedure, the Contractor shall present the alternate methods, in writing, to CDFW for review and approval, prior to construction.

One of the largest obstacles to the successful revegetation of a site is the exotic seed bank residing in the soil. This seed bank can persist for several years, or even decades, and poses one of the major threats to restoration programs. Undesirable exotic plants will be eradicated either during initial site grading or prior to site preparation. If grading precedes planting by more than a few months, it will be necessary to eradicate undesirable exotic plants that have become established prior to planting and seeding of the mitigation sites. If deemed necessary, a "grow-and-kill" cycle will be established during that period. "Grow and kill" is a cycle of applying water, germinating the non-native, invasive species and spraying with the appropriate chemical. This allows a large portion of the seed bank currently present in the soil to be removed. Eliminating or substantially reducing the competition from non-native exotics early in the life cycle of native plants helps to ensure more rapid growth and cover by the native species.

Initially and whenever possible, invasive species shall be removed by hand or by hand-operated power tools rather than by chemical means. Where control of non-native vegetation is required within the bed, bank, or channel of a stream using herbicides and there is a possibility that the herbicides could come into contact with water, the Contractor shall employ only those herbicides, such as Rodeo/Aquamaster (Glyphosate), which are approved for aquatic use. If surfactants are required, they shall be restricted to non-ionic chemicals, such as Agri-Dex, which are approved for aquatic use.

The type, quantity, and method of herbicide application will be determined by a California licensed Pest Control Advisor (PCA) who will inspect the site, write project recommendations and submit same to the Project Biologist for approval. Pesticide recommendations shall include, but are not limited to, the pesticides to be used, rates of application, methods of application, and areas to which pesticides are to be applied. A licensed Pest Control Operator (PCO) may work under the supervision of the PCA who will employ best management practices regarding the timing, quantity, and type of herbicide for each species. The PCA will determine both immediate and follow-up herbicide application for each species.

No herbicides shall be used where threatened or endangered plant species occur, when wind velocities are above 5 miles per hour, or on native vegetation unless specifically authorized, in writing, by CDFW.

A small amount of selective trimming of native species (e.g. willow, oak and sycamore) may occur to prevent overspray of herbicide from reaching these branches, but only as provided within the conditions of the Streambed Alteration Agreement issued by CDFW and this Mitigation Plan. Native vegetation may only be trimmed; individual plants shall not be removed. Material in excess of three (3) inches diameter breast height (DBH) shall require specific notice to and consultation with CDFW.

Weed control will be maintained throughout the monitoring period. Weeds will be controlled before their setting of seed. Ongoing weed control will be accomplished manually by the use of a hoe or other tool to uproot the entire plant, a mower or weed whip to cut plants, or by herbicide application as prescribed in this Mitigation Plan. Weed species identified as invasive, particularly tenacious, or those with wind-borne seed will be subject to the earliest control

efforts. The Project Biologist will direct the contractor regarding the selection of target weed species, their location and the timing of weed control operations to ensure that native plants are avoided to the extent possible.

**Contractor Education**
Prior to the commencement of grading or any construction work, the Contractor will review all aspects of the Mitigation Plan that concern the contractors including permit requirements, site protection, maintenance inspections, landscape procedures and monitoring.

The Applicant/Permittee shall make the Contractor and all other contractors, subcontractors and the project supervisors aware of the Corps Authorization and the CDFW Streambed Alteration Agreement. Copies of the permits shall be kept onsite at all times during periods of active work and must be presented to any agency personnel upon demand.

**Nesting Birds**
The Contractor may remove vegetation within drainages from March 1 to July 31 if a qualified biologist conducts a survey for nesting birds within three days prior to the vegetation removal and ensures no nesting birds shall be impacted by the project. These surveys shall include the areas within 200 feet of the edge of the proposed impacts. If active nests are found, a minimum 50-foot (200 feet for raptors) fence barrier shall be erected around the nest site. No habitat removal or any other work shall occur within the fenced nest zone if the nest continues active beyond July 31, until the young have fledged, are no longer being fed by the parents, have left the nest, and will no longer be impacted by the project. The Contractor shall submit the mapped survey results to CDFW for review and approval prior to vegetation removal to ensure full avoidance measures are in place. The Contractor will adhere to all applicable requirements of federal and state codes (e.g., Migratory Bird Treaty Act and CDFG Code 3503.5).

## E. Planting Plan

Two riparian associations will be rehabilitated within the proposed mitigation areas: willow-mulefat riparian forest and coast live oak-walnut riparian woodland. These plant communities were selected based on surveys conducted during various biological survey visits including vegetation mapping and jurisdictional delineation. Woody plant species were selected to create a mature tree canopy and provide wildlife forage, shelter and nesting places, including habitat for LBV. Planting shall consist of preparing planting holes, planting container stock, installing plant protection devices, applying mulch and hydroseeding. No planting shall be done in any area until the area concerned has been prepared in accordance with the plans and presents an appearance satisfactory to the Project Biologist.

All planting should be done after the first wetting rains between October 1 and February 1 to take advantage of the winter rainy season, dormancy of foliage, and rooting period to ensure optimum survival of plantings. Should the Contractor be required to plant during other times of the year, chances of survival are diminished. To compensate for decreased survival rates, the Operator shall be required to augment the specified planting density by 25-percent to account for the likelihood of increased mortality of plantings. Completion of all mitigation requirements shall be

concluded within two years of project implementation within jurisdictional areas. Planting, maintenance, monitoring and reporting activities shall be overseen by a specialist familiar with restoration of native plants. The Contractor shall place structures on properties so that fire clearance activities will not impact vegetation on stream courses, mitigation areas, or associated buffer areas.

**Plant Palettes**

The mitigation site will be vegetated with plant species native to the Yorba Linda and Chino Hills Area and surrounding areas. The proposed revegetation plant palettes for the revegetation habitat types are designated below in Tables 6 and 7. The plant palettes define species, spacing and total quantity of plants per acre required. CDFW recommends that the landscaping within the open spaces and common areas of the development utilize native plant species. The use of invasive non-native plants is strongly discouraged.

**Southern Willow Scrub Riparian Scrub**

This plan provides for the rehabilitation of 1.0 acre of southern willow scrub scrub based primarily on riparian forest composition in Drainage G. If a less impactful Project Alternative is selected, the mitigation will be reduced accordingly while maintaining a 2:1 ratio for CDFW impacts. The planting palette is presented in Table 6 below.

**TABLE 6**
**WILLOW-MULEFAT RIPARIAN SCRUB**
**(1.0 acre to be rehabilitated)**

| Botanic Name | Common Name | Stock Type | Plant Spacing | No. per Acre | Percent |
|---|---|---|---|---|---|
| **Canopy** | | | | | |
| *Salix goodingii* | Black willow | 1 gal | 20' o.c. | 75 | 19% |
| *Salix lasiolepis* | Arroyo willow | 1 gal | 15' o.c. | 100 | 25% |
| *Salix exigua* | Narrow-leaf willow | 1 gal | 10' o.c | 200 | 50% |
| *Sambucus nigra* ssp. *caerulea* | Blue elderberry | 1 gal | 30' o.c. | 25 | 6% |
| **Subtotal** | | | | **400** | **100%** |
| | | | | | |
| **Understory** | | | | | |
| *Isocoma menziesii* | Coast goldenbush | 1 gal | 8' o.c. | 100 | 12.5% |
| *Rosa californica* | California rose | 1 gal | 8' o.c. | 100 | 12.5% |
| *Baccharis pilularis* | Coyote bush | 1 gal | 8' o.c. | 100 | 12.5% |
| *Baccharis salicifolia* | Mulefat | 1 gal | 4' o.c. | 200 | 25% |
| *Artemesia douglasiana* | Mugwort | Liner | 8' o.c | 100 | 12.5% |
| *Rubus ursinus* | Blackberry | Liner | 8' o.c | 100 | 12.5% |
| **Subtotal** | | | | **700** | **100%** |
| **Total Container Stock** | | | | **1100** | |

**Coast Live Oak-California Walnut Riparian Forest**

This plan provides for the rehabilitation of 3.34 acres subject to CDFW jurisdiction of coast live oak-walnut riparian forest based primarily on the riparian woodland composition in Drainages F and D. The planting palette is presented in Tables 7 below.

**TABLE 7**
**COAST LIVE OAK-WALNUT RIPARIAN WOODLAND PLANT PALETTE**
**(3.34 acres riparian)**

| Botanic Name | Common Name | Stock Type | Plant Spacing | No. per Acre | Percent |
|---|---|---|---|---|---|
| **Canopy** | | | | | |
| *Quercus agrifolia* | Coast live oak | 1 gal | 40' o.c. | 10 | 10% |
| *Sambucus nigra* ssp. *caerulea* | Blue elderberry | 1 gal | 40' o.c. | 50 | 50% |
| *Juglans californica* | California walnut | 1 gal | 30' o.c. | 40 | 40% |
| **Subtotal** | | | | **100** | **100%** |
| **Understory** | | | | | |
| *Heteromeles arbutifolia* | Toyon | 1 gal | 30' o.c. | 50 | 6% |
| *Baccharis salicifolia* | Mulefat | 1 gal | 10'oc | 100 | 13% |
| *Malosma laurina* | Laurel sumac | Liner | 30' o.c. | 50 | 6% |
| *Rosa californica* | California rose | Liner | 12' o.c. | 100 | 13% |
| *Ribes speciosum* | Fuchsia-flowered gooseberry | 1 gal | 20' o.c. | 50 | 6% |
| *Rhamnus ilicifolia* | Holly-leaved redberry | 1 gal | 20' o.c. | 50 | 6% |
| *Elymus condensatus* | Giant wildrye | 1 gal | Clumped | 100 | 13% |
| *Mimulus aurantiacus* | bush monkey flower | 1 gal | Clumped | 50 | 6% |
| *Stipa pulchra* | Purple needlegrass | 1 gal | Clumped. | 100 | 13% |
| *Melica imperfecta* | Coast range melic | 1 gal | 12' o.c. | 50 | 6% |
| *Baccharis pilularis* | Coyote bush | 1 gal | 12" o.c. | 100 | 13% |
| **Subtotal** | | | | **800** | **100%** |
| **Total Container Stock** | | | | **900** | **100%** |

**Source of Plant Materials**

It is preferred that the source of all propagules and seed used at the mitigation site be from the site or adjacent riparian areas. If not available, the remainder of propagules and seed required will be from wild sources within Orange County or eastern Los Angeles County, and collected as close to the mitigation sites as possible to preserve regional genetic integrity.

Plant material for revegetation shall be derived from cuttings, materials salvaged from disturbed areas, and/or seeds obtained from randomly selected native trees and shrubs occurring locally within the same stream. Any replacement tree/shrub stock, which cannot be grown from cuttings or seeds, shall be obtained from a native plant nursery, be ant free and shall not be inoculated to prevent heart rot. If any materials must be obtained from other than onsite sources, the Project Biologist shall provide CDFW with a list of all such materials.

**Contract Growing**
Contract growing of all container plants shall be by a local experienced native plant nursery. Substitution of plant material at the time of planting depends solely upon the discretion of the Project Biologist. Any substitutions that are approved will be documented in the As-Built Plans.

**Container Plants**
One-gallon container stock, rosepots and liners shall be utilized for container stock production in order to develop vertical heterogeneity (strata). All plant materials will be inspected by the Project Biologist and approved as healthy, disease free and of proper size prior to planting. Overgrown, root-bound container stock will be rejected.

**Mycorrhizal Fungi**
Mycorrhizae are specialized fungi found on plant roots. A symbiotic relationship exists between plant roots and mycorrhizae wherein the plants benefit from the increased ability to take up nutrients and withstand drought when mycorrhizae are present. This relationship is essential to the growth rate, well-being, and longevity of native plant communities. Plant utilization of mycorrhizal fungi markedly increases the success of revegetation on disturbed or degraded lands. All appropriate container-grown plants, except those known to be non-host species, shall be inoculated with mycorrhizal fungi prior to delivery to the job site.

**Plant Placement**
Container stock will be laid out in such a manner that mimics natural plant distribution (i.e., in clusters and islands) to emulate regional reference sites. The Project Biologist will monitor and confirm that trees and shrubs have been placed at the designed elevation relative to the water source supporting them, such as ground water. All plants shall be planted in randomly spaced, naturally clumped patterns. The average planting densities shall meet the criteria specified in Tables 6 and 7.

**Planting Method for Rose Pot and/or Liner Plant Stock**
Rose pot and/or liner plant stock will be placed in a hole measuring at least twice the diameter and depth of the container. The root structure will be examined and excess root material removed. The top of the rootball will be set slightly above finish grade. The planting hole will be backfilled with native soil. Fertilizer, watering basins, and mulch are not required for this planting method.

**Planting Method for Container Stock**
One-gallon container stock will be planted in a hole measuring at least twice the diameter of the container and twice the depth. Container stock will be thoroughly watered the day before planting. One teaspoon (0.3 oz.) of Osmocote 14-14-14 (or equal) will be placed one inch below the root zone and backfilled with native soil to proper planting depth. The container will be upended into the palm of the hand to avoid damage to the root structure and placed in the planting hole. The top of the root ball will be set one inch above finish grade. The planting hole will be backfilled with native soil.

A three-inch high, hand-compacted earth berm, approximately 36 inches in diameter, will then be constructed around each container plant. This watering basin will be maintained until the plants are no longer irrigated. Mulch will be applied as a top dressing, 2 to 3 inches thick, but must not come in contact with the stem of the plant. Container stock will be watered immediately after installation.

**Erosion Protection**
To provide protection from erosion, willow cuttings shall be planted on 6-8 ft centers on the restored slope, or other appropriate erosion control methods. Willows shall be planted during the willow's dormant season, and shall be augured/dug into the groundwater or wetted soil. Areas of disturbed soils with slopes toward a stream or lake shall be stabilized to reduce erosion potential. Planting, seeding and mulching is conditionally acceptable. Where suitable vegetation cannot reasonably be expected to become established, non-erodible materials, such as coconut fiber matting, shall be used for such stabilization. Any installation of non-erodible materials not described in the original project description shall be coordinated with CDFW. Coordination may include the negotiation of additional Streambed Alteration Agreement provisions for this activity.

**Pruning and Staking**
There will be no pruning or staking of any vegetation. Diseased or insect-damaged foliage, if sufficient to require pruning, will serve as a benchmark for rejection of plant material.
A small amount of selective trimming of native species (e.g. willow, oak and sycamore) is allowed to prevent overspray of herbicide from reaching these branches, but only as provided within the conditions of the CDFW Streambed Alteration Agreement. Native vegetation may only be trimmed; individual plants shall not be removed. Material in excess of three (3) inches DBH shall require specific notice to and consultation with CDFW.

## F. Irrigation Plan

The Contractor shall provide irrigation for each mitigation site when natural moisture conditions are inadequate to ensure survival of plants. Irrigation shall be provided for a period of at least two years from planting. Irrigation shall be phased out during the fall/winter of second or third year unless unusually severe conditions threaten survival of plantings. All plants must survive and grow for at least two years without supplemental water for the restoration phase of the project to be eligible for acceptance by CDFW. Long-term irrigation may be incorporated into portions or all of the southern willow scrub and coast live oak-California walnut woodland that overlaps with the fire-prone plant removal areas as depicted on Exhibit 4.

Coarse mulch shall be placed around plantings to minimize water loss and discourage weed growth. Mulch shall be 3 to 4 inches deep and shall be placed in a minimum area 1.5 times the diameter of the drip line of the plant or 2 feet in diameter whichever is greater. The mulched area shall be maintained throughout the course of restoration, unless otherwise authorized in writing by CDFW. Mulch shall not be placed directly against the main stem of the plants.

Supplemental irrigation is to be used solely for the purpose of establishing the plants at the mitigation site and is of a temporary nature, with the exception of areas subject to fire-prone

plant removal. The goal of the irrigation program is to obtain germination and growth with the least amount of irrigation. Frequent irrigation encourages weed invasion and leaches nutrients from the soil.

The mitigation sites will be initially supported by a short-term automatic irrigation system as well as from existing water sources. Drip irrigation may be provided for trees and shrubs planted on the slopes. The container stock will be irrigated as long as necessary to establish the root systems in the native soils, probably two or three summers. The main line will be installed below-grade. All lateral lines will be installed above-grade for ease of removal and inspection. Alternatively, lateral lines may be installed below-grade and abandoned in place after project conclusion.

The critical period for irrigation is during the first winter and early spring following planting. During this time, roots are not well established and an unseasonable drought can cause high mortality. During dry periods after plant installation, the Project Biologist and the maintenance contractor will regularly inspect soil moisture. Watering during the summer dry season will occur as frequently as required.

After the initial plant establishment period, water will be applied infrequently and only as required to prevent the mortality of plants and seedlings. The irrigation methods employed will attempt to mimic wet rainfall years by incorporating evenly spaced, infrequent, deep applications of water. Within the fire-prone plant removal areas, long-term, irrigation will be used to mimic normal conditions, especially during dry years or periods of protracted low rainfall.

### G. As-Built Conditions

Once the implementation of the mitigation site has been completed, the Applicant will submit "As-Built" drawings to the Corps and CDFW within 45 days after completion of construction. The drawings will identify the date installation was completed and if there were any deviations from the approved Mitigation Plan.

## V. MAINTENANCE ACTIVITIES DURING THE MONITORING PERIOD

### A. Maintenance Activities

The purpose of this program is to ensure the success of the mitigation plantings. Maintenance will occur over the five-year life of the project. The Project Biologist will monitor all aspects of the revegetation in an effort to detect any problems at an early state. Potential problems could arise from irrigation failure, erosion, vandalism, competition from weeds and invasive species, and unacceptable levels of disease and predation.

These maintenance guidelines are specifically tailored for native plant establishment. The maintenance personnel will be fully informed regarding the habitat establishment program so they understand the goals of the effort and the maintenance requirements. A landscape contractor

with experience and knowledge in native plant habitat restoration will supervise all maintenance personnel.

For a period of 120 days following completion of the planting installation, the initial landscape contractor will be responsible for the care of the plantings. The purpose of the 120-day establishment period is to ensure continuity between the installation of the plant material and its short-term maintenance. The contractor's presence during this period is proven to increase project success. The contractor will control the spread of weed species and identify any efforts necessary to ensure the health and survival of the plantings.

Following the 120-day establishment period the project will be evaluated for health of plant material, and if judged satisfactory by the Project Biologist, the establishment period will be considered concluded and the long-term habitat maintenance program will begin. If plant health is not determined to be satisfactory, an additional 60 days will be allowed for the contractor to implement remedial measures. A different landscape contractor may implement this period of maintenance; however, the Project Biologist will continue to review the project's success.

Damage to plants, irrigation systems, and other facilities occurring as a result of unusual weather or vandalism will be repaired or replaced immediately.

**General Maintenance**
The Contractor will perform the following tasks as general maintenance duties:

- Plant Inspection;
- Weed control;
- Irrigation water volume and frequency;
- General maintenance of irrigation system;
- Trash and debris removal;
- Pest control; and
- Plant replacement.

**Plant Inspection**
After termination of the establishment period, the Project Biologist will inspect the mitigation site on a monthly basis for 18 months, inclusively. The plants shall be inspected on a quarterly basis thereafter until achievement of performance standards for the mitigation sites.

**Weed Control**
The mitigation sites shall be maintained free of weeds during the monitoring period. Weed eradication will minimize competition that could prevent the establishment of native species. All maintenance personnel will be trained to distinguish weed species from native vegetation to ensure only weedy species are removed or sprayed with herbicide.

Removal shall be done at least twice annually during the spring/summer season, as needed, through the term of mitigation monitoring. As weeds become evident, they should be immediately removed by hand or controlled with an appropriate herbicide as determined by a

licensed Pest Control Advisor (PCA). Weed debris shall be removed from the project area as accumulated and disposed of as permitted by law.

Weeds shall be manually removed before they can attain a height of three-inches (3") at intervals of not more than 30 days for the first two years of the project. All portions of the plant will be removed, including the roots. The Project Biologist shall direct the contractor regarding the selection of target weed species, their location, and the timing of weed control operations to ensure that native plants are avoided to the extent possible. Pulled weeds will be placed on a "mantilla" or other type of tarp to prevent the seeds from coming in contact with the ground.

A cleared space, 18 inches from the base of the plant, will be maintained around each container plant to minimize competition from other plant species. Mulch, two-inches thick within the watering basin, will be maintained throughout the monitoring period. Leaf and branch drop, and organic debris of native species, shall be left in place.

