

**DETERMINATION OF BIOLOGICALLY EQUIVALENT
OR SUPERIOR PRESERVATION (DBESP) ANALYSIS**

For Impacts to MSHCP Riparian/Riverine Areas

Terracina Residential Development Project

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1.0 INTRODUCTION

This document provides an analysis in support of a Determination of Biologically Equivalent or Superior Preservation (DBESP) for the Terracina Residential Development Project (the “Project), in regards to the Multiple Species Habitat Conservation Plan (MSHCP) requirements for *Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools (MSHCP Volume I, Section 6.1.2)*.

This document has been prepared following the City of Lake Elsinore DBESP Guidelines, and is consistent with the guidelines identified in *Volume I, Section 6.1.2* of the MSHCP document, in order to demonstrate that with the appropriate mitigation, the Project will represent a “biologically equivalent or superior alternative”. This assessment provides a comprehensive documentation of onsite sensitive biological resources, including a summary of findings of general and focused biological surveys, and vegetation mapping. A more detailed reporting of biological resources, including results of species-specific focused surveys, are contained within the Project’s updated Biological Technical Report and Biological Technical Report.

2.0 PROJECT DESCRIPTION

2.1 Project Location

The proposed Project, including the proposed off-site impact areas, is a multi-jurisdictional project that occurs within the extreme western portion of Western Riverside County, California within the City of Lake Elsinore [Exhibit 1 – Regional Map]. The Project comprises approximately 150.60 acres on site and 4.65 acres off site and is bounded by rural residential development and the Alberhill Ranch Development to the north, Lakeshore Drive to the south, Dryden Street, Gunder Avenue and Stoddard Street to the east, and Terra Cotta Road and the Alberhill Ranch Development to the west. The Project site is depicted on the USGS Lake Elsinore (dated 1953 and photorevised in 1988) and Alberhill (dated 1954 and photorevised in 1988), California, topographic maps, in Sections 26, 34, and 35, of Township 5 South and Range 5 West [Exhibit 2 – Vicinity Map].

The Project is generally located latitude 33.697180 and longitude -117.375956 and includes Assessor’s Parcel Numbers (APN): 378-040-004, 378-040-005, 378-040-006, 378-040-007, 378-040-012, 389-180-001