**Irrigation Water Volume and Frequency**
The Contractor shall be responsible for applying sufficient irrigation water to adequately establish new plant materials, and germinate and establish the applied seed. Irrigation water shall be applied in such a way as to encourage deep root growth (periodic deep irrigation versus frequent light irrigation). The Contractor will allow soil to dry down to approximately 50- to 60-percent of field capacity (in the top six or 10 inches after germination and during seedling establishment) before the next irrigation cycle. Wetting of the full root zone and drying of the soil between irrigation events is essential to the maintenance of the plants and the promotion of a deep root zone that will support the vegetation in the years after establishment. Systems may need to be on for as long as six to eight hours at a time in order to get complete water penetration to the lower soil horizons to encourage deep root growth. A soil probe or shovel shall be used to examine soil moisture and rooting depth directly.

**General Maintenance of Irrigation System**
The Contractor will be responsible for the regular maintenance and repair of all aspects of the irrigation system. Poorly functioning or non-functioning parts shall be replaced immediately so as to not endanger the plantings.

General system checks shall be conducted no less than weekly for the first month after installation to assure the system is functioning correctly, and monthly thereafter, except during periods when the irrigation system is not in operation as recommended by the Project Biologist.

Any erosion or slippage of soil caused by the contractor’s inadequate maintenance or operation of irrigation facilities shall be repaired by the contractor at his/her expense.

**Trash and Debris Removal**
The mitigation site shall be well maintained in order to deter vandalism and dumping of trash. The Contractor is responsible for avoiding impacts to plantings during trash removal activities. Contractor shall, during daily routine maintenance, manually remove weeds, liter, trash, and

debris from the mitigation site and dispose of off-site as permitted by law. Dead limbs and tree fall shall be left in place in the revegetation areas.

**Pest Control**
Young trees and shrubs will be monitored for signs of disease, insect and/or predator damage, and treated as necessary. Badly damaged plants will be pruned to prevent spreading of the pestilence or replaced in kind if removed. Excessive foraging by predators may necessitate protective screening around plants and/or poison baiting of the predators. The Project Biologist will be consulted on any pest control measures to be implemented.

The Contractor shall be responsible for maintaining a non-native rodent-free project. All measures to eradicate non-native rodents must be as directed by a licensed pest control consultant.

**Plant Replacement**
The installation contractor will be responsible for replacing all container stock plants terminally diseased or dead during the establishment period. The long-term maintenance contractor will thereafter replace all dead and/or declining plants in the winter months as recommended by the Project Biologist. Replacement plants shall be furnished and planted by the Contractor.

Replacement plants shall conform to the species, size requirements, and spacing as specified for the plants being replaced. The replacement plants shall be purchased from inventory at the same native plant nursery as were the contract-grown plant stock.

**Fertilization**
If nutrient deficiencies are observed during site monitoring, the Project Biologist may specify applications of slow-release pellet fertilizer or soil amendments to speed initial growth or as a remedial measure. These applications shall occur at the onset of the rainy season following the manufacturer's recommendations. Fertilizer will not be applied other than under the direction of the Project Biologist.

**Pruning**
No pruning is necessary unless otherwise specified by the Project Biologist. Dead wood shall be left on trees or where it has fallen as it plays an important role in habitat creation and soil formation. A small amount of selective trimming of native species (e.g. willow, oak and sycamore) is allowed to prevent overspray of herbicide from reaching these branches, but only as provided within the conditions of the CDFW Streambed Alteration Agreement. Native vegetation may only be trimmed; individual plants shall not be removed. Material in excess of three (3) inches DBH shall require specific notice to and consultation with CDFW.

**Staking of Trees**
Staking of trees is to be avoided unless determined necessary by the Project Biologist. All stakes shall be removed before the completion of the five-year monitoring period, or earlier as determined by the Project Biologist. All stakes shall be removed by the contractor and disposed of off-site in a legal manner.

## B. Responsible Parties

The Applicant/Permittee will be responsible for financing and carrying out maintenance activities.

Applicant/Permittee: Yorba Linda Estates, LLC
7114 East Stetson, Suite 350
Scottsdale, Arizona 85251
Contact: Douglas G. Wymore

## C. Maintenance Schedule

The mitigation maintenance and monitoring program will begin prior to or concurrent with the construction process and continue for five years following the completion of plant installation or until performance criteria are met. Table 8 below indicates the schedule of maintenance inspections.

**TABLE 8**
**MAINTENANCE SCHEDULE**

| Maintenance Task | Year | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| Plant Inspection | Monthly first 12 months | Monthly through 18th month; quarterly thereafter | Quarterly | Quarterly | Quarterly |
| Irrigation System Inspection | Monthly, or more frequently if required | Monthly | As Required | N/A | N/A |
| Trash and Debris Removal | Monthly | Quarterly | Quarterly | Quarterly | Quarterly |
| Weed Control | Minimum of Monthly | Monthly | Quarterly | Quarterly | Quarterly |
| Pest Control | Monthly | Bi-monthly | Quarterly | Quarterly | Quarterly |
| Plant Replacement | Annually | Annually | Annually | Annually | Annually |
| Fertilization (if necessary) | Annually | Annually | N/A | N/A | N/A |

# VI. MONITORING PLAN FOR THE COMPENSATORY MITIGATION SITES

## A. Performance Standards for Target Dates and Success Criteria

Performance Standards are based on the stated goals of the program and the design of the mitigation site. This mitigation program considers the habitat functions of both the jurisdiction to be impacted and proposed mitigation jurisdiction to confirm that the functions of the replacement mitigation equal or exceed those of existing Corps and CDFW jurisdiction.

It should be noted that Blue Mud Canyon is unique and unusual in terms of floral species composition, even relative to the other drainages within the study area, and as such no appropriate reference site is available for comparison.

All plantings shall have a minimum of 80-percent survival, by species, the first year and 100-percent survival thereafter and/or shall attain 50-percent cover after 3 years and 70-percent cover after 5 years for the life of the project. Prior to the mitigation site(s) being determined successful, they shall be entirely without supplemental irrigation for a minimum of 2 years. Throughout the monitoring period, no single species shall constitute more than 50-percent of the vegetative cover, no woody invasive species shall be present, and herbaceous invasive species shall not exceed 5-percent. If the survival and cover requirements have not been met, the Contractor is responsible for replacement planting to achieve these requirements. Replacement plants shall be monitored with the same survival and growth requirements for 5 years after planting.

## 1. Monitoring Plan for Southern Willow Scrub and Coast Live Oak-Walnut Riparian Mitigation Sites

**First-Year Monitoring**

Success Standard: A minimum of 30-percent coverage by native species;
100-percent of proposed canopy species present;
50-percent of proposed understory present
No greater than 40-percent coverage by non-native species.

**Second-Year Monitoring**

Success Standard: A minimum of 40-percent coverage by native species;
100-percent of proposed canopy species present
60-percent of proposed understory present
No greater than 25- percent coverage by non-native species.

**Third-Year Monitoring**

Success Standard: A minimum of 50-percent coverage by native species;
100-percent of proposed canopy species present
60-percent of proposed understory present
No greater than 15- percent coverage by non-native species;

**Fourth-Year Monitoring**

Success Standard: A minimum of 60-percent coverage by native species;
100-percent of proposed canopy species present
75-percent of proposed understory present
No greater than 10- percent coverage by non-native species;

**Fifth-Year Monitoring**

Success Standard: A minimum of 70-percent coverage by native species;
100-percent of proposed canopy species present
85-percent of proposed understory present
No greater than 5- percent coverage by non-native species with zero tolerance for species considered highly invasive by Cal-IPC

**Diversity of Vegetation**

To avoid a monoculture or limited species diversity within the established habitat, a minimum of six species native to the target habitat types must represent 0.5-percent (each) of the total vegetational composition within the revegetation areas, with no single species representing over 75-percent composition. The low percentage representation is due to the expectation that this diversity will be provided by native herbs that would not normally represent a significant percentage of total vegetation cover in a mature habitat. In addition, the total percent composition of all non-native species cannot exceed 5-percent.

**Survivorship of Container Stock**

During annual quantitative monitoring, the Project Biologist shall determine survivorship of tree, shrub, and herb strata container stock. In each year of monitoring, container stock survivorship must be at least 80-percent. Recruitment of native species will compensate for lack of survivorship for planted species.

**Functionality as Wildlife Habitat**

While conducting qualitative surveys, the Project Biologist will record wildlife observations within the revegetated habitat. The development of quantitative measures for wildlife use is not necessary for this mitigation site, but general impressions of wildlife usage of any restoration area should be considered among the success criteria.

**Native Plant Recruitment**

Evidence of native plant recruitment from year to year is another example of the successful creation of a functional, self-sustaining habitat. Noted recruitment would be considered a satisfied success criterion.

**Probability of Continued Habitat Progression**

The qualitative monitoring will provide the Project Biologist with an opportunity to evaluate the progression of the revegetation sites towards maturity. This determination will be used to support a final decision as to whether the revegetation effort has been successful. If several of the above criteria have not been met, but the site is clearly nearing satisfaction of those criteria, the Project Biologist may suggest that the Corps and CDFW accept the mitigation as completed based on his/her conclusion of continuing habitat progression.

## B. Target Hydrological Regime

Hydrological contribution to the mitigation site will originate as direct precipitation that will drain directly to the site, providing for seasonal ponding during the rainy season. Hydrological input is

also expected to consist of runoff from bordering areas. The enhanced hydrology within the mitigation site is expected to provide for dynamic storage of surface water, short-term storage of surface water, dissipation of energy, moderation of groundwater flow, nutrient cycling, removal of imported elements and compounds, retention of particulates, and export of organic carbon.

The mitigation plantings will initially be supported by a temporary irrigation system until gradually weaned, with the exception of long-term management associated with the fire-prone plant removal areas that overlap with the 5.30-acre mitigation areas that will be subject to long-term irrigation as determined appropriate for public safety. Irrigation water will be supplied via a potable water system piped into the mitigation site.

## C. Monitoring Methods

Monitoring will assess the attainment of annual and final success criteria and identify the need to implement contingency measures in the event of failure. Monitoring methods include an annual tally of dead and/or declining plant stock, and visual estimates of cover as well as field sampling techniques that are based in accordance with the methodology developed by the California Native Plant Society (CNPS).[3] Please refer to *A Manual of California Vegetation* for further details on this sampling method.

**Sampling Techniques for Vegetation Cover and Diversity**
Percent canopy cover of the mitigation plantings will be measured by using the point-intercept sampling method centered in a 2-meter by 50-meter plot. At each 0.5-meter interval along each transect (beginning at the 50-cm mark and ending at 50-meter), a point is projected vertically into the vegetation. Each plant species intercepted by a point is recorded, providing a tally of hits for each species in the herbaceous, shrub, and tree canopies, making it possible to record more than 100 hits in any 50-meter transect. Percent cover for each species, according to vegetation layer (herb, shrub, and tree) can be calculated from these data. A list of all additional species within the 250 square-meter belt is subsequently made.

Two 2-meter by 50-meter long transects per acre will be used to monitor the development of the revegetation. The various transects will be randomly located for the first sampling event and permanently marked to facilitate their use in subsequent years. A sample of a proposed transect data sheet is provided in Appendix B.

**Photo-Documentation**
Permanent stations for photo-documentation will be established during the first annual monitoring event. Photos shall be taken each monitoring period from the same vantage point and in the same direction each year, and shall reflect material discussed in the annual monitoring report.
Qualified habitat restoration specialists, biologists, or horticulturists with appropriate credentials and experience in native habitat restoration shall perform monitoring. Continuity within the personnel and methodology of monitoring shall be maintained insofar as possible to ensure comparable assessments.

[3] Sawyer, John O. and Todd Keeler-Wolf. 1995. *A Manual of California Vegetation*. California Native Plant Society.

## D. Monitoring Schedule

### Qualitative Monitoring

The Project Biologist will conduct qualitative monitoring surveys on a monthly basis for the first 18 months, and quarterly thereafter until performance standards are met. Qualitative surveys, consisting of a general site walkover and habitat characterization, will be completed during each monitoring visit. General observations, such as fitness and health of the planted species, pest problems, weed establishment, mortality, and drought stress, will be noted in each site walkover. The Project Biologist will also note observations on wildlife use and native plant recruitment for the purpose of later discussion in the annual reports. Records will be kept of mortality and other problems such as insect damage, weed infestation, and soil loss. The Project Biologist will determine remedial measures necessary to facilitate compliance with performance standards. All remedial measures undertaken will be referenced in the annual monitoring report to the Corps, USFWS, and CDFW.

## E. Annual Monitoring Reports

An annual report shall be submitted to the Corps, USFWS, and CDFW by Jan. 1 of each year for 5 years after planting. Photos from designated photo stations shall be included.

The Project Biologist or other qualified wildlife biologist shall survey the mitigation site to monitor the recovery of wildlife and aquatic resources in the area following construction. Monitoring of wildlife and aquatic resources shall be done in summer and winter of each year, through the term of mitigation monitoring, and the results and analysis shall be submitted with the report specified above.

At the end of each of the five monitoring period growing seasons, for the duration of the monitoring period, an annual report will be prepared for submittal to the Corps, USFWS, and CDFW. Since planting may not occur when planned, monitoring shall be tied to the actual implementation date (e.g., the first annual report shall be delivered on January 1st of the year following the first growing season after planting). These reports shall include the survival, percent cover, and height by species of both trees and shrubs, the number by species of plants replaced, an overview of the revegetation and exotic plant control efforts, and the method used to assess these parameters shall also be included. These reports will assess both attainment of yearly target success criteria and progress toward final success criteria. These reports will also include the following:

- A list of names, titles, and companies of all persons who prepared the content of the annual report and participated in monitoring activities for that year
- A copy of the Corps permit and any attachments including Special Conditions and subsequent Letters of Modification, as well as the Biological Opinion
- A copy of the CDFW Streambed Alteration Agreement and any subsequent Amendments

- A vicinity map indicating location of the mitigation site
- A mitigation site map identifying habitat types, transect locations, photo station locations, etc. as appropriate
- Copies of all monitoring photographs
- Copies of all completed field data sheets
- An analysis of all qualitative and quantitative monitoring data.

## VII. COMPLETION OF COMPENSATORY MITIGATION

### A. Notification of Completion

The Contractor should notify the Applicant/Permittee, the Corps, USFWS, and CDFW in writing when the monitoring period is complete and the Corps-approved success criteria have been met. A formal jurisdictional delineation of areas rehabilitated, established, or preserved shall be submitted to the Corps, USFWS, and CDFW.

### B. Final Success Criteria Resolution

If the project meets all success criteria at the end of the five-year monitoring period, the revegetation will be considered a success. If not, the maintenance and monitoring program will be extended one full year at a time, and a specific set of remedial measures approved by the Corps, UCFWS, and CDFW will be implemented until the standards are met. Only those areas that fail to meet the success criteria will require additional monitoring. This process will continue until all year-five standards are met or until the Corps, USFWS, and CDFW determine that other revegetation measures are appropriate.

Final success criteria will not be considered to have been met until a minimum of three years (see p. 22, Irrigation Plan) after all human support, including artificial irrigation, has ceased. Should the revegetation effort meet all goals prior to the end of the five-year monitoring period, the Corps, USFWS, and CDFW, at their discretion, may terminate the monitoring effort and release the bond. At that time the Applicant/Permittee will be released from further maintenance and monitoring requirements of the mitigation area.

If, during the monitoring period, a destructive natural occurrence does occur which damages or destroys the mitigation planting, and if the mitigation planting was documented to have been proceeding well toward establishment, then reconstruction and replanting will not be required. However, if the mitigation site fares significantly worse than the surrounding natural communities in this same natural disaster, then the mitigation site would be considered to have not established itself, and reconstruction, replanting, and monitoring would continue.

### C. Agency Confirmation

Following receipt of the final annual monitoring report, the Corps, USFWS, and CDFG will contact the Applicant as soon as possible to schedule a site visit to confirm the completion of the compensatory mitigation effort and any jurisdictional delineation. The compensatory mitigation will not be considered complete without an onsite inspection by a Corps, USFWS, and CDFW project manager and written confirmation that approved success criteria have been achieved.

It is therefore critical that agency staff review annual reports on a timely basis and provide comments throughout the maintenance and monitoring program so that any project deficiencies they note can be addressed prior to the expected end of the program.

## VIII. CONTINGENCY MEASURES

### A. Initiating Procedures

If a performance standard is not met for all or any portion of the mitigation project in any year, or if the approved success criteria are not met, the Project Biologist will prepare an analysis of the cause(s) of failure and, if determined necessary by the Corps, USFWS, and CDFW, propose remedial actions for approval. If the compensatory mitigation site has not met one or more of the success criteria or performance standards, the responsible party's maintenance and monitoring obligations shall continue until the Corps, USFWS, and CDFW gives final approval the mitigation obligations have been satisfied. It is therefore incumbent upon the Project Biologist to foresee project deficiencies as part of the monitoring program and take appropriate steps to address the situation.

### B. Alternative Locations for Contingency Mitigation

Sufficient area for establishment of the mitigation site is available so alternative locations would be unnecessary. Although this plan is expected to be successful, both onsite and off-site alternative locations may be used in the event that revegetation cannot be achieved.

### C. Funding Mechanism

The Applicant/Permittee will fund planning, implementation, maintenance and monitoring of any contingency measures that may be required to achieve mitigation goals through an up-front payment to the Contractor. Thereafter, all expenses in implementing this mitigation plan are to be borne by the Contractor.

### D. Responsible Parties

The Applicant/Permittee will be responsible for implementing, maintaining, and monitoring any contingency procedures.

Applicant/Permittee: Yorba Linda Estates, LLC
7114 East Stetson, Suite 350
Scottsdale, Arizona 85251
Contact: Douglas G. Wymore

## IX. LONG-TERM MANAGEMENT PLAN AND ASSOCIATED FUNDING

Upon completion of and acceptance by the Resource Agencies that the five-year performance standards have been achieved for Blue Mud Canyon, implementation of a Long-Term Management Plan (LTMP) will begin. With the successful completion of the mitigation and the achievement of the performance standards, it is expected that the areas will require only limited management activities that would include the following:

(1) Ongoing Monitoring,
(2) Ongoing Non-Native Invasive Vegetation Control,
(3) Ongoing Removal of Fire-Prone Species,
(4) Trash and Debris Removal

### A. Monitoring Tasks

A qualified Biological Monitor shall be retained to assist in implementing the LTMP and to monitor the status of the LTMP for Drainages Blue Mud Canyon. The activities to be conducted by the Biological Monitor are as follows.

**Activity:** Annual Monitoring. Conduct annual monitoring of the LTMA to determine what management activities are needed and where to focus those activities.

**Activity:** Work Planning. Prepare an annual work plan and coordinate with the maintenance contractor(s) to carry out the management activities including the need for non-native species removal, trash and debris removal, or other management activities.

**Activity:** Data Collection. Document qualitative and quantitative data related to the implementation of management activities

**Activity:** Annual Reporting. At the end of the first year, and then every other year, a management report will be prepared by the Biological Monitor and will be submitted to the Agencies upon request. These reports will include:

(a) A description of the maintenance activities conducted during that calendar year;

(b) The date of and location where the management activities were undertaken;

(c) Information regarding weed eradication/abatement, including the amount removed and treated, frequency and timing of removal and treatment, and disposal specifics; and

(d) Photos from designated photo stations.

## B. Funding and Prioritizing Tasks

### 1. Funding

Prior to impacts within Corps or CDFW jurisdiction, the amount of a non-wasting endowment will be determined that will be necessary to fund the annual cost of carrying out the LTMP activities described above, if approved by the Corps. If approved by the Corps, the endowment will fund all management and monitoring activities associated with the LTMP. No further monetary obligations will be required of the Manager or any future long-term manager.

The endowment shall be approved by the Agencies or designee (if approved by the CDFW Director). If a designee is approved to hold the endowment, the Agencies will require the entity to enter into an agreement that contains terms relating to management of the endowment, the periodic auditing and reporting of expenditures, earnings and other pertinent information, and provisions for the transfer of the endowment and unspent earnings to the Agencies, or a successor owner/manager under certain conditions. If approved by the Agencies, the Manager will transfer the total non-wasting endowment fund to the designee approved by the CDFW and Corps within one year after commencement of construction.

The endowment will be placed in an interest-bearing security for the sole purpose of carrying out the management activities described above. The Manager will have access to the interest generated by the endowment and will be able to draw on the funds throughout the year to carry out the management activities.

### 2. Prioritizing Tasks

The anticipated that the activities to be conducted annually will include monitoring, trash and debris removal, invasive plant control and management reporting. Invasive vegetation removal is the activity that will occur in perpetuity, but because of the dynamic nature of riparian systems, is an activity that may not need to occur every single year. Other management activities might be added as part of the adaptive management of the LTMA, but these activities are not anticipated at this time.

Each year the Manager and Biological Monitor will develop a Work Plan that prioritizes the mandatory management activities and other adaptive management activities based on natural resource conditions for that year. How the annual draw on the endowment will be spent will be determined based on this prioritized Work Plan.

Because the management needs will vary from year to year, any unspent interest would be left in the interest-bearing security and could be utilized the following year(s). This adaptive funding

mechanism provides the necessary flexibility for the Manager to allocate funds toward those management activities that require attention for that particular year and to plan ahead for implementation of management activities that become necessary in the future.

## PART 2: MITIGATION FOR NON-JURISDICTIONAL RESOURCES

Impacts to areas of upland California walnut woodland and blue elderberry woodland were determined to be significant in the project's Draft Environmental Impact Report (DEIR). Areas to implement the mitigation for these impacts, through the restoration of areas of California walnut woodland and blue elderberry woodland have been identified within project open space in the Blue Mud Canyon environs. As discussed below, this component of the HMMP assumes the alternative with the greatest amount of impact will be implemented, thereby ensuring that adequate area is identified for the proposed mitigation. Table 9 below summarizes the impacts associated with grading as well as impacts for fuel modification Zone B, which requires 100-percent removal of native shrubs, for each alternative:

**Table 9: Combined Grading and Fuel Modification Impacts to California Walnut Woodland (CWW), and Blue Elderberry Woodland (BEW)**

| | **Alternative 1** | | | **Alternative 2** | | | **Alternative 3** | | |
|---|---|---|---|---|---|---|---|---|---|
| | Grade | FMZ | Total | Grade | FMZ | Total | Grade | FMZ | Total |
| **CWW** | 0.48 | 0.36 | 0.84 | 0.22 | 0.30 | 0.52 | 0.22 | 0.40 | 0.62 |
| **BEW** | 10.92 | 0.0 | 10.92 | 13.18 | 0.02 | 13.20 | 11.92 | 0.09 | 12.01 |
| **Total:** | | | **11.76** | | | **13.72** | | | **12.63** |

Under Alternative 1, a total of 11.76 acres (CWW and BEW) would be permanently impacted. Under Alternative 2, a total of 13.72 acres would be permanently impacted, and under Alternative 3, a total of 12.63 acres would be permanently impacted. As such, these impacts have been selected for purposes of determining required mitigation and for identifying appropriate mitigation areas. Exhibit 7 depicts up to 14.70 acres of candidate mitigation areas suitable for the woodland mitigation.

It should also be noted that the portions of the proposed mitigation site is coincident with the area proposed for removal of fire prone vegetation on the project's Conceptual Fuel Modification Plan [the relationship of the mitigation areas and area subject to removal of fire prone vegetation is depicted on Exhibit 7]. It is important to note a number of points regarding the integration of the California walnut woodland and blue elderberry woodland with the area subject to fire prone vegetation removal.

- California walnut and blue elderberries are not considered "fire prone" and existing (healthy) walnuts and elderberries will be preserved, as will other associated species such as laurel sumac and toyon;

- Within areas proposed for habitat restoration, only native species, appropriate for the California walnut and blue elderberry woodland, are proposed (see Tables 11 and 12 below);

- As noted in Tables 11 and 12 below, spacing of the large shrubs will be consistent with the spacing of these species within the existing communities onsite, and also consistent with the spacing required to ensure public safety;

- Maintenance within the areas subject to fire prone vegetation removal, will focus on non-native species and a limited number of fire-prone species that actually occur on the site.

- The area will be managed for the long-term for habitat values, while also ensuring for adequate public safety, as set forth in the long-term management section below.

## I. DESCRIPTION OF THE PROJECT/IMPACT SITE

### A. Responsible Parties

Applicant/Permittee: Yorba Linda Estates, LLC
7114 East Stetson, Suite 350
Scottsdale, Arizona 85251
Contact: Douglas G. Wymore

Preparer of Mitigation Plan: Glenn Lukos Associates, Inc.
Contact: Tony Bomkamp
29 Orchard
Lake Forest, California 92630-8300
Telephone: (949) 837-0404

### B. Habitat Types Subject to Impacts

*California Walnut Woodland*

Prior to the 2008 Freeway Complex Fire, approximately 6.37 acres of the Study Area supported California walnut woodland. This community was observed in the southern portion of the Study Area and is largely restricted to Blue Mud Canyon and was closely associated with California sagebrush-monkeyflower scrub, blue elderberry woodland, and the coastal sage scrub/chaparral ecotone. The California walnut woodland is considered a special-status habitat by CDFW.

*Blue Elderberry Woodland*

Prior to the 2008 Freeway Complex Fire, approximately 23.88 acres of the Study Area supported blue elderberry woodland. This community was commonly observed on the lower slopes of hillsides and within the drier reaches of the riparian areas and on terraces adjacent to drainage courses.

Component species within blue elderberry woodland include blue elderberry, albeit at a low density (on average) of approximately 10 trees per acre, laurel sumac, which is often co-

dominant or dominant in these areas, coyote bush, giant wild rye, poison oak, California walnut (restricted to Blue Mud Canyon and limited areas along Drainage D), sweet fennel, southern honeysuckle, poison hemlock, chaparral nightshade, and fuchsia flowered gooseberry. The blue elderberry woodland is considered a special-status habitat by CDFW.

## II. OBJECTIVES OF THE COMPENSATORY MITIGATION

The objectives of the proposed habitat mitigation and monitoring program (HMMP) is to provide for full mitigation of permanent impacts for whichever alternative is selected.

### A. Mitigation for Habitat Types

In order to mitigate for impacts to California walnut woodland and blue elderberry woodland, the Project Applicant has prepared this habitat mitigation and monitoring plan for blue elderberry woodland located within Blue Mud Canyon as well as adjacent to and north of Drainage D. The plan also incorporates California walnut into the plant palette to mitigate the loss of California walnut woodland as summarized in Table 10 below. The plan has been prepared by a qualified biologist. The plan includes the restoration of blue elderberry woodland and California walnut woodland and includes: replacement of blue elderberry woodland and California walnut woodland habitat at a minimum ratio of 1:1; responsibility and qualifications of the personnel to implement and supervise the plan; site selection; site preparation and planting implementation; schedule; maintenance plan/guidelines; monitoring plan; and long-term preservation. A summary of the impacts and associated 1:1 mitigation for each alternative is provided below in Table 10.

**TABLE 10**
**Impacts and Associated Mitigation**

| Vegetation Types | Option 1 Impacts | Option 2 Impacts | Option 2A Impacts |
|---|---|---|---|
| **Upland Areas** | | | |
| California Walnut Woodland | 0.84 acre | 0.52 acre | 0.62 acre |
| Blue Elderberry Woodland | 10.92 acres | 13.20 acres | 12.01 acres |
| Southern Willow Scrub | 0.0 acres | 0.0 acres | 0.0 acres |
| **Total** | **11.76 acres** | **13.72 acres** | **12.63 acres** |

### B. Time Lapse Between Jurisdictional Impacts and Expected Compensatory Mitigation Success

Project grading activities will commence upon receipt of permits with project impacts expected to occur immediately thereafter. Mitigation site grading, planting, and irrigation shall begin prior to or concurrent with the planned date of initiating authorized site grading. Preparation of mitigation areas, including eradication of non-native plant species encountered will be concurrent with commencement of grading.

Within one year of the completion of mitigation installation, it is expected that an immature woodland vegetative structure will exist such that insects and birds will utilize the mitigation site for foraging.

## III. DESCRIPTION OF THE PROPOSED COMPENSATORY MITIGATION SITES

### A. Location and Size of the Compensatory Mitigation Site

Candidate areas of up to 14.70 acres are depicted on Exhibit 7.

### B. Ownership Status

The present owners of the mitigation sites are:

Applicant/Permittee: Yorba Linda Estates, LLC
7114 East Stetson, Suite 350
Scottsdale, Arizona 85251
Contact: Douglas G. Wymore

## IV. IMPLEMENTATION PLAN FOR THE COMPENSATORY MITIGATION SITES

### A. Implementation Schedule

The mitigation installation contractor (herein "Contractor"), shall be responsible for site preparation, irrigation installation and mitigation plantings, which shall begin during construction activities. Compensatory mitigation designated to occur within the mitigation site shall be installed no later than one construction season after commencement of habitat disturbance.

### B. Site Preparation

Site preparation shall consist of minor localized grading, clearing and controlling exotic plants, trenching and installation of underground irrigation components, removing trash and debris, preparing planting holes and doing any other work necessary to make ready the area for planting.

**Mitigation Site Grading Plan**
As the topography of the mitigation sites is generally satisfactory under existing conditions for establishing the mitigation site, only minimal localized grading will be necessary.

**Exotic Vegetation Control**
The predominance of non-native, invasive weed species throughout California has presented a challenge to most native revegetation projects. Weedy species are opportunistic, rapidly colonizing disturbed sites such as revegetation sites. This can lead to the displacement of native species if the weedy species are not properly treated. Several of these invasive species are

capable of out-competing most native understory and herbaceous plants and some can out-compete and even displace existing native trees and shrubs. Therefore, non-native vegetation including but not limited to poison hemlock (*Conium maculatum*), sweet fennel (*Foeniculum vulgare*), tree tobacco (*Nicotiana glauca*), castor bean (*Ricinus communis*), black mustard (*Brassica nigra*), summer mustard *(Hirschfeldia incana*), wild radish (*Raphanus sativa*), and non-native annual grasses such as bromes, wild oats and barley, will be removed from the mitigation site and disposed of in a manner and at a location which prevents its reestablishment. Removal shall be done at least twice annually during the spring/summer season, as needed, through the term of the mitigation monitoring period.

One of the largest obstacles to the successful revegetation of a site is the exotic seed bank residing in the soil. This seed bank can persist for several years, or even decades, and poses one of the major threats to restoration programs. Undesirable exotic plants will be eradicated either during initial site grading or prior to site preparation. If grading precedes planting by more than a few months, it will be necessary to eradicate undesirable exotic plants that have become established prior to planting and seeding of the mitigation sites. If deemed necessary, a "grow-and-kill" cycle will be established during that period. "Grow and kill" is a cycle of applying water, germinating the non-native, invasive species and spraying with the appropriate chemical. This allows a large portion of the seed bank currently present in the soil to be removed. Eliminating or substantially reducing the competition from non-native exotics early in the life cycle of native plants helps to ensure more rapid growth and cover by the native species.

The type, quantity, and method of herbicide application will be determined by a California licensed Pest Control Advisor (PCA) who will inspect the site, write project recommendations and submit same to the Project Biologist for approval. Pesticide recommendations shall include, but are not limited to, the pesticides to be used, rates of application, methods of application, and areas to which pesticides are to be applied. A licensed Pest Control Operator (PCO) may work under the supervision of the PCA who will employ best management practices regarding the timing, quantity, and type of herbicide for each species. The PCA will determine both immediate and follow-up herbicide application for each species. No herbicides shall be used where threatened or endangered plant species occur, when wind velocities are above 5 miles per hour.

Weed control will be maintained throughout the monitoring period. Weeds will be controlled before their setting of seed. Ongoing weed control will be accomplished manually by the use of a hoe or other tool to uproot the entire plant, a mower or weed whip to cut plants, or by herbicide application as prescribed in this Mitigation Plan. Weed species identified as invasive, particularly tenacious, or those with wind-borne seed will be subject to the earliest control efforts. The Project Biologist will direct the contractor regarding the selection of target weed species, their location and the timing of weed control operations to ensure that native plants are avoided to the extent possible.

**Contractor Education**

Prior to the commencement of grading or any construction work, the Contractor will review all aspects of the Mitigation Plan that concern the contractors including permit requirements, site protection, maintenance inspections, landscape procedures and monitoring.

**Nesting Birds**
The Contractor may remove vegetation within drainages from March 1 to July 31 if a qualified biologist conducts a survey for nesting birds within three days prior to the vegetation removal and ensures no nesting birds shall be impacted by the project. These surveys shall include the areas within 200 feet of the edge of the proposed impacts. If active nests are found, a minimum 50-foot (200 feet for raptors) fence barrier shall be erected around the nest site. No habitat removal or any other work shall occur within the fenced nest zone if the nest continues active beyond July 31, until the young have fledged, are no longer being fed by the parents, have left the nest, and will no longer be impacted by the project. The Contractor shall submit the mapped survey results to CDFW for review and approval prior to vegetation removal to ensure full avoidance measures are in place. The Contractor will adhere to all applicable requirements of federal and state codes (e.g., Migratory Bird Treaty Act and CDFG Code 3503.5).

## C. Planting Plan

California walnut woodland and blue elderberry woodland habitats will be rehabilitated within the proposed mitigation areas. Planting shall consist of preparing planting holes, planting container stock, installing plant protection devices, applying mulch and hydroseeding. No planting shall be done in any area until the area concerned has been prepared in accordance with the plans and presents an appearance satisfactory to the Project Biologist.

All planting should be done after the first wetting rains between October 1 and February 1 to take advantage of the winter rainy season, dormancy of foliage, and rooting period to ensure optimum survival of plantings. Should the Contractor be required to plant during other times of the year, chances of survival are diminished. To compensate for decreased survival rates, the Operator shall be required to augment the specified planting density by 25-percent to account for the likelihood of increased mortality of plantings, unless irrigation is incorporated into the restoration program. Completion of all mitigation requirements shall be concluded within two years of project implementation within target areas. Planting, maintenance, monitoring and reporting activities shall be overseen by a specialist familiar with restoration of native plants.

**California Walnut Woodland**
This plan provides for the rehabilitation of California walnut woodland based primarily on the walnut woodland composition in Blue Mud Canyon and portions of Drainage G. If a less impactful Project Alternative is selected, the mitigation will be reduced accordingly while maintaining a 1:1 ratio. The planting palette is presented in Table 11 below. It should be noted that walnuts will be mixed with blue elderberry and coast live oak, as these typically co-occur within the neighboring areas of the Chino and Puente Hills.

**Blue Elderberry Woodland**
This plan provides for the rehabilitation of blue elderberry woodland based primarily on the blue elderberry woodland composition in Blue Mud Canyon and Drainage G. The planting palette is presented in Table 12 below. It should be noted that blue elderberry will be mixed with

California walnut and coast live oak, as these typically co-occur within the neighboring areas of the Chino and Puente Hills.

In addition to the species set forth in Tables 11 and 12, the additional site-appropriate native plants that would not be subject to removal as "fire-prone" species and set forth in Table 13 may be included in the plant palettes for both the walnut and elderberry woodlands.

**TABLE 11**
**CALIFORNIA WALNUT WOODLAND**
**(up to 0.84 acre to be rehabilitated)**

| Botanic Name | Common Name | Stock Type | Plant Spacing | No. per Acre | Percent |
|---|---|---|---|---|---|
| **Canopy** | | | | | |
| *Juglans californica* | California walnut | 1 gal | 30' o.c. | 50 | 50% |
| *Quercus agrifolia* | Coast live oak | 1 gal | 50' o.c | 10 | 10% |
| *Sambucus nigra* ssp. *caerulea* | Blue elderberry | 1 gal | 50' o.c. | 40 | 40% |
| **Subtotal** | | | | **100** | **100%** |
| **Understory** | | | | | |
| *Heteromeles arbutifolia* | Toyon | 1 gal | 30' o.c. | 50 | 12.5% |
| *Malosma laurina* | Laurel sumac | Liner | 30' o.c. | 50 | 12.5% |
| *Ribes speciosum* | Fuchsia-flowered gooseberry | 1 gal | 30' o.c. | 100 | 10% |
| *Rhamnus ilicifolia* | Holly-leaved redberry | 1 gal | 30' o.c. | 100 | 10% |
| *Elymus condensatus* | Giant wildrye | 1 gal | 8' o.c. | 100 | 10% |
| *Mimulus aurantiacus* | bush monkey flower | 1 gal | 12' o.c | 50 | 5% |
| *Stipa pulchra* | Purple needlegrass | 1 gal | 8' o.c. | 100 | 10% |
| *Melica imperfecta* | Coast range melic | 1 gal | 12' o.c. | 150 | 15% |
| *Baccharis pilularis* | Coyote bush | 1 gal | 12" o.c. | 100 | 10% |
| *Opuntia littoralis* | Prickly-pear cactus | pads | clumped | 300 | 30% |
| **Subtotal** | | | | **1,000** | **100%** |
| **Total Container Stock** | | | | **1,100** | **100%** |

| TABLE 12<br>BLUE ELDERBERRY WOODLAND<br>(up to 13.20 acres to be rehabilitated) | | | | | |
|---|---|---|---|---|---|
| **Botanic Name** | **Common Name** | **Stock Type** | **Plant Spacing** | **No. per Acre** | **Percent** |
| **Canopy** | | | | | |
| *Quercus agrifolia* | Coast live oak | 1 gal | 50' o.c. | 5 | 10% |
| *Sambucus nigra* ssp. *caerulea* | Blue elderberry | 1 gal | 30' o.c. | 40 | 80% |
| *Juglans californica* | California walnut | 1 gal | 30' o.c. | 5 | 10% |
| **Subtotal** | | | | **50** | **100%** |
| **Understory** | | | | | |
| *Heteromeles arbutifolia* | Toyon | 1 gal | 30' o.c. | 50 | 5% |
| *Malosma laurina* | Laurel sumac | Liner | 30' o.c. | 50 | 5% |
| *Ribes speciosum* | Fuchsia-flowered gooseberry | 1 gal | 8' o.c. | 100 | 10% |
| *Rhamnus ilicifolia* | Holly-leaved redberry | 1 gal | 8' o.c. | 100 | 10% |
| *Elymus condensatus* | Giant wildrye | 1 gal | clumped. | 100 | 10% |
| *Mimulus aurantiacus* | bush monkey flower | 1 gal | 12' o.c | 50 | 5% |
| *Stipa pulchra* | Purple needlegrass | 1 gal | 8' o.c. | 100 | 10% |
| *Melica imperfecta* | Coast range melic | 1 gal | 12' o.c. | 150 | 15% |
| *Baccharis pilularis* | Coyote bush | 1 gal | 12" o.c. | 100 | 10% |
| *Opuntia littoralis* | Prickly-pear cactus | pads | clumped | 200 | 20% |
| **Subtotal** | | | | **1,000** | **100%** |
| **Total Container Stock** | | | | **1,050** | **100%** |

| TABLE 13<br>Additional Optional Plant Species | | |
|---|---|---|
| **Botanic Name** | **Common Name** | **Stock Type** |
| **Herbs** | | |
| *Pseudognaphalium californicum* | California everlasting | 1 gal |
| *Grindelia stricta* | Gum plant | 1 gal |
| *Lasthenia californica* | Dwarf goldfields | 1 gal |
| *Leymus condensatus* | Giant wild rye | 1 gal |
| *Mirabilis californica* | Wishbone bush | 1 gal |
| *Nassella (stipa) lepidra* | Foothill needlegrass | 1 gal |
| *Sisyrinchium bellum* | Blue eyed grass | 1 gal |
| *Solanum xantii* | Purple nightshade | 1 gal |
| *Verbena lasiostachys* | Western vervain | 1 gal |
| **Shrubs** | | |
| *Atriplex lentiformis* ssp. *breweri* | Brewer saltbush | 1 gal |
| *Baccharis emoyi* | Emory baccharis | 1 gal |
| *Baccharis pilularis* ssp. *Consanguinea* | Chaparral bloom | 1 gal |
| *Brickellia californica* | No common name | 1 gal |
| *Dendromecon rigida* | Bush poppy | 1 gal |
| *Encelia californica* | California encelia | 1 gal |
| *Epilobium canum (Zauschneria californica* | Hoary California fuschia | 1 gal |
| *Eriodictycon trichocalyx* | Yerba santa | 1 gal |

| | | |
|---|---|---|
| *Keckiella antirrhinoides* | Yellow bush penstemon | 1 gal |
| *Keckiella cordifolia* | Heart leaved penstemon | 1 gal |
| *Lonicera subspicata* | Wild honeysuckle | 1 gal |
| *Lotus scoparius* | Deerweed | 1 gal |
| *Malacothamnus fasciculatus* | Chapparal mallow | 1 gal |
| *Opuntia prolifera* | Coast cholla | 1 gal |
| *Prunus ilicifolia* spp. *Ilicifolia* | Holly leafed cherry | 1 gal |
| *Rhamnus californica* | California coffee berry | 1 gal |
| *Rhamnus crocea* | Redberry | 1 gal |
| *Rhus integrifolia* | Lemonade berry | 1 gal |
| *Romneya coulteri* | Matilija poppy | 1 gal |
| *Solanum douglasii* | Douglas nightshade | 1 gal |
| *Trichostema lanatum* | Woolly blue curls | 1 gal |

**Source of Plant Materials**
It is preferred that the source of all propagules and seed used at the mitigation site be from the site. If not available, the remainder of propagules and seed required will be from wild sources within Orange County, and collected as close to the mitigation sites as possible to preserve regional genetic integrity.

Plant material for revegetation shall be derived from cuttings, materials salvaged from disturbed areas, and/or seeds obtained from randomly selected native trees and shrubs occurring locally within Orange County or eastern Los Angeles County. Any replacement tree/shrub stock, which cannot be grown from cuttings or seeds, shall be obtained from a native plant nursery, be ant free and shall not be inoculated to prevent heart rot. If any materials must be obtained from other than onsite sources, the Project Biologist shall provide the County of Orange with a list of all such materials.

**Contract Growing**
Contract growing of all container plants shall be by a local experienced native plant nursery. Substitution of plant material at the time of planting depends solely upon the discretion of the Project Biologist. Any substitutions that are approved will be documented in the As-Built Plans.

**Container Plants**
One-gallon container stock, rosepots and liners shall be utilized for container stock production in order to develop vertical heterogeneity (strata). All plant materials will be inspected by the Project Biologist and approved as healthy, disease free and of proper size prior to planting. Overgrown, root-bound container stock will be rejected.

**Mycorrhizal Fungi**
Mycorrhizae are specialized fungi found on plant roots. A symbiotic relationship exists between plant roots and mycorrhizae wherein the plants benefit from the increased ability to take up nutrients and withstand drought when mycorrhizae are present. This relationship is essential to the growth rate, well-being, and longevity of native plant communities. Plant utilization of mycorrhizal fungi markedly increases the success of revegetation on disturbed or degraded lands.

All appropriate container-grown plants, except those known to be non-host species, shall be inoculated with mycorrhizal fungi prior to delivery to the job site.

**Plant Placement**
Container stock will be laid out in such a manner that mimics natural plant distribution (i.e., in clusters and islands) to emulate regional reference sites. The Project Biologist will monitor and confirm that trees and shrubs have been placed at the designed elevation relative to the water source supporting them, such as ground water. All plants shall be planted in randomly spaced, naturally clumped patterns. The average planting densities shall meet the criteria specified in Tables 11 and 12.

**Planting Method for Rose Pot and/or Liner Plant Stock**
Rose pot and/or liner plant stock will be placed in a hole measuring at least twice the diameter and depth of the container. The root structure will be examined and excess root material removed. The top of the rootball will be set slightly above finish grade. The planting hole will be backfilled with native soil. Fertilizer, watering basins, and mulch are not required for this planting method.

**Planting Method for Container Stock**
One-gallon container stock will be planted in a hole measuring at least twice the diameter of the container and twice the depth. Container stock will be thoroughly watered the day before planting. One teaspoon (0.3 oz.) of Osmocote 14-14-14 (or equal) will be placed one inch below the root zone and backfilled with native soil to proper planting depth. The container will be upended into the palm of the hand to avoid damage to the root structure and placed in the planting hole. The top of the root ball will be set one inch above finish grade. The planting hole will be backfilled with native soil.

A three-inch high, hand-compacted earth berm, approximately 36 inches in diameter, will then be constructed around each container plant. This watering basin will be maintained until the plants are no longer irrigated. Mulch will be applied as a top dressing, 2 to 3 inches thick, but must not come in contact with the stem of the plant. Container stock will be watered immediately after installation.

**Pruning and Staking**
There will be no pruning or staking of any vegetation. Diseased or insect-damaged foliage, if sufficient to require pruning, will serve as a benchmark for rejection of plant material.
A small amount of selective trimming of native species (e.g. willow, oak and sycamore) is allowed to prevent overspray of herbicide from reaching these branches. Native vegetation may only be trimmed; individual plants shall not be removed.

## D. Irrigation Plan

The Contractor shall provide irrigation for each mitigation site when natural moisture conditions are inadequate to ensure survival of plants. Irrigation can be provided for a period of at least three years from planting. Irrigation shall be phased out during the fall/winter of third year

unless unusually severe conditions threaten survival of plantings. All plants must survive and grow for at least two years without supplemental water for the restoration phase of the project to be eligible for acceptance by the County of Orange. Long-term irrigation may be incorporated into portions or all of the walnut and elderberry irrigation that would mimic natural rainfall during lower-than normal rainfall years.

Coarse mulch shall be placed around plantings to minimize water loss and discourage weed growth. Mulch shall be 3 to 4 inches deep and shall be placed in a minimum area 1.5 times the diameter of the drip line of the plant or 2 feet in diameter whichever is greater. The mulched area shall be maintained throughout the course of restoration, unless otherwise authorized in writing by the County of Orange. Mulch shall not be placed directly against the main stem of the plants.

Supplemental irrigation is to be used solely for the purpose of establishing the plants at the mitigation site and is of a temporary nature, with the caveat that supplemental irrigation may be applied during years of lower-than normal rainfall. The goal of the irrigation program is to obtain germination and growth with the least amount of irrigation. Frequent irrigation encourages weed invasion and leaches nutrients from the soil. Long-term, the use of supplemental irrigation is intended to provide subsidies during lower-than average rainfall.

The mitigation sites will be initially supported by a short-term automatic irrigation system as well as from existing water sources. Drip irrigation may be provided for trees and shrubs planted on the slopes. The container stock will be irrigated as long as necessary to establish the root systems in the native soils, probably two or three summers. The main line will be installed below-grade. All lateral lines will be installed above-grade for ease of removal and inspection. Alternatively, lateral lines may be installed below-grade at the discretion of the applicant.

The critical period for irrigation is during the first winter and early spring following planting. During this time, roots are not well established and an unseasonable drought can cause high mortality. During dry periods after plant installation, the Project Biologist, Landscape Contractor and/or the maintenance contractor will regularly inspect soil moisture. Watering during the summer dry season will occur as frequently as required. Long-term, irrigation within areas subject to fire-prone vegetation removal will be used to mimic normal conditions, especially during dry years or periods of protracted low rainfall.

## E. As-Built Conditions

Once the implementation of the mitigation site has been completed, the Applicant will submit "As-Built" drawings to the County of Orange within 45 days after completion of construction. The drawings will identify the date installation was completed and if there were any deviations from the approved Mitigation Plan.

## V. MAINTENANCE ACTIVITIES DURING THE MONITORING PERIOD

### A. Maintenance Activities

The purpose of this program is to ensure the success of the mitigation plantings. Maintenance will occur over the five-year life of the project. The Project Biologist will monitor all aspects of the revegetation in an effort to detect any problems at an early state. Potential problems could arise from irrigation failure, erosion, vandalism, competition from weeds and invasive species, and unacceptable levels of disease and predation.

These maintenance guidelines are specifically tailored for native plant establishment. The maintenance personnel will be fully informed regarding the habitat establishment program so they understand the goals of the effort and the maintenance requirements. A landscape contractor with experience and knowledge in native plant habitat restoration will supervise all maintenance personnel.

For a period of 120 days following completion of the planting installation, the initial landscape contractor will be responsible for the care of the plantings. The purpose of the 120-day establishment period is to ensure continuity between the installation of the plant material and its short-term maintenance. The contractor's presence during this period is proven to increase project success. The contractor will control the spread of weed species and identify any efforts necessary to ensure the health and survival of the plantings.

Following the 120-day establishment period the project will be evaluated for health of plant material, and if judged satisfactory by the Project Biologist, the establishment period will be considered concluded and the long-term habitat maintenance program will begin. If plant health is not determined to be satisfactory, an additional 60 days will be allowed for the contractor to implement remedial measures. A different landscape contractor may implement this period of maintenance; however, the Project Biologist will continue to review the project's success.

Damage to plants, irrigation systems, and other facilities occurring as a result of unusual weather or vandalism will be repaired or replaced immediately.

**General Maintenance**
The Contractor will perform the following tasks as general maintenance duties:

- Plant Inspection;
- Weed control;
- Irrigation water volume and frequency;
- General maintenance of irrigation system;
- Trash and debris removal;
- Pest control; and
- Plant replacement.

**Plant Inspection**
After termination of the establishment period, the Project Biologist will inspect the mitigation site on a monthly basis for 18 months, inclusively. The plants shall be inspected on a quarterly basis thereafter until achievement of performance standards for the mitigation sites.

**Weed Control**
The mitigation sites shall be maintained free of weeds during the monitoring period. Weed eradication will minimize competition that could prevent the establishment of native species. All maintenance personnel will be trained to distinguish weed species from native vegetation to ensure only weedy species are removed or sprayed with herbicide.

Removal shall be done at least twice annually during the spring/summer season, as needed, through the term of mitigation monitoring. As weeds become evident, they should be immediately removed by hand or controlled with an appropriate herbicide as determined by a licensed Pest Control Advisor (PCA). Weed debris shall be removed from the project area as accumulated and disposed of as permitted by law.

Weeds shall be manually removed before they can attain a height of three-inches (3") at intervals of not more than 30 days for the first two years of the project. All portions of the plant will be removed, including the roots. The Project Biologist shall direct the contractor regarding the selection of target weed species, their location, and the timing of weed control operations to ensure that native plants are avoided to the extent possible. Pulled weeds will be placed on a "mantilla" or other type of tarp to prevent the seeds from coming in contact with the ground.

A cleared space, 18 inches from the base of the plant, will be maintained around each container plant to minimize competition from other plant species. Mulch, two-inches thick within the watering basin, will be maintained throughout the monitoring period. Leaf and branch drop, and organic debris of native species, shall be left in place.

**Irrigation Water Volume and Frequency**
The Contractor shall be responsible for applying sufficient irrigation water to adequately establish new plant materials, and germinate and establish the applied seed. Irrigation water shall be applied in such a way as to encourage deep root growth (periodic deep irrigation versus frequent light irrigation). The Contractor will allow soil to dry down to approximately 50- to 60-percent of field capacity (in the top six or 10 inches after germination and during seedling establishment) before the next irrigation cycle. Wetting of the full root zone and drying of the soil between irrigation events is essential to the maintenance of the plants and the promotion of a deep root zone that will support the vegetation in the years after establishment. Systems may need to be on for as long as six to eight hours at a time in order to get complete water penetration to the lower soil horizons to encourage deep root growth. A soil probe or shovel shall be used to examine soil moisture and rooting depth directly. Irrigation following the initial five-year monitoring and maintenance period is discussed below under long-term irrigation.

**General Maintenance of Irrigation System**
The Contractor will be responsible for the regular maintenance and repair of all aspects of the irrigation system. Poorly functioning or non-functioning parts shall be replaced immediately so as to not endanger the plantings.

General system checks shall be conducted no less than weekly for the first month after installation to assure the system is functioning correctly, and monthly thereafter, except during periods when the irrigation system is not in operation as recommended by the Project Biologist.

Any erosion or slippage of soil caused by the contractor's inadequate maintenance or operation of irrigation facilities shall be repaired by the contractor at his/her expense.

**Trash and Debris Removal**
The mitigation site shall be well maintained in order to deter vandalism and dumping of trash. The Contractor is responsible for avoiding impacts to plantings during trash removal activities. Contractor shall, during daily routine maintenance, manually remove weeds, liter, trash, and debris from the mitigation site and dispose of off-site as permitted by law. Dead limbs and tree fall shall be left in place in the revegetation areas.

**Pest Control**
Young trees and shrubs will be monitored for signs of disease, insect and/or predator damage, and treated as necessary. Badly damaged plants will be pruned to prevent spreading of the pestilence or replaced in kind if removed. Excessive foraging by predators may necessitate protective screening around plants and/or poison baiting of the predators. The Project Biologist will be consulted on any pest control measures to be implemented.

The Contractor shall be responsible for maintaining a non-native rodent-free project. All measures to eradicate non-native rodents must be as directed by a licensed pest control consultant.

**Plant Replacement**
The installation contractor will be responsible for replacing all container stock plants terminally diseased or dead during the establishment period. The long-term maintenance contractor will thereafter replace all dead and/or declining plants in the winter months as recommended by the Project Biologist. Replacement plants shall be furnished and planted by the Contractor.

Replacement plants shall conform to the species, size requirements, and spacing as specified for the plants being replaced. The replacement plants shall be purchased from inventory at the same native plant nursery as were the contract-grown plant stock.

**Fertilization**
If nutrient deficiencies are observed during site monitoring, the Project Biologist may specify applications of slow-release pellet fertilizer or soil amendments to speed initial growth or as a remedial measure. These applications shall occur at the onset of the rainy season following the manufacturer's recommendations. Fertilizer will not be applied other than under the direction of the Project Biologist.

**Pruning**
No pruning is necessary unless otherwise specified by the Project Biologist. Dead wood shall be left on trees or where it has fallen as it plays an important role in habitat creation and soil formation. A small amount of selective trimming of native species is allowed to prevent overspray of herbicide from reaching these branches. Native vegetation may only be trimmed; individual plants shall not be removed.

**Staking of Trees**
Staking of trees is to be avoided unless determined necessary by the Project Biologist. All stakes shall be removed before the completion of the five-year monitoring period, or earlier as determined by the Project Biologist. All stakes shall be removed by the contractor and disposed of off-site in a legal manner.

## B. Responsible Parties

The Applicant/Permittee will be responsible for financing and carrying out maintenance activities.

Applicant/Permittee: Yorba Linda Estates, LLC
7114 East Stetson, Suite 350
Scottsdale, Arizona 85251
Contact: Douglas G. Wymore

## C. Maintenance Schedule

The mitigation maintenance and monitoring program will begin prior to or concurrent with the construction process and continue for five years following the completion of plant installation or until performance criteria are met. Table 14 below indicates the schedule of maintenance inspections.

| TABLE 14<br>MAINTENANCE SCHEDULE | | | | | |
|---|---|---|---|---|---|
| **Maintenance Task** | **Year** | | | | |
| | 1 | 2 | 3 | 4 | 5 |
| Plant Inspection | Monthly first 12 months | Monthly through 18th month; quarterly thereafter | Quarterly | Quarterly | Quarterly |
| Irrigation System Inspection | Monthly, or more frequently if required | Monthly | As Required | N/A | N/A |
| Trash and Debris Removal | Monthly | Quarterly | Quarterly | Quarterly | Quarterly |
| Weed Control | Minimum of Monthly | Monthly | Quarterly | Quarterly | Quarterly |
| Pest Control | Monthly | Bi-monthly | Quarterly | Quarterly | Quarterly |
| Plant Replacement | Annually | Annually | Annually | Annually | Annually |
| Fertilization (if necessary) | Annually | Annually | N/A | N/A | N/A |

## VI. MONITORING PLAN FOR THE COMPENSATORY MITIGATION SITES

### A. Performance Standards for Target Dates and Success Criteria

Performance Standards are based on the stated goals of the program and the design of the mitigation site.

It should be noted that Blue Mud Canyon is not fully characteristic on the site for floral species composition, even relative to the other drainages within the study area, and as such no appropriate reference site is available for comparison.

All plantings shall have a minimum of 80-percent survival, by species, the first year and 100-percent survival thereafter and/or shall attain -percent cover after 3 years and 90-percent cover after 5 years for the life of the project. Prior to the mitigation site(s) being determined successful, they shall be entirely without supplemental irrigation for a minimum of 2 years. Throughout the monitoring period, no single species shall constitute more than 50-percent of the vegetative cover, no woody invasive species shall be present, and herbaceous invasive species shall not exceed 5-percent. If the survival and cover requirements have not been met, the Contractor is responsible for replacement planting to achieve these requirements. Replacement plants shall be monitored with the same survival and growth requirements for 5 years after planting.

## 1. Monitoring Plan for California Walnut Woodland and Blue Elderberry Woodland Mitigation Sites

**First-Year Monitoring**

Success Standard: A minimum of 20-percent coverage by native species;
100-percent of proposed canopy species present;
30-percent of proposed understory present
No greater than 50-percent coverage by non-native species.

**Second-Year Monitoring**

Success Standard: A minimum of 30-percent coverage by native species;
100-percent of proposed canopy species present
40-percent of proposed understory present
No greater than 25- percent coverage by non-native species.

**Third-Year Monitoring**

Success Standard: A minimum of 40-percent coverage by native species;
100-percent of proposed canopy species present
50-percent of proposed understory present
No greater than 15- percent coverage by non-native species;

**Fourth-Year Monitoring**

Success Standard: A minimum of 55-percent coverage by native species;
100-percent of proposed canopy species present
60-percent of proposed understory present
No greater than 10- percent coverage by non-native species;

**Fifth-Year Monitoring**

Success Standard: A minimum of 70-percent coverage by native species;
100-percent of proposed canopy species present
80-percent of proposed understory present
No greater than 5- percent coverage by non-native species with zero tolerance for species considered highly invasive by Cal-IPC.

**Diversity of Vegetation**

To avoid a monoculture or limited species diversity within the established habitat, a minimum of six species native to the target habitat types must represent 0.5-percent (each) of the total vegetational composition within the revegetation areas, with no single species representing over 75-percent composition. The low percentage representation is due to the expectation that this diversity will be provided by native herbs that would not normally represent a significant percentage of total vegetation cover in a mature habitat. In addition, the total percent composition of all non-native species cannot exceed 5-percent.

**Survivorship of Container Stock**
During annual quantitative monitoring, the Project Biologist shall determine survivorship of tree, shrub, and herb strata container stock. In each year of monitoring, container stock survivorship must be at least 80-percent.

**Functionality as Wildlife Habitat**
While conducting qualitative surveys, the Project Biologist will record wildlife observations within the revegetated habitat. The development of quantitative measures for wildlife use is not necessary for this mitigation site, but general impressions of wildlife usage of any restoration area should be considered among the success criteria.

**Native Plant Recruitment**
Evidence of native plant recruitment from year to year is another example of the successful creation of a functional, self-sustaining habitat. Noted recruitment would be considered a satisfied success criterion. Fire prone species will be removed annually, while still in the seedling or sapling state.

**Probability of Continued Habitat Progression**
The qualitative monitoring will provide the Project Biologist with an opportunity to evaluate the progression of the revegetation sites towards maturity. This determination will be used to support a final decision as to whether the revegetation effort has been successful. If several of the above criteria have not been met, but the site is clearly nearing satisfaction of those criteria, the Project Biologist may suggest that the County of Orange accept the mitigation as completed based on his/her conclusion of continuing habitat progression.

## B. Monitoring Methods

Monitoring will assess the attainment of annual and final success criteria and identify the need to implement contingency measures in the event of failure. Monitoring methods include an annual tally of dead and/or declining plant stock, and visual estimates of cover as well as field sampling techniques that are based in accordance with the methodology developed by the California Native Plant Society (CNPS).[4] Please refer to *A Manual of California Vegetation* for further details on this sampling method.

**Sampling Techniques For Vegetation Cover and Diversity**
Percent canopy cover of the mitigation plantings will be measured by using the point-intercept sampling method centered in a 2-meter by 50-meter plot. At each 0.5-meter interval along each transect (beginning at the 50-cm mark and ending at 50-meter), a point is projected vertically into the vegetation. Each plant species intercepted by a point is recorded, providing a tally of hits for each species in the herbaceous, shrub, and tree canopies, making it possible to record more than 100 hits in any 50-meter transect. Percent cover for each species, according to vegetation layer (herb, shrub, and tree) can be calculated from these data. A list of all additional species within the 250 square-meter belt is subsequently made.

[4] Sawyer, John O. and Todd Keeler-Wolf. 1995. *A Manual of California Vegetation*. California Native Plant Society.

Two 2-meter by 50-meter long transects per acre will be used to monitor the development of the revegetation. The various transects will be randomly located for the first sampling event and permanently marked to facilitate their use in subsequent years. A sample of a proposed transect data sheet is provided in Appendix B.

**Photo-Documentation**

Permanent stations for photo-documentation will be established during the first annual monitoring event. Photos shall be taken each monitoring period from the same vantage point and in the same direction each year, and shall reflect material discussed in the annual monitoring report. Qualified habitat restoration specialists, biologists, or horticulturists with appropriate credentials and experience in native habitat restoration shall perform monitoring. Continuity within the personnel and methodology of monitoring shall be maintained insofar as possible to ensure comparable assessments.

## C. Monitoring Schedule

### Qualitative Monitoring

The Project Biologist will conduct qualitative monitoring surveys on a monthly basis for the first 18 months, and quarterly thereafter until performance standards are met. Qualitative surveys, consisting of a general site walkover and habitat characterization, will be completed during each monitoring visit. General observations, such as fitness and health of the planted species, pest problems, weed establishment, mortality, and drought stress, will be noted in each site walkover. The Project Biologist will also note observations on wildlife use and native plant recruitment for the purpose of later discussion in the annual reports. Records will be kept of mortality and other problems such as insect damage, weed infestation, and soil loss. The Project Biologist will determine remedial measures necessary to facilitate compliance with performance standards. All remedial measures undertaken will be referenced in the annual monitoring report to the County of Orange.

## D. Annual Monitoring Reports

An annual report shall be submitted to the County of Orange. Photos from designated photo stations shall be included.

The Project Biologist or other qualified wildlife biologist shall survey the mitigation site to monitor the recovery of wildlife and aquatic resources in the area following construction. Monitoring of wildlife and aquatic resources shall be done in summer and winter of each year, through the term of mitigation monitoring, and the results and analysis shall be submitted with the report specified above.

At the end of each of the five monitoring period growing seasons, for the duration of the monitoring period, an annual report will be prepared for submittal to the County of Orange. Since planting may not occur when planned, monitoring shall be tied to the actual implementation date (e.g., the first

annual report shall be delivered on January 1st of the year following the first growing season after planting). These reports shall include the survival, percent cover, and height by species of both trees and shrubs, the number by species of plants replaced, an overview of the revegetation and exotic plant control efforts, and the method used to assess these parameters shall also be included. These reports will assess both attainment of yearly target success criteria and progress toward final success criteria. These reports will also include the following:

- A list of names, titles, and companies of all persons who prepared the content of the annual report and participated in monitoring activities for that year;
- A vicinity map indicating location of the mitigation site;
- A mitigation site map identifying habitat types, transect locations, photo station locations, etc. as appropriate;
- Copies of all monitoring photographs;
- Copies of all completed field data sheets; and
- An analysis of all qualitative and quantitative monitoring data.

## VII. COMPLETION OF COMPENSATORY MITIGATION

### A. Notification of Completion

The Contractor should notify the Applicant/Permittee and the County of Orange in writing when the monitoring period is complete and the success criteria have been met.

### B. Final Success Criteria Resolution

If the project meets all success criteria at the end of the five-year monitoring period, the revegetation will be considered a success. If not, the maintenance and monitoring program will be extended one full year at a time, and a specific set of remedial measures approved by the County of Orange will be implemented until the standards are met. Only those areas that fail to meet the success criteria will require additional monitoring. This process will continue until all year-five standards are met or until the County of Orange determines that other revegetation measures are appropriate.

Final success criteria will not be considered to have been met until a minimum of three years after all human support, including artificial irrigation, has ceased. Should the revegetation effort meet all goals prior to the end of the five-year monitoring period, the County of Orange, at their discretion, may terminate the monitoring effort and release the bond. At that time the Applicant/Permittee will be released from further maintenance and monitoring requirements of the mitigation area.

If, during the monitoring period, a destructive natural occurrence does occur which damages or destroys the mitigation planting, and if the mitigation planting was documented to have been proceeding well toward establishment, then reconstruction and replanting will not be required.

However, if the mitigation site fares significantly worse than the surrounding natural communities in this same natural disaster, then the mitigation site would be considered to have not established itself, and reconstruction, replanting, and monitoring would continue.

### C. Agency Confirmation

Following receipt of the final annual monitoring report, the County of Orange will contact the Applicant as soon as possible to schedule a site visit to confirm the completion of the compensatory mitigation effort and any jurisdictional delineation. The compensatory mitigation will not be considered complete without an onsite inspection by a County of Orange project manager and written confirmation that approved success criteria have been achieved.

It is therefore critical that agency staff review annual reports on a timely basis and provide comments throughout the maintenance and monitoring program so that any project deficiencies they note can be addressed prior to the expected end of the program.

## VIII. CONTINGENCY MEASURES

### A. Initiating Procedures

If a performance standard is not met for all or any portion of the mitigation project in any year, or if the approved success criteria are not met, the Project Biologist will prepare an analysis of the cause(s) of failure and, if determined necessary by the County of Orange, propose remedial actions for approval. If the compensatory mitigation site has not met one or more of the success criteria or performance standards, the responsible party's maintenance and monitoring obligations shall continue until the County of Orange gives final approval the mitigation obligations have been satisfied. It is therefore incumbent upon the Project Biologist to foresee project deficiencies as part of the monitoring program and take appropriate steps to address the situation.

### B. Alternative Locations for Contingency Mitigation

Sufficient area for establishment of the mitigation site is available so alternative locations would be unnecessary. Although this plan is expected to be successful, both onsite and off-site alternative locations may be used in the event that revegetation cannot be achieved.

### C. Funding Mechanism

The Applicant/Permittee will fund planning, implementation, maintenance and monitoring of any contingency measures that may be required to achieve mitigation goals through an up-front payment to the Contractor. Thereafter, all expenses in implementing this mitigation plan are to be borne by the Contractor.

## D. Responsible Parties

The Applicant/Permittee will be responsible for implementing, maintaining, and monitoring any contingency procedures.

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# IX. LONG-TERM MANAGEMENT AND MAINTENANCE

Following successful completion of the five-year monitoring and maintenance period, the mitigation area would be subject to the long-term monitoring and maintenance provisions set forth below. The goal of the long-term management and maintenance is two-fold: to manage the area for long-term habitat goals, specifically the long-term health and function of the California walnut woodland and blue elderberry woodland, while also managing the area for public safety. These two goals are not in conflict; rather, it implemented correctly, the two goals can be complementary such that both goals are achieved.

## A. Responsible Parties

The Homeowner's Association (HOA) will be responsible for implementation of the long-term maintenance and monitoring for the California walnut woodland and blue elderberry woodland mitigation areas.

## B. Baseline Conditions

The Baseline conditions for the long-term management will be established by the fifth and final monitoring report submitted to the County of Orange that documents compliance with the five-year monitoring requirements set forth above. The final composition of the target native communities established as part of the five-year monitoring and maintenance program, will likely vary in some ways from the proposed plan as individual recruitment of acceptable natives will occur in conjunction with loss of other target species. It is expected that the general character of the community will not change from what is established and deemed successful at the end of the five-year monitoring period.

As such, the goals of the long-term monitoring program are fairly simple:

- To maintain the levels of weed species recorded at the end of the five-year monitoring and maintenance period;

- To maintain overall vegetative cover to 70-percent or if greater than 30-percent, no more than 70-percent cover by non-cactus species;

- To maintain the levels of fire-prone species to acceptable levels;

- To maintain adequate moisture in the vegetation through the use of supplemental irrigation that would be used during periods of drought or protracted periods of low rainfall.

Each of these is addressed below.

### 1. Maintenance of Non-Native Weeds

Twice annually, the site would be inspected by a Biologist or Landscape Contactor experienced in the native and non-native species expected on the site. The initial inspections should be conducted about one month following the first significant rainfall of the season, to determine which common non-native species including grasses and forbs have germinated and will require maintenance to maintain at levels of ten-percent or less absolute cover. The weed removal would be timed to remove non-native weeds when they can be accurately identified but prior to seed set, to limit future weed problems. A later season visit would be timed to identify later season weeds such as summer mustard and would generally occur in March or April with weeding to follow accordingly. Following the second weeding session, absolute weed cover would be no more than ten-percent absolute cover.

### 2. Maintain Absolute Native Cover at 70-Percent

In order to provide for public safety, absolute cover by native species will be maintain at 70-percent cover or, if no more than 70-percent of non-cactus species. Where necessary to maintain absolute cover at no more than 70-percent of non-cactus species, plants will be removed following the following protocol:

In order to retain species diversity no more than 10-percent of any singles species would be removed. Limited numbers of small shrubs such as coast goldenbush, coyote bush, bush monkey flower would be removed first, followed by larger shrubs such as laurel sumac or toyon. In all cases, the species with the greatest representation would be removed first so as to ensure species diversity. California walnuts, blue elderberries and coast live oaks will not be removed unless diseased or determined to be a threat to public safety by the Orange County Fire Authority (OCFA), and then only those that are diseased or pose a threat to public safety will be removed. As noted, as the cactus expands, greater than 70-percent cover may be achieved and vegetation removal will be such than non-cactus shrubs do not exceed 70-percent absolute cover.

### 3. Removal of "Fire-Prone" Species

Fire-prone species, as listed on OCFA's website, will be removed on an annual basis at either the seedling or sapling stage.

### 4. Irrigation for Long-Term Management

Irrigation may be used for long-term management of the mitigation areas to ensure the following: maintain plant moisture at acceptable levels during periods of below-average rainfall which would be determined as less than average during any two-month period. When such deficits occur, irrigation may be applied to mimic normal conditions. Excessive irrigation is not allowed (defined as more than 125-percent of normal rainfall) for any two month period.

## C. Funding

Funding for the long-term management is based on the assumptions set forth above and will be determined through preparation of the Property Analysis Record below.

## X. PAR ASSUMPTIONS FOR LONG-TERM IMPLEMENTATION OF HABITAT RESTORATION INCLUDING WITHIN SPECIAL MAINTENANCE AREAS

The following assumptions were made during preparation of this Property Analysis Record (PAR):

- **Restoration Areas:** The Restoration Areas addressed in this PAR consist of:

    1. Riparian Habitat Restoration Area within and immediately adjacent to Blue Mud Canyon Creek that includes restoration of coast live oak riparian forest, mulefat scrub, California walnut/mulefat scrub and southern willow scrub.
    2. California walnut woodland and blue elderberry woodland within the Blue Mud Canyon environs and on the south-facing slope above Drainage D at the northwest corner of Phase I of the project [see Exhibit 7].

- **Prior Maintenance:** Prior to initiation of long-term maintenance, the restoration areas will be planted, maintained, and monitored for a period of five years. During this period, vegetation within the subject maintenance areas within the subject restoration areas will be managed at the prescribed target vegetation cover as set forth in Sections 1 and 2 of the HMMP.

- **Responsible Party:** The Homeowner's Association (HOA) will be responsible for implementing the long-term management of the subject restoration areas.

- **Contingency Rate:** No contingency fee was added to the total cost of maintenance activities.

- **Capitalization Rate:** A capitalization rate of 4% was applied to this PAR to generate the endowment.

- **Habitat Maintenance:** As described in Part 2 of the HMMP, Section IX Long-Term Management and Maintenance, the following measures will comprise the long-term management and maintenance:

    - Twice-annual removal of non-native invasive species and other weeds from the riparian restoration area and the California walnut and blue elderberry woodland along with trash removal, which would occur during these visits;
    - Annual removal of fire-prone species from 10.2 acre area designated for removal of fire-prone species;
    - Annual maintenance to ensure public safety by maintaining non-cactus native cover at no more than 70-percent absolute cover within 10.2 acre area designated for removal of fire-prone species.
    - Annual maintenance of irrigation system.

These tasks will be carried out by the HOA in accordance with the HMMP and Conceptual Fuel Modification Plan. Vegetation maintenance will be done (a) with hand held tools consistent with best management practices; (b) outside of the avian nesting season, or if during the nesting season, only after a biological monitor confirms that there will be no effects to nesting birds; (c) in a manner that will not reduce or eliminate any plants that are planned for the area; and (d) in a manner that minimizes effect to either target species (e.g., least Bell's vireo) and to more common species that are protected under the Migratory Bird Treaty Act. Cut vegetation, if any, will be disposed of at an offsite facility and will not be chipped or dispersed of onsite. Vegetation maintenance could be performed up to two times per year, and the budget for this PAR assumes two visits for general weeding on one annual visit to remove fire-prone species and maintain non-cactus native scrub within the 10.2-acre area. The task incorporates maintenance of 20.11 acres per year at $300.00 per acre, for an annual cost of $6,033. The annual cost for fire-prone species removal and maintenance of the fire-prone vegetation removal areas at no more than 70-percent non-cactus species is $100 per acre or 1,031 per year for a total of $7,064. This assumption is adequate since the special maintenance areas will be densely planted with cactus and lower growing grasses, forbs, and shrubs, thereby reducing the opportunity for recruitment of invasive and "undesirable" species. At 4-percent return, an endowment of $176,560.

# Appendix A

**Distribution Page of all Persons/Agencies Receiving a Copy of the Mitigation and Monitoring Plan, As-Built Reports, and Annual Reports**

Jason Lambert
U.S. Army Corps of Engineers
Los Angeles District, Regulatory Branch
911 Wilshire Boulevard, 11th Floor
Los Angeles, California 90017-3401

Kevin Hupf
California Department of Fish & Wildlife
Environmental Scientist
3883 Ruffin Road
San Diego, California 92123

Glenn Robertson
Santa Ana Regional Water Quality Control Board
3737 Main Street, Suite 500
Riverside, California 92501-3339

Christine Medak
US Fish and Wildlife Service
Carlsbad FWO
6010 Hidden Valley Road, Suite 101
Carlsbad, California 92011

# Appendix B

## Samples of Monitoring Data Sheets

**TRANSECT/PERCENT COVER ESTIMATION** **Project Name: _____**
**Sheet ___ of ___** **Date: _____**
**Transect Number:** **Recorders: _____**
**Transect Length:**
**Readings/Transect:**
**Distance Between Readings:**
**Photostation Number:**
**Comments:**

**Bare/Vacant:**

**"Herb" Layer**
0 - 3'
Species Tally

**"Shrub" Layer**
>3' - 8'
Species Tally

**"Tree" Layer**
>8'
Species Tally

**Additional Species:**
(within 1.0 m of transect)

**MONITORING SHEET - QUALITATIVE EVALUATION**

**Project Name: _____**
**Date: _____**
**Recorders: _____**

**Plant Health - General**
Are there visible signs of nutrient/water deficiencies? If yes, then describe:

Are there signs of regeneration/reseeding?

Is vandalism harming plant health or project success?

Are there any signs of herbivory?:

Other:

**Container Stock**
Provide visual estimation percent survival of container stock:

Are watering basins intact?:

Is mulch from original installation still present? Is there litter development?:

**Seeded Species**
Are all intended native species present? If not, then what is missing?:

Are there any occurrences of volunteer native species?:

Are there any unvegetated areas? Should these be remediated?:

**Weeds**
Is excessive competition from weeds affecting desired species?:

Is there adequate maintenance/weed clearing?:

Other:

**Soils**
Are there any signs of soil development?:

Other:

**Irrigation System**
Are irrigation heads functioning properly?:

Are there any signs of rodent damage to irrigation system?:

Are there any signs of vandalism to the irrigation system/controller box?:

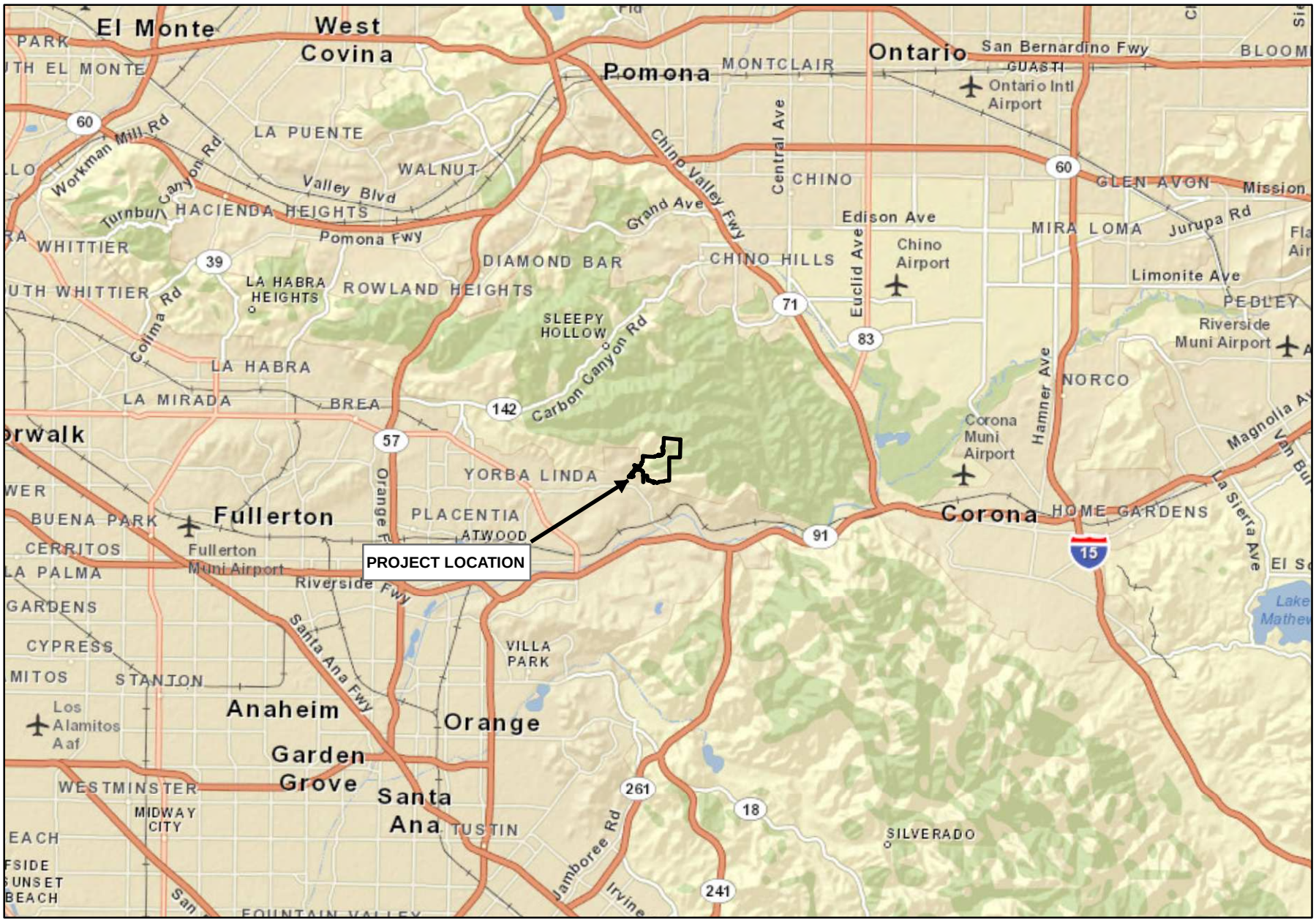
Are there any signs of excessive runoff?:

Does irrigation frequency and volume require adjustment?

Other:

**Is there any indication that wildlife is using the site?:**

**Recommendations for Remediation:**




Source: ESRI World Street Map

N

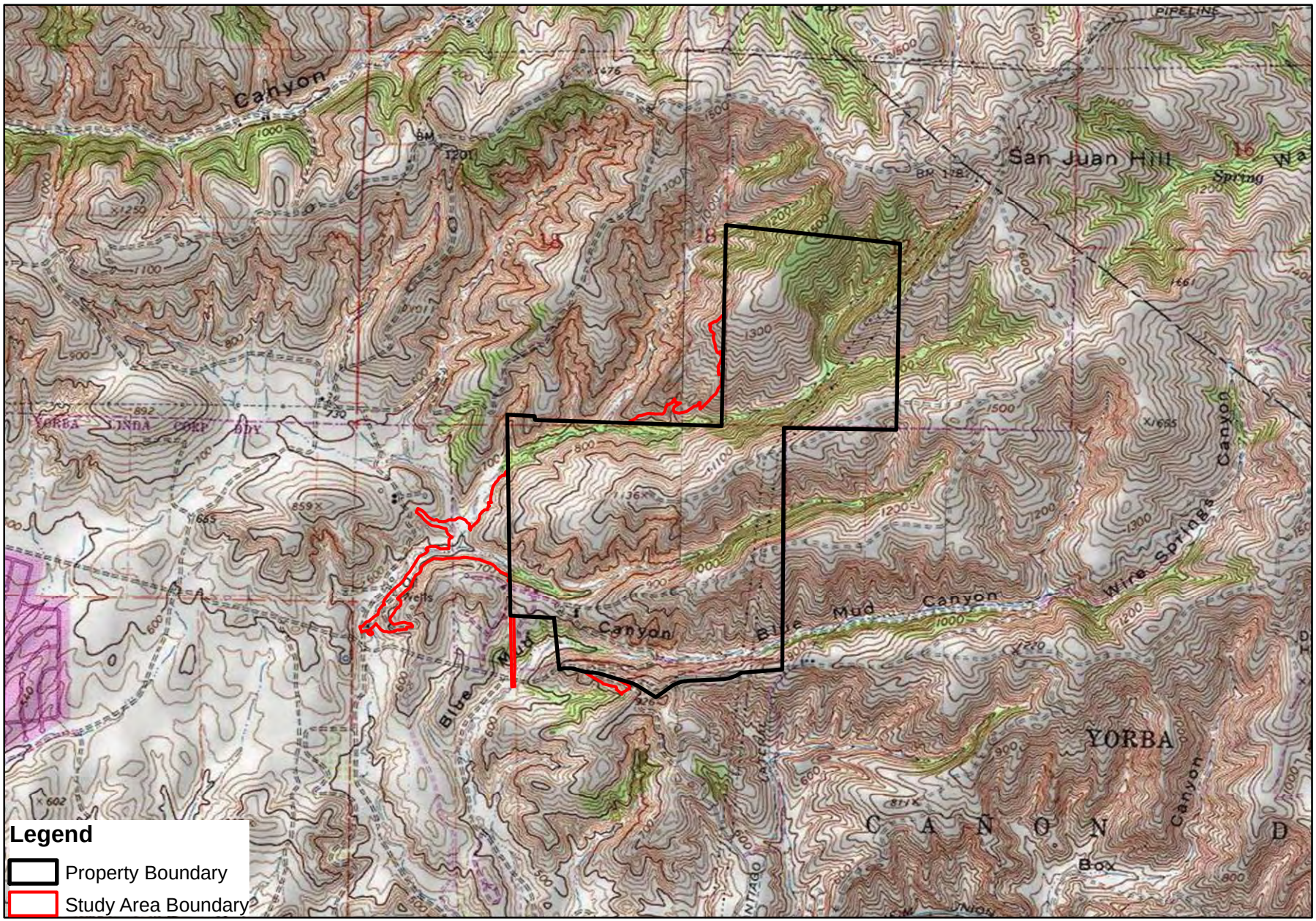
0 2 4 8 Miles

**ESPERANZA HILLS SPECIFIC PLAN AREA**

Regional Map

GLENN LUKOS ASSOCIATES

Exhibit 1




Adapted from USGS Prado Dam & Yorba Linda, CA quadrangles

N

0 1,000 2,000 4,000 Feet

**ESPERANZA HILLS SPECIFIC PLAN AREA**

Vicinity Map

GLENN LUKOS ASSOCIATES

Exhibit 2


## Legend

- Property Boundary
- Study Area Boundary
- Alternative 3 Project Footprint
- Corps Non-Wetland Waters
- Corps Wetland
- Width in Feet (W indicates wetland jurisdiction)

N

0 350 700 1,400

Feet

1 inch = 700 feet

Aerial Photo: ESRI Basemaps Bing Hybrid
Reference Elevation Datum: State Plane 6 NAD 83
Map Prepared by: K. Kartunen, GLA
Date Prepared: March 14, 2013

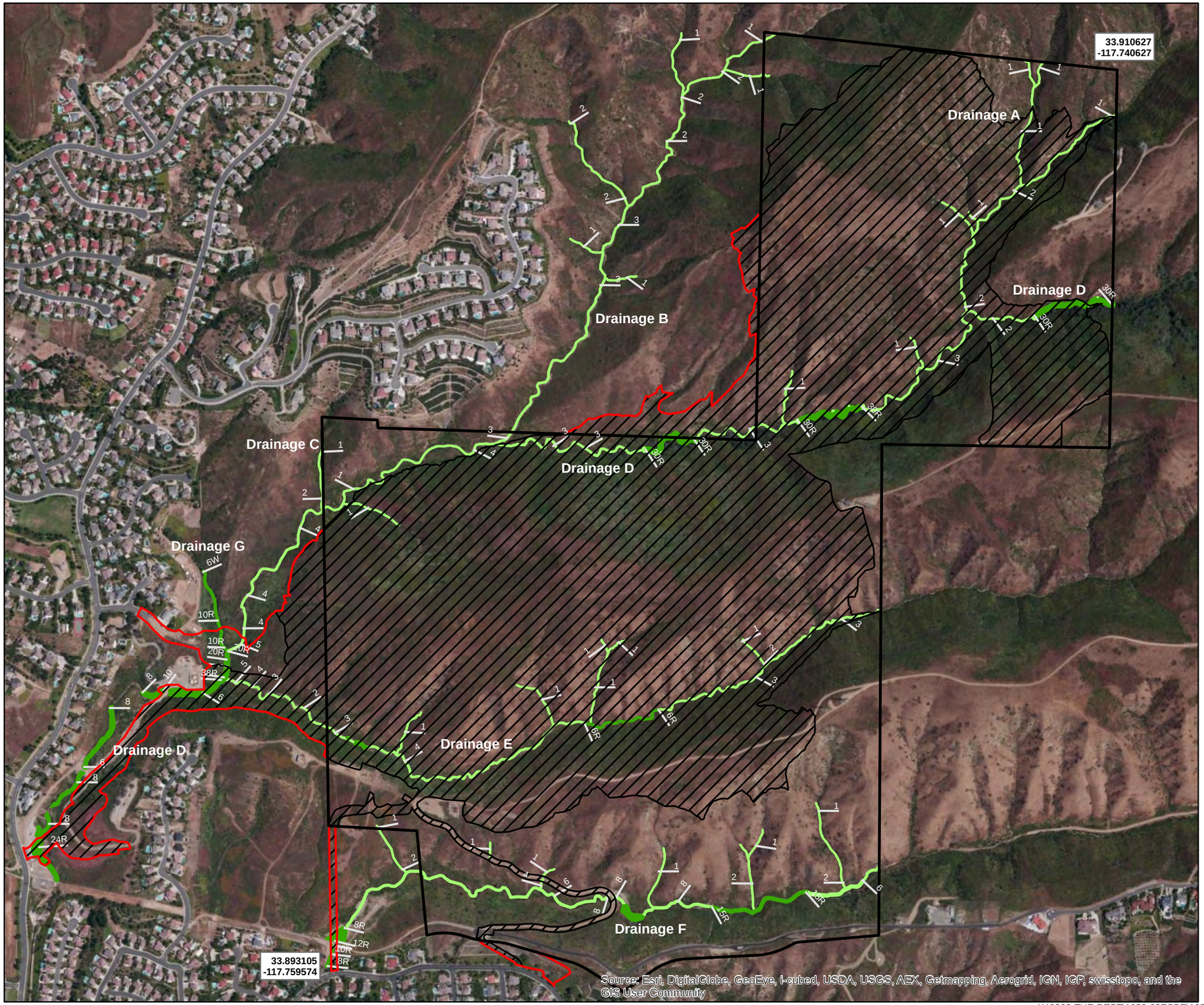
**ESPERANZA HILLS SPECIFIC PLAN AREA**

Corps Jurisdictional Delineation/Alternative 3 Impact Map

GLENN LUKOS ASSOCIATES

Exhibit 3A

X:\0363-THE REST\1050-02ESPE\1050-02_GIS FINAL_USE THIS FOLDER\ImpactsGIS\1050-2 CorpsAlternative3 05 10 13.mxd




## Legend

- Property Boundary
- Study Area Boundary
- Alternative 3 Project Footprint
- Width in Feet (R indicates riparian jurisdiction)
- CDFW Unvegetated Streambed
- CDFW Riparian

N

0 350 700 1,400

Feet

1 inch = 700 feet

Aerial Photo: ESRI Basemaps Bing Hybrid
Reference Elevation Datum: State Plane 6 NAD 83
Map Prepared by: K. Kartunen, GLA
Date Prepared: May 10, 2013

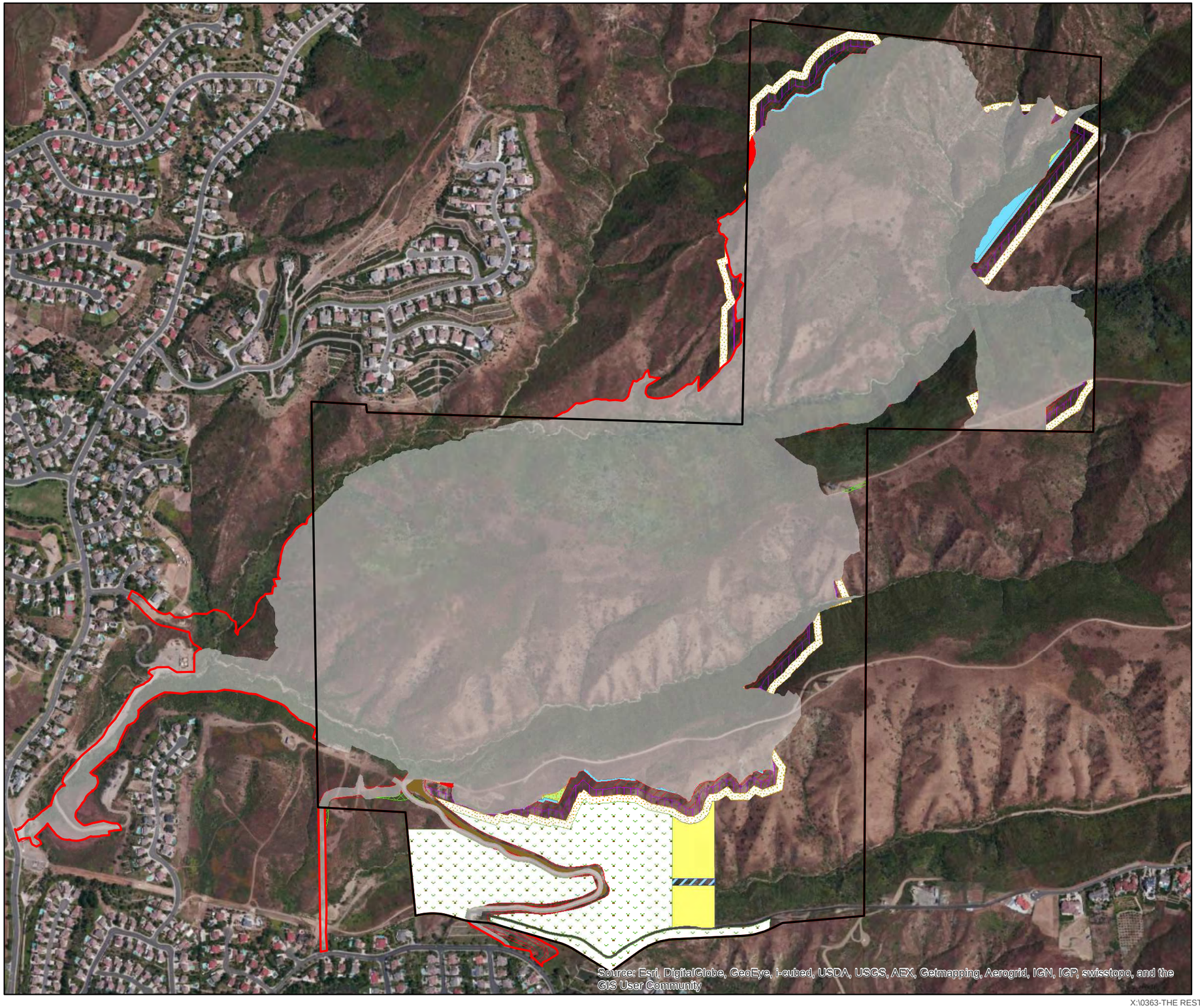
**ESPERANZA HILLS SPECIFIC PLAN AREA**

CDFW Jurisdictional Delineation/Alternative 3 Impact Map

GLENN LUKOS ASSOCIATES

Exhibit 3B

X:\0363-THE REST\1050-02ESPE\1050-02_GIS FINAL_USE THIS FOLDER\ImpactsGIS\1050-2 CDFWAlternative3 05 10 13.mxd




## Legend

- Property Boundary
- Study Area Boundary
- Alternative 3 Project Footprint
- 50' Irrigated Riparian Zone
- Street C
- Fire Prone Vegetation Removal Zone
- Fuel Break Zone
- Irrigated Landscape Slopes/Entry/Medians
- Parks
- Special Maintenance Area
- Zone A (Flat) - Non-Combustible Construction
- Zone B - Wet Zone (100% removal native shrubs)
- Zone C - Dry Zone (50% thinning native shrubs)
- Zone D - Dry Zone (30% thinning native shrubs)

N

0 350 700 1,400

Feet

1 inch = 700 feet

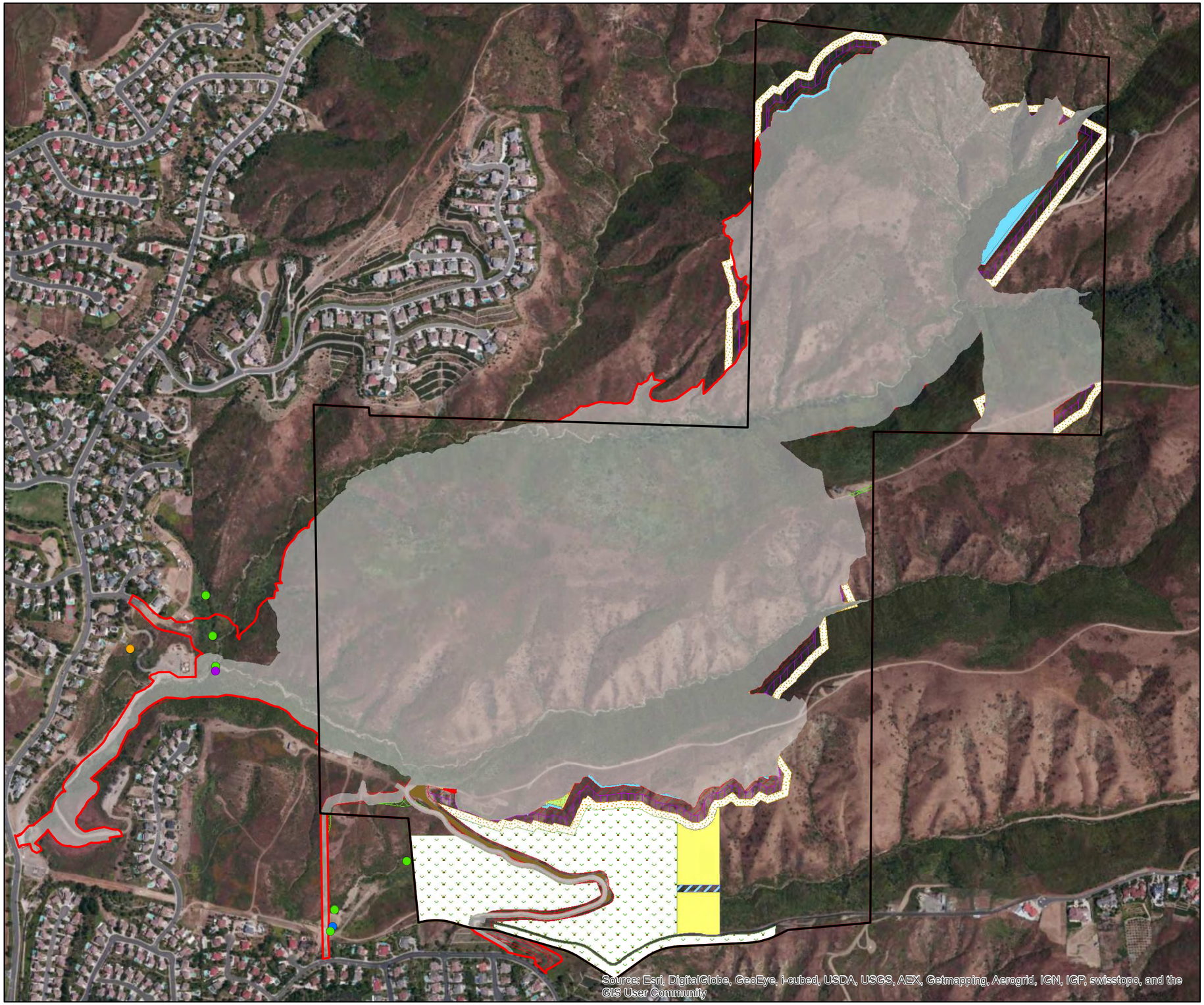
**ESPERANZA HILLS SPECIFIC PLAN AREA**

Project Grading Limits

GLENN LUKOS ASSOCIATES

Exhibit 4

X:\0363-THE REST\1050-02ESPE\1050-02_GIS FINAL_USE THIS FOLDER\ImpactsGIS\1050-2 Alternative3_FMZ Ex4.mxd




## Legend

- Property Boundary
- Study Area Boundary
- Alternative 3 Project Footprint
- 50' Irrigated Riparian Zone
- Street C
- Fire Prone Vegetation Removal Zone
- Fuel Break Zone
- Irrigated Landscape Slopes/Entry/Medians
- Parks
- Special Maintenance Area
- Zone A (Flat) - Non-Combustible Construction
- Zone B - Wet Zone (100% removal native shrubs)
- Zone C - Dry Zone (50% thinning native shrubs)
- Zone D - Dry Zone (30% thinning native shrubs)
- Least Bell's Vireo Observed by GLA on July 28, 2012
- Least Bell's Vireo Observed by GLA on June 1, 2010
- Least Bell's Vireo Nest - PCR Services Corporation 2012
- Least Bell's Vireo Observations - PCR Services Corporation 2012

N

0 350 700 1,400

Feet

1 inch = 700 feet

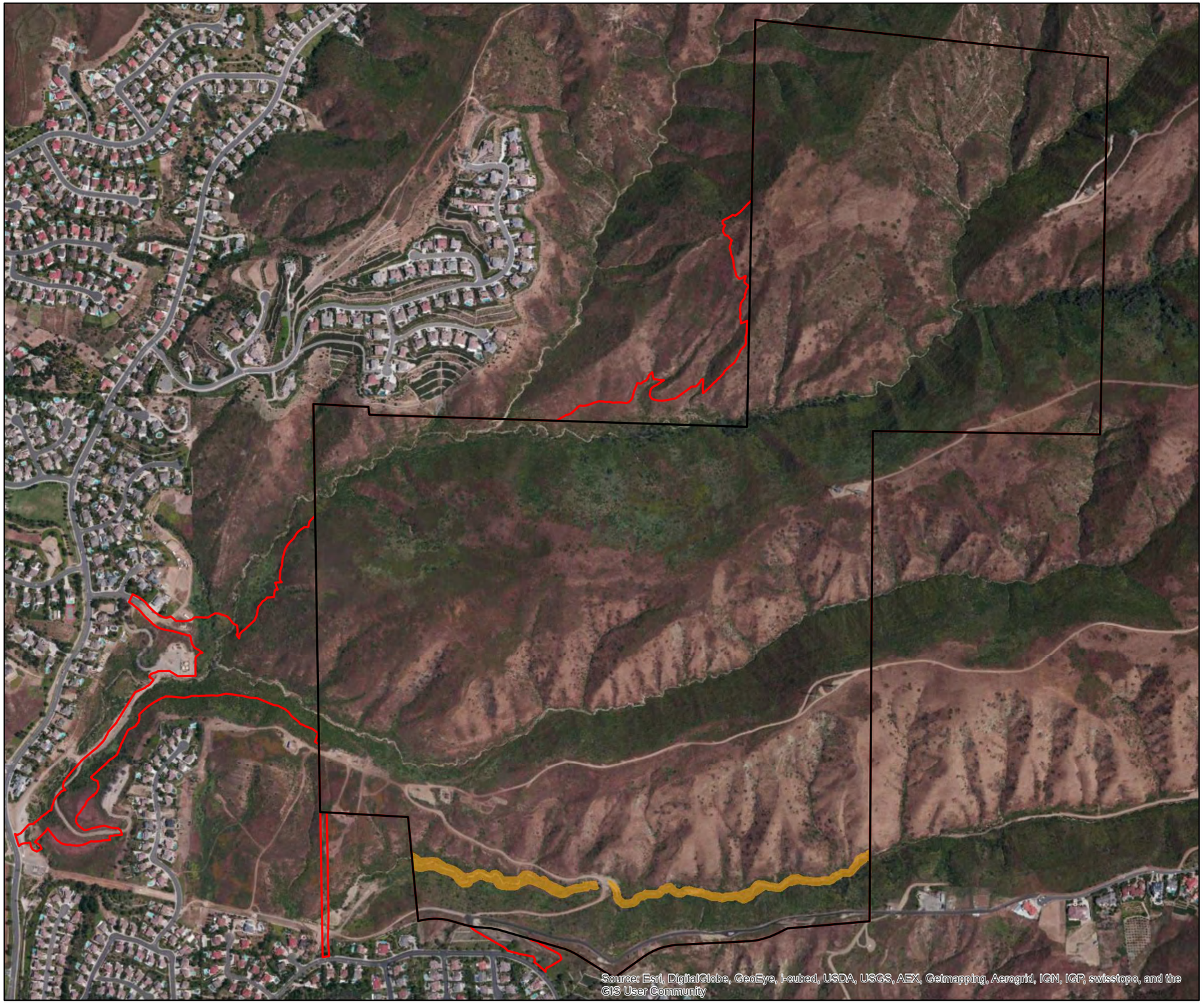
**ESPERANZA HILLS SPECIFIC PLAN AREA**

Least Bell's Vireo Impact Map

GLENN LUKOS ASSOCIATES

Exhibit 5

X:\0363-THE REST\1050-02ESPE\1050-02_GIS FINAL_USE THIS FOLDER\ImpactsGIS\1050-2 LBV Alternative3.mxd




## Legend

- Property Boundary
- Study Area Boundary
- Candidate Riparian Mitigation Area - 5.30 ac.

N

0 350 700 1,400

Feet

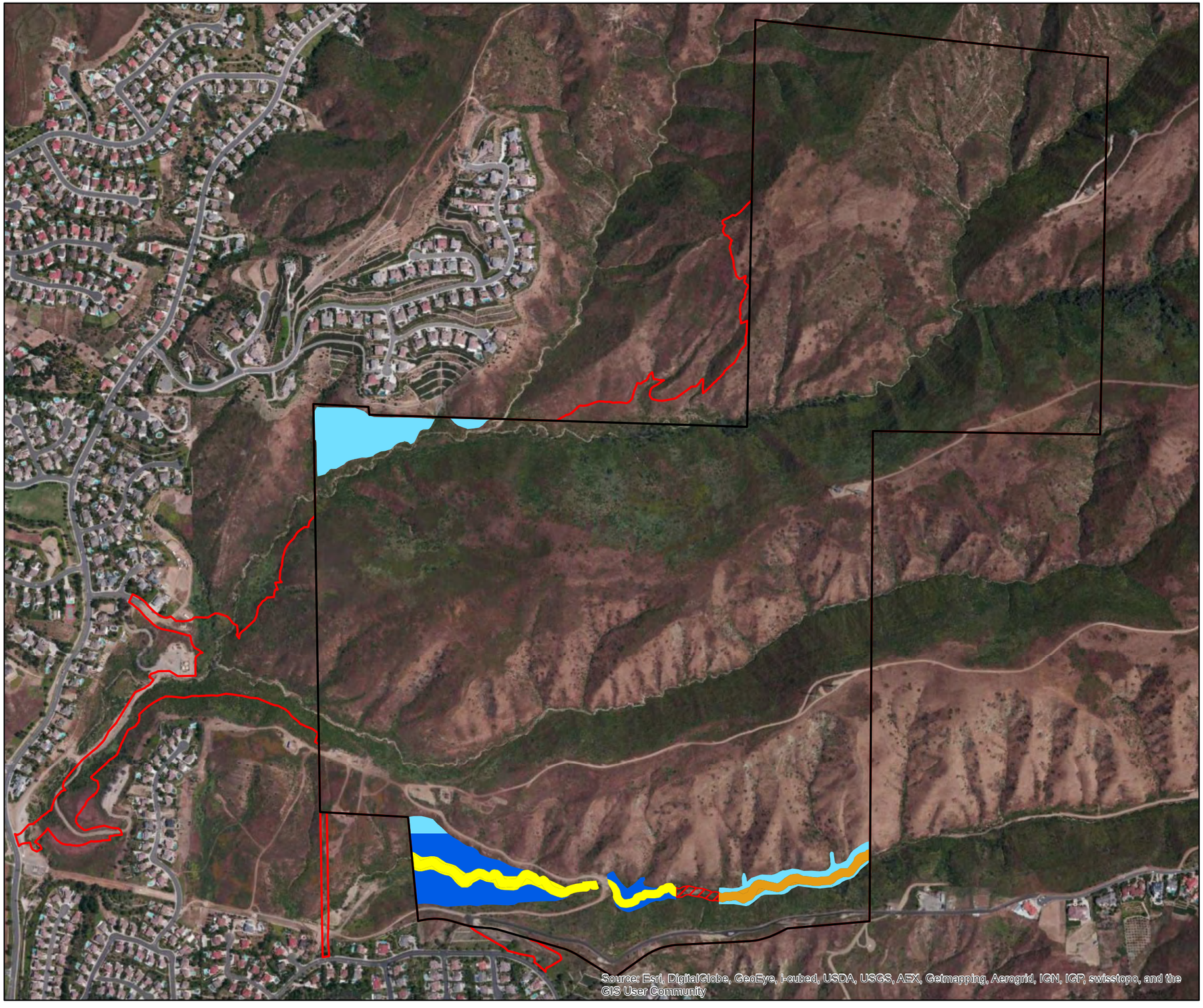
1 inch = 700 feet

**ESPERANZA HILLS SPECIFIC PLAN AREA**

Blue Mud Canyon Riparian Mitigation Areas

GLENN LUKOS ASSOCIATES

Exhibit 6




## Legend

- Property Boundary
- Study Area Boundary
- Candidate Elderberry/Walnut Mitigation Area (8.00 ac.)
- Candidate Elderberry/Walnut Mitigation Area - Fire Prone Vegetation Removal Zone (6.70 ac.)
- Candidate Ripiarian Mitigation Area (1.80 ac.)
- Candidate Ripiarian Mitigation Area - Fire Prone Vegetation Removal Zone (3.50 ac.)
- 50-Foot Irrigated Zone (0.43 ac.) (Not included as project mitigation)

N

0 350 700 1,400

Feet

1 inch = 700 feet

**ESPERANZA HILLS SPECIFIC PLAN AREA**

California Walnut Blue Elderberry Woodland Mitigation Areas

GLENN LUKOS ASSOCIATES

Exhibit 7

LINSCOTT LAW & GREENSPAN
engineers

**Engineers & Planners**
Traffic
Transportation
Parking

**Linscott, Law & Greenspan, Engineers**
2 Executive Circle
Suite 250
Irvine, CA 92614
**949.825.6175** T
949.825.6173 F
www.llgengineers.com

Pasadena
Irvine
San Diego
Woodland Hills

Providing Mobility Solutions for 50 YEARS 1966-2016

September 8, 2016

Mr. Douglas Wymore, Esq.
Yorba Linda Estates, LLC
7114 East Stetson Drive, Suite 350
Scottsdale, AZ 85251

LLG Reference: 2.12.3281.1

Subject: **Traffic Impact Evaluation of Modified Option 1 Site Plan for the Proposed Esperanza Hills Residential Project**
County of Orange, California

Dear Mr. Wymore:

As requested, Linscott, Law & Greenspan, Engineers (LLG) is pleased to submit the following Traffic Impact Evaluation of the Modified Option 1 Site Plan for the Proposed Esperanza Hills Residential Project located in unincorporated County of Orange. Based on the information provided, we understand that the access roadway into the Project site from Stonehaven Drive will be revised to include a bridge over Blue Mud Canyon, which will result in a straighter alignment compared to the approved Option 1 site plan. Given that the Modified Option 1 Project will not change the Project traffic generation forecast or Project distribution pattern, which includes Project traffic utilizing both Stonehaven Drive and Via del Agua to access Yorba Linda Boulevard, the findings in the approved Traffic Impact Analysis (TIA) Report (dated March 18, 2013), TIA Addendum (dated October 14, 2013), and Emergency (Fire) Evacuation Analysis (dated May 9, 2014) all prepared by LLG, remain applicable and has therefore been fully analyzed in the Environmental Impact report (EIR).

It does not result in any new significant environmental effects from a traffic standpoint, or affect any mitigation measures and does not change our previous conclusions or analysis. Therefore, no further analysis is required.

We appreciate the opportunity to submit this traffic impact evaluation for the proposed project. If you have any questions regarding this letter, please do not hesitate to call me at (949) 825-6175.

Sincerely,
**Linscott, Law & Greenspan, Engineers**

Keil D. Maberry, P.E.
Principal

Leopold
Natural Resource•Management•Planning

July 8, 2016

US Fish and Wildlife Service
2177 Salk Avenue, Ste. 250
Carlsbad, CA 92008
760•431•9440
Email: stacey_love@fws.gov

Attn: Ms. Stacey Love, Recovery Permit Coordinator

Subject: **REPORT TRANSMITTAL: COASTAL CALIFORNIA GNATCATCHER, FOCUSED SURVEY REPORT, CIELO VISTA RESIDENTIAL DEVELOPMENT, ORANGE COUNTY, CALIFORNIA - DATED JULY 2016**

Dear Ms. Love:

On July 3, 2016, Christine Harvey (TE-54716A-2) concluded presence/absence protocol surveys and a habitat assessment for coastal California gnatcatcher (*Polioptila californica californica*), Cielo Vista Project No. 38715, Orange County, California. Four California gnatcatchers were observed within 34.92 acres of suitable habitat on June 12, 2016 and subsequent surveys. Territory 1 was observed within the Project parcel but outside the Project footprint on June 12, 2016, June 19, 2016, June 26, 2016 and July 3, 2016. Territory 2 was observed within the Project parcel but outside the Project footprint on June 12, 2016 and June 26, 2016.

The following special status species were observed while conducting California gnatcatcher protocol surveys:

Nuttall's woodpecker was observed within the Project footprint the entire survey period.

Willow flycatcher was observed in southern willow scrub in the southeast portion of the Project footprint May 29, 2016.

Least Bell's vireo was observed within the project footprint in southern willow scrub in the southeast portion of the Project footprint on June 5, 2016, June 12, 2016, June 19, 2016, June 26, 2016 and July 3, 2016. Territory 1 pair was feeding, singing and scolding moving high to low in a south to north direction through the drainage. The male was observed defending territory, counter calling with an unmated male in adjacent Territory 2. Both territories utilize lush landscaped properties along the southern parcel boundary.

Yellow warbler was observed in southern willow scrub in the Project south buffer the entire survey period.

Yellow-breasted chat was observed within the project footprint in southern willow scrub near the Project footprint and another in southern willow scrub along the Project northwest buffer the entire survey period.

Southern California Rufous-crowned sparrow was observed at the Project southeast buffer and the Project northwest buffer on June 5, 2016, June 12, 2016, June 19, 2016, June 26, 2016 and July 3, 2016.

Leopold Biological Services
PO Box 421222
San Diego, CA 92142-1222

Telephone: 619•249•2531
Facsimile: 858•256•0871
Website: www.leopoldbiological.com

All observed special status species have been reported to the California Natural Diversity Database (CNDDB).

Avian activity and diversity was moderate and common avian species expected to occur within coastal sage scrub were observed on a regular basis. Brown-headed cowbirds, which are nest parasites to California gnatcatcher and other avian species, were not observed in the vicinity of the project footprint during the surveys.

Attached you will find the *Cielo Vista Coastal California Gnatcatcher Focused Survey Report* followed by a hard copy submitted via USPS on July 8, 2016.

Please feel free to contact Christine Harvey at 619•249•2531 or charvey@leopoldbiological.com with any questions.

Respectfully,

Christine Harvey
Principal/Consulting Biologist
TE-54716A-2

cc: Stacey_love@fws.gov
esther.burkett@wildlife.ca.gov

# Coastal California Gnatcatcher
# Focused Survey Report

## Sage Development Group
## Cielo Vista
## Orange County, California

*Prepared for:*

**Sage Development Group**
3 Corporate Plaza Drive, Suite 102
Newport Beach, California 92660
760•431•9440

*and*

**SWCA Environmental Consultants**
150 South Arroyo Parkway, 2nd Floor
Pasadena, California 91105
626•240•0587

*Prepared by:*

**Leopold Biological Services**
11160 Portobelo Drive
San Diego, CA 92124

*July 2016*

# Cielo Vista California Gnatcatcher
# Focused Survey Report

## TABLE OF CONTENTS



## LIST OF TABLES



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## LIST OF APPENDICES

## EXECUTIVE SUMMARY

On July 3, 2016, Christine Harvey (TE-54716A-2) concluded presence/absence protocol surveys and a habitat assessment for California gnatcatcher within the Cielo Vista project (Project) footprint and 500 foot buffer. The proposed community development would provide additional homes for the region. The project footprint and 500 foot buffer accounts for approximately 34.92 acres suitable coastal sage scrub. The following vegetation communities and habitats were identified and surveyed within the project parcel and 500 foot buffer (Sawyer, Keeler-Woolf and Evens, 2009):

- Coastal sage scrub
- Southern willow scrub
- Bushmallow scrub
- Coastal sage scrub (disturbed)
- Urban/developed land

Four California gnatcatchers were observed within 34.92 acres suitable habitat on June 12, 2016 and subsequent surveys. A summary of occupied California gnatcatcher territories follows:

- Territory 1 consisted of an adult male and an adult female observed contact calling and foraging in the Project parcel coastal sage scrub on June 12, 2016, June 19, 2016, June 26, 2016, July 3, 2016. Although the pair came within approximately 300 feet of the proposed work limits, they remained outside the project footprint. The pair's territory extends from the jurisdictional drainage west to the eastern terminus of Aspen Way south southeast to the drainage below 4545 Dorinda Road.
- Territory 2 consisted of an adult male and an adult female observed contact calling and foraging in the Project parcel coastal sage scrub on June 12, 2016 and June 26, 2016. The pairs contact calling was unsolicited. Although the pair came within approximately 35 feet of the project footprint, they were consistently observed remaining outside the proposed work limits. Their territory extends from the jurisdictional drainage east along the hillside below the proposed project's footprint northern boundary.
- Neither California gnatcatcher Territory 1 nor Territory 2 were within the Project footprint.

Avian activity and diversity was generally moderate during the surveys and common avian species expected to occur within coastal sage scrub were observed on a regular basis. Brown-headed cowbirds, which are a nest parasite to California gnatcatchers and other avian species, were not observed in the vicinity of the Project site over the course of the surveys. There were no mortality events to report.

The following special status species were observed while conducting California gnatcatcher protocol surveys:

- Nuttall's woodpecker was observed within the Project footprint the entire survey period.

- Willow flycatcher was observed in southern willow scrub in the southeast portion of the Project footprint on May 29, 2016. It was not observed after this date.

- Least Bell's vireo was observed within the project footprint in southern willow scrub in the southeast portion of the Project footprint during surveys June 5, 2016, June 12, 2016, June 19, 2016, June 26, 2016 and July 3, 2016. Territory 1 pair was feeding, singing and scolding moving high to low in a south to north direction through the drainage. The male was observed defending territory, counter calling with an unmated male in adjacent Territory 2. Both territories utilize lush landscaped properties along the southern parcel boundary.

- Yellow warbler was observed in southern willow scrub in the Project south buffer the entire survey period.

- Yellow-breasted chat was observed within the project footprint in southern willow scrub near the Project footprint and another in southern willow scrub along the Project northwest buffer the entire survey period.

- Southern California Rufous-crowned sparrow was observed at the Project southeast buffer and the Project northwest buffer on June 5, 2016, June 12, 2016, June 19, 2016, June 26, 2016 and July 3, 2016.

All observed special-status species have been reported to the California Natural Diversity Database (CNDDB).

A list of wildlife common to the area is provided in Appendix A.

# INTRODUCTION

## Purpose

This report presents the results of a habitat assessment and focused protocol surveys for the federally threatened coastal California gnatcatcher (*Polioptila californica californica*) (California gnatcatcher) (CAGN). The surveys were conducted to determine the presence/absence of California gnatcatchers for the proposed Cielo Vista project (Project), an 83-unit single family residential development plan. The Project is located east of San Antonio Road, south of Casino Ridge Road and North of Stonehaven Drive in the County of Orange adjacent to the City of Yorba Linda, California.

The parcel is bordered by Yorba Linda environs to the north, west and south, and Orange County open space to the east. The parcel consists of gentle slopes and southern riparian scrub (Figures).

Vegetation communities surrounding the Project site is described below:

- North of the Project site consists of coastal sage scrub and a jurisdictional drainage. Suitable California gnatcatcher habitat is present.
- East of the Project site consists of slopes and drainages containing suitable coastal sage scrub: California sagebrush *(Artemisia californica*), flat-topped buckwheat (*Eriogonum fasciculatum*), black sage (*Salvia mellifera*), and bush sunflower (*Encelia californica*). Suitable California gnatcatcher habitat is present.
- South of the Project site is urban/developed land. No suitable California gnatcatcher habitat is present.
- West of the Project site is primarily urban/developed land with suitable coastal sage scrub present west and northwest of Dorinda Road. Suitable California gnatcatcher habitat was present.

## Background

The California gnatcatcher is a small, gray and black songbird that inhabits dry coastal slopes, washes, and mesas from coastal southern California to the tip of the Baja California Peninsula. Three subspecies are recognized. The northernmost nominate race, the California gnatcatcher is a resident of coastal sage scrub consisting predominately of *A. californica, E. fasciculatum, E. californica* and adjacent ecotonal habitats from southern Ventura County southward to northwestern Baja California, Mexico near El Rosario at approximately 30 degrees North latitude. It is generally found at elevations below 500 m and are less abundant in coastal scrub-chaparral transition areas and areas dominated by *S. mellifera*, white sage (*Salvia apiana*), or lemonadeberry (*Rhus integrifolia*) (Atwood and Bontrager 2001).

They nest in shrubs within coastal sage scrub from mid-February to August, and remain on their breeding territories throughout the year. California gnatcatchers will nest on steep or shallow slopes however; slope has a significant influence on nesting success. Nests have an increased success rate on slopes <19.9% slope and placed in *A. californica* (Grishaver 1998).

The species was originally described as distinct in 1881 but was subsequently lumped with the black-tailed gnatcatcher (*Polioptila melanura*) until Atwood (1988) concluded that it was specifically

distinct based on differences in ecology, behavior, and distribution. This finding was adopted by the American Ornithologist's Union (AOU 1989). In March 1993, the subspecies was listed as threatened by the U.S. Fish and Wildlife Service and species of special concern by the California Department of Fish and Wildlife (CDFW) (USFWS 1993, CDFW 2009). This was due to habitat loss and fragmentation occurring in conjunction with urban and agricultural development and brood parasitism by the brown-headed cowbird (*Molothrus ater*). Loss of historical habitat is estimated to be 70-90% (USFWS 1997).

# HABITAT ASSESSMENT

## Methods

Prior to commencing surveys, Leopold Biological Services (Leopold) senior biologist, Christine Harvey reviewed historic data on the California Natural Diversity Database (CDFW 2016), eBird database (eBird 2016), and project area and U.S. Geological Survey (USGS) topography maps to identify species specific survey areas. California gnatcatcher suitable habitat in surrounding environs was included in the review. Ms. Harvey walked the entire project site and 500 foot buffer including the perimeter and the middle where assessable.

## Results

The parcel is successionally recovering from the 2008 Freeway Complex Fire. The selected survey sites were based upon drainages and slopes containing coastal sage scrub, predominated by *A. californica, E. faciculatum, E. californica* and *Salvia* spp. Suitable California gnatcatcher habitat was observed primarily within the southern portion of the biological survey area (BSA).

## Habitats

The BSA accounts for approximately 34.92 acres suitable coastal sage scrub, approximately 13.48 acres suitable coastal sage scrub within the Project buffer and approximately 21.44 acres suitable coastal sage scrub within the project footprint. The following vegetation communities were identified and surveyed within the Project parcel and 500 foot buffer:

- Coastal sage scrub was predominately *E. fasciculatum, A. californica, S. mellifera*, and *E. californica* interspersed with chaparral bushmallow (*Malacothamnus faciculatum),* locoweed *(Astragalus trichopodus), S. apiana,* California chicory *(Rafinesquia californica),* prickly pear *(Opuntia littoralis),* deerweed *(Acmispon glabe),* laurel sumac (*malosma laurina), R. integrifolia,* toyon (*Heteromeles arbutifolia*), and coyote brush (*Baccharis pilularis)* (Sawyer, Keeler-Woolf and Evens, 2009).

- Slopes enter jurisdictional drainages consisting of southern willow scrub primarily composed of arroyo willow (*Salix lasiolepis*), blue elderberry (*Sambucus nigra*), mule fat (*Baccharis salicifolia),* with an overstory of *S. lasiolepis* and black willow (*Salix goodingii)*. The remaining understory vegetation consisted of bulrush (*Schoenoplectus acutus),* cattail (*Typha spp.)* and umbrella sedge (*Cyperus eragrostis),* poison-oak (*Toxicodendron diversilobum*) and wild cucumber (*Marah macrocarpa*) (Sawyer, Keeler-Woolf and Evens, 2009).

- Bushmallow scrub in post burn areas consisted primarily of *M. faciculatum, A. californica* and *A. glaber (*Jones and Stokes Asssociates, 1993).

- Coastal sage scrub (disturbed) consisted of *A. californica, E. faciculatum, M. laurina* and ruderal vegetation such as black mustard (*Brassica nigra),* barley (*Hordeum murinum),* fennel (*Foeniculum vulgare),* poison hemlock (*conium maculatum),* Russian thistle (*Salsola australis),* castor bean *(Ricinus communis),* goldenbush (*Isocoma menziesii*), tree tobacco (*Nicotiana glauca),* and telegraph weed (*Heterotheca grandiflora)* (Sawyer, Keeler-Woolf and Evens, 2009).

- Urban/developed land is present within the parcel and 500 foot buffer. Yorba Linda environs border the parcel to the north, south and west. Oil wells are located in the southeast portion of the parcel (Sawyer, Keeler-Woolf and Evens, 2009).

# SURVEY

## Location

The approximate 80 acre parcel is located southeast of San Antonio Road and Casino Ridge Road, Yorba Linda, California. The Project footprint is approximately 33.62 acres with the remaining 46.38 acres as undeveloped.

Approximately 34.92 acres of suitable habitat was identified, mapped and surveyed within the Project footprint and 500 feet buffer. The selected survey sites were based upon drainages and slopes containing coastal sage scrub, predominated by *A. californica, E. faciculatum, E. californica* and *Salvia* spp. (Table 2, Figures).

## Method

On Wednesday, May 11, 2016, Christine Harvey (TE-54716A-2) submitted notification to Ms. Stacey Love, permit coordinator for the U.S. Fish and Wildlife Service Carlsbad office and Ms. Esther Burkett, permit coordinator for the California Department of Fish and Wildlife. The survey schedule and project maps were included.

Ms. Harvey, conducted six focused California gnatcatcher surveys pursuant to Coastal California Gnatcatcher (*Polioptila californica californica*) Presence/Absence Survey Protocol for a non-NCCP area related surveys described by (USFWS 1997, revised July) and in accordance with U.S. Fish and Wildlife Service (USFWS) recovery permit number 54716A-2 issued under section 10(a)(1)(A) of the Federal Endangered Species Act (FESA).

Surveys were conducted in a non-NCCP area and were completed at least one week apart (February 15 to August 30).

On each site visit, 34.92 acres of potentially suitable California gnatcatcher habitat were surveyed remaining well within the 80 acre per day limit. The surveys were conducted throughout the Project footprint and 500 foot buffer including the perimeter and the middle where assessable. Surveys were conducted during early morning hours between 6:00 a.m. and noon when birds were most active and weather conditions were optimal (Table 1).

The permittee slowly walked the survey area, stopping at approximate 30-meter intervals and waiting three minutes. If a gnatcatcher was not detected in the area, a tape-lure was sparingly played for no more than 10 seconds to solicit a response. Often times the California gnatcatcher will call without the

use of a tape lure. Ms. Harvey would wait three minutes for a response before advancing 30-meters. If California gnatcatchers were observed, age, sex, breeding status, and behavioral characteristics were recorded, if possible. The number and coordinates of all brown-headed cowbirds (*Molothrus ater)* were recorded and transmitted.

Standard practices and precautions were used to avoid and minimize injury or a mortality event and included: checking for predators/cowbirds before using a tape-lure, employing binoculars to perform the majority of observations from a safe distance, waiting until adults are out of the immediate area before indirectly approaching the nest, responding quickly and moving indirectly away from the nest, and taking a way point instead of flagging near a nesting site. The tape-lure was used to ensure no *P. californica* were in the area but was employed only as a last resort because this tool attracts the species away from their nest exposing adults and young to predation and interrupts parents caring for their eggs/young.

**Table 1**
**SURVEY WEATHER CONDITIONS**

| Date | Time | | Temperature (°F) | | Wind Speed (mph) | | Cloud Cover (%) | |
|---|---|---|---|---|---|---|---|---|
| | Begin | End | Begin | End | Begin | End | Begin | End |
| May 29 | 0645 | 1200 | 61 | 64 | 3 | 2 | Fog | Fog |
| June 5 | 0645 | 1130 | 61 | 64 | 1 | 2 | Fog | 5% |
| June 12 | 0700 | 1230 | 64 | 67 | 0 | 1 | Fog | Fog |
| June 19 | 0545 | 1030 | 65 | 84 | 1 | 1 | Clear | 2% |
| June 26 | 0700 | 1015 | 65 | 73 | 1 | 1 | Clear | Clear |
| July 3 | 0645 | 1100 | 64 | 68 | 0 | 2 | Fog | Clear |

## RESULTS

Four California gnatcatchers were observed in two adjacent territories on June 12, 2016 and subsequent surveys. A summary of California gnatcatcher territories follows:

- Territory 1 consisted of an adult male and adult female observed contact calling and foraging in Project parcel coastal sage scrub on June 12, 2016, June 19, 2016, June 26, 2016, and July 3, 2016. Although the pair came within approximately 300 feet of the proposed work limits, they remained outside the project footprint. The pair's territory extends from the jurisdictional drainage west to the eastern terminus of Aspen Way south southeast to the drainage below 4545 Dorinda Road.

- Territory 2 consisted of an adult male and adult female observed contact calling and foraging in Project parcel coastal sage scrub on June 12, 2016 and June 26, 2016. The pairs contact calling was unsolicited. Although the pair came within approximately 35 feet of the project footprint, they were consistently observed outside the proposed work limits. Their territory extends from the jurisdictional drainage east along the hillside below the proposed project's footprint northern boundary.

- Neither California gnatcatcher Territory 1 nor Territory 2 were within the Project footprint.

Avian activity and diversity was generally moderate during the surveys and common avian species expected to occur within coastal sage scrub were observed on a regular basis. Brown-headed cowbirds, which are a nest parasite to California gnatcatchers and other avian species, were not observed in the vicinity of the Project site over the course of the surveys. There were no mortality events to report.

A list of wildlife common to the area is provided in Appendix A.

The following special status species were observed while conducting California gnatcatcher protocol surveys:

- Nuttall's woodpecker (*Picoides nuttallii*), a USFWS – Bird of Conservation Concern, and American Bird Conservancy – U.S. Watchlist Bird of Conservation Concern, was observed within the Project footprint the entire survey period.

- Willow flycatcher (*Empidonax traillii),* a CDFW Endangered Species, was observed in southern willow scrub in the southeast portion of the Project footprint May 29, 2016. The bird was observed actively singing, calling and feeding in arroyo willow within the Project footprint near the southeast boundary.

- Least Bell's vireo (*Vireo bellii puscillus),* a USFWS and CDFW Endangered Species, was observed within the project footprint in southern willow scrub in the southeast portion of the Project footprint on June 5, 2016, June 12, 2016, June 19, 2016, June 26, 2016 and July 3, 2016. Territory 1 pair was feeding, singing and scolding moving high to low in a south to north direction through the drainage. The male was observed defending territory, counter calling with an unmated male in adjacent Territory 2. Both territories utilize lush landscaped properties along the southern parcel boundary.

- Yellow warbler (*Setophaga petechia*) is a CDFW Species of Special Concern, and was observed in southern willow scrub in the Project south buffer the entire survey period.

- Yellow-breasted chat (*Icteria virens*) is a CDFW Species of Special Concern, and was observed within the project footprint in southern willow scrub in the Project footprint and another in southern willow scrub along the Project northwest buffer the entire survey period.

- Southern California Rufous-crowned sparrow (*Aimophila ruficeps canescens)* is a CDFW Watch List Species, and was observed in the Project southeast buffer and the Project northwest buffer on June 5, 2016, June 12, 2016, June 19, 2016, June 26, 2016 and July 3, 2016.

All observed special status species have been reported to the CNDDB.

Survey results are provided in Table 2 and Figures.

## Table 2

### SURVEY RESULTS

| Date | Time Begin | End | Location Easting | UTM (11 N) Northing | Surveyors | Species | Species Age/Sex | Comments Territorial Behavior |
|---|---|---|---|---|---|---|---|---|
| May 29 | 0645 | 1200 | 429907 | 3750640 | C HARVEY | WIFL | M | Singing/Calling |
| June 5 | 0645 | 1130 | 429875 | 3750601 | | LBV | 1-M/1-F | Territory 1 - Sing/Scold Call |
| June 12 | 0700 | 1230 | 429595 | 3751187 | | CAGN | 1-M/1-F | Territory 1 - Contact Call |
| | | | 429662 | 3751085 | | CAGN | 1-M/1-F | Territory 2 – Contact Call |
| | | | 429871 | 3750547 | | LBV | M | Territory 2 – Counter Singing |
| | | | 429875 | 3750601 | | LBV | 1-M/1-F | Territory 1 – Counter Singing |
| June 19 | 0545 | 1030 | 429464 | 3751036 | | CAGN | 1-M/1-F | Territory 1 - Contact Call |
| | | | 429875 | 3750601 | | LBV | 1-M/1-F | Territory 1 – Counter Singing |
| | | | 429871 | 3750547 | | LBV | M | Territory 2 – Counter Singing |
| June 26 | 0700 | 1015 | 429636 | 3751076 | | CAGN | 1-M/1-F | Territory 2 - Contact Calling |
| | | | 429544 | 3751206 | | CAGN | 1-F | Territory 1 - Calling/Foraging |
| | | | 429875 | 3750601 | | LBV | 1-M/1-F | Territory 1 – Counter/Contact Calling |
| | | | 429871 | 3750547 | | LBV | 1-M | Territory 2 – Counter Calling |
| July 3 | 0645 | 1100 | 429875 | 3750601 | | LBV | 1-M/1-F | Territory 1 – Counter Calling |
| | | | 429871 | 3750547 | | LBV | 1-M | Territory 2 – Counter Calling |
| | | | 429584 | 3751188 | | CAGN | 1-M | Territory 1 – Singing/Calling |

## RECOMMENDATIONS

Considering California gnatcatchers are present within the parcel, the quality of the survey site's coastal sage scrub, and its proximity to known breeding populations, additional surveys for California gnatcatcher should be conducted prior to any habitat disturbance.

In addition to protocol presence/absence surveys for California gnatcatcher, preconstruction nesting bird surveys for birds protected under the Migratory Bird Treaty Act (MBTA) should be conducted by a qualified biologist at the beginning and throughout the breeding season (generally defined as February 1 – September 15). A buffer should be established for active nests and will remain up until the project biologist reduces the buffer as instructed by the regulatory agency or the young have fledged.

Please feel free to contact Ms. Harvey at 619•249•2531 or charvey@leopoldbiological.com with any questions.

Respectfully,

Christine Harvey
Principal/Consulting Biologist
TE-54716A-2

## CERTIFICATION

I hereby certify that the statements furnished in this report and in the attached exhibits present data and information required for this California gnatcatcher focused survey, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Signed: _____ Date: July 8, 2016

Christine L. Harvey
Principal/Consulting Biologist
TE-54716A-2

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**Figure 1 – Project location and vicinity**


Project Footprint
Survey Area
Parcel Boundary
500 Foot Buffer

Least Bell's Vireo Territory 1 – 6/5, 6/12, 6/19, 6/26, 7/3/2016
Least Bell's Vireo Territory 2 – 6/12, 6/19, 6/26, 7/3/2016
Willow Flycatcher - 5/29/16

California Gnatcatcher Territory 1 – 6/12/16, 7/03/16
California Gnatcatcher Territory 1 – 6/19/16
California Gnatcatcher Territory 1 – 6/26/16
California Gnatcatcher Territory 2 – 6/12/16
California Gnatcatcher Territory 2 – 6/26/16

**Figure 2 – Survey area**


*Project Footprint*
*500 Foot Buffer*
*Parcel Boundary*
*California Gnatcatcher Territory 1*
*California Gnatcatcher Territory 2*
*Least Bell's Vireo Territory 1*
*Least Bell's Vireo Territory 2*
*Willow Flycatcher*

**Figure 3 – Survey results**

# Appendix A
# Agency Notification

# Re: Notification for coastal California gnatcatcher surveys for Cielo Vista, Yorba Linda, California

**charvey@leopoldbiological.com** <charvey@leopoldbiological.com>

Wed, May 11, 2016
at 2:26 PM

To: Stacey Love <stacey_love@fws.gov>
Cc: "Esther@Wildlife Burkett" <Esther.Burkett@wildlife.ca.gov>, "Justin@Wildlife Garcia" <Justin.Garcia@wildlife.ca.gov>

Dear Ms. Love,

I'm writing to submit notification for coastal California gnatcatcher *(Polioptila californica californica)* presence/absence surveys.

SWCA has retained permittee, Christine L. Harvey's services for California gnatcatcher presence/absence surveys. The proposed project site is approximately 80 acres, with less than 50% slated for development. The new single family residences will be constructed north of Yorba Linda Boulevard and east of Dorinda Road, Orange County, Yorba Linda, California (location map attached). The 2014 surveys identified one breeding pair and two juveniles in the southern portion of the biological survey area.

Ms. Harvey will conduct California gnatcatcher surveys pursuant to Coastal California Gnatcatcher (*Polioptila californica californica*) Presence/Absence Survey Protocol described by USFWS 1997, revised July and in accordance with U.S. Fish and Wildlife Service recovery permit number TE-54716A-2 issued under section 10(a)(1)(A) of the Federal Endangered Species Act. Biologists Angelique Herman and Shirley Innecken will alternate accompanying Ms. Harvey.

Surveys will be conducted in non-NCCP area. We propose the standard survey protocol in non-NCCP area, six surveys, no more than 80 acres per day, one week apart. The survey schedule follows:

| SURVEY | DATE |
|---|---|
| 1 | May 29 |
| 2 | June 5 |
| 3 | June 12 |
| 4 | June 19 |
| 5 | June 26 |
| 6 | July 3 |

Ms. Christine Harvey holds FWS 10(a)(1)(A) permit TE-54716A-2. Please feel free to contact Ms. Harvey at (619) 249-2531 or charvey@leopoldbiological.com with any questions.

Respectfully,

**Christine Harvey,** Principal/Consulting Biologist

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**CIELO VISTA CAGN NOTIFY LTR MAY 12 2016.pdf**
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# Appendix B
# Wildlife Compendium

| Common Name | Scientific Name |
|---|---|
| **Butterflies** | **Pieridae** |
| Alfalfa Butterfly | *Colias eurytheme* |
| Common White | *Pontia protodice* |
| **Butterflies** | **Hesperiidae** |
| Common Checkered Skipper | *Pyrgus communis* |
| **Reptile** | **Phrynosomatidae** |
| Side-blotched Lizard | *Uta stansburiana* |
| **Mammal** | **Didelphidae** |
| Opposum | *Didelphis virginiana* |
| **Mammal** | **Canidae** |
| Coyote | *Canis latrans* |
| **Mammal** | **Cervidae** |
| Southern Mule Deer | *Odocoileus hemionus* |
| **Mammal** | **Sciuridae** |
| California Ground Squirrel | *Spermophilus beecheyi* |
| **Mammal** | **Leporidae** |
| Audubon’s Cottontail | *Sylvilagus audubonii* |
| **New World Vultures** | **Cathartidae** |
| Turkey Vulture | *Cathartes aura* |
| **Hawks, Kites, Eagles and Allies** | **Accipitridae** |
| Cooper's Hawk | *Accipiter cooperii* |
| Red-tailed Hawk | *Buteo jamaicensis* |
| **New World Quail** | **Odontophoridae** |
| California Quail | *Callipepla californica* |
| **Pigeons and Doves** | **Columbidae** |
| Mourning Dove | *Zenaida macroura* |
| **Cuckoos, Roadrunners & Anis** | **Cuculidae** |
| Greater Roadrunner | *Geococcyx californianus* |
| **Swifts** | **Apodidae** |
| White-throated Swift | *Aeronautes saxatalis* |
| **Hummingbirds** | **Trochilidae** |
| Anna's Hummingbird | *Calypte anna* |
| Allen's Hummingbird | *Selasphorus sasin* |
| **Woodpeckers and Allies** | **Picidae** |
| Nuttall's Woodpecker | *Picoides nuttallii* |
| **Caracaras and Falcons** | **Falconidae** |

| | |
|---|---|
| American Kestrel | *Falco sparverius* |
| **Tyrant Flycatchers** | **Tyrannidae** |
| Willow Flycatcher | *Empidonax traillii* |
| Pacific-slope Flycatcher | *Empidonax difficilis* |
| Black Phoebe | *Sayornis nigricans* |
| Say's Phoebe | *Sayornis saya* |
| Ash-throated Flycatcher | *Myiarchus cinerascens* |
| Cassin's Kingbird | *Tyrannus vociferans* |
| **Vireos** | **Vireonidae** |
| Least Bell's Vireo | *Vireo bellii pusillus* |
| Hutton's Vireo | *Vireo huttoni* |
| **Jays and Crows** | **Corvidae** |
| Western Scrub-Jay | *Aphelocoma californica* |
| American Crow | *Corvus brachyrhynchos* |
| **Swallows** | **Hirundinidae** |
| Northern Rough-winged Swallow | *Stelgidopteryx serripennis* |
| Cliff Swallow | *Petrochelidon pyrrhonota* |
| **Bushtits** | **Remizidae** |
| Bushtit | *Psaltriparus minimus* |
| **Wrens** | **Troglodytidae** |
| House Wren | *Troglodytes aedon* |
| Bewick's Wren | *Thryomanes bewickii* |
| **Gnatcatchers** | **Polioptilidae** |
| Blue-gray Gnatcatcher | *Polioptila caerulea* |
| California Gnatcatcher | *Polioptila californica* |
| **Sylviid Warblers** | **Sylviidae** |
| Wrentit | *Chamaea fasciata* |
| **Thrushes** | **Turdidae** |
| Western Bluebird | *Sialia sialis* |
| **Mockingbirds and Thrashers** | **Mimidae** |
| California Thrasher | *Toxostoma redivivum* |
| Northern Mockingbird | *Mimus polyglottos* |
| **Silky-Flycatchers** | **Ptilogonatidae** |
| Phainopepla | *Phainopepla nitens* |
| **Wood-Warblers** | **Parulidae** |
| Common Yellowthroat | *Geothlypis trichas* |

| | |
|---|---|
| Yellow Warbler | *Setophaga petechia* |
| Yellow-breasted Chat | *Icteria virens* |
| **Emberizids** | **Emberizidae** |
| So Cal Rufous-crowned Sparrow | *Aimophila ruficeps canescens* |
| Spotted Towhee | *Pipilo maculatus* |
| California Towhee | *Melozone crissalis* |
| Song Sparrow | *Melospiza melodia* |
| **Cardinals, Tanagers and Allies** | **Cardinalidae** |
| Black-headed Grosbeak | *Pheucticus melanocephalus* |
| Blue Grosbeak | *Passerina caerulea* |
| **Blackbirds** | **Icteridae** |
| Hooded Oriole | *Icterus cucullatus* |
| **Finches and Allies** | **Fringillidae** |
| House Finch | *Haemorhous mexicanus* |
| Lesser Goldfinch | *Spinus psaltria* |
| **Munias** | **Estrididae** |
| Scaly-breasted Munia | *(Lonchura punctulata)* |

# Appendix C
# Photographs


**Photo 1 – Coastal Sage Scrub North Drainage**


**Photo 2 –Coastal Sage Scrub Northwest Project Footprint**


**Photo 3 – Southern Willow Scrub Willow Flycatcher Location**


**Photo 4 – Southern Willow Scrub**


**Photo 5 – Coastal Sage Scrub Drainage**


**Photo 6 – Southern Willow Scrub and Coastal Sage Scrub Yellow-breasted Chat Territory**


**Photo 7 – Coastal Sage Scrub California Gnatcatcher Territory 1**


**Photo 8 –Coastal Sage Scrub California Gnatcatcher Territory 1**

**Photo 9 – Coastal Sage Scrub Drainage California Gnatcatcher Territory 2**


**Photo 10 – Southern Willow Scrub Least Bell's Vireo Territory 1**

**Photo 11 – Urban/Developed - Least Bell's Vireo Territory 1 Frequenting Residential Adjacent to Jurisdictional Ephemeral Drainage**


**Photo 12 – Urban/Developed - Least Bell's Vireo Territory 2 Frequenting Residential Adjacent to Jurisdictional Ephemeral Drainage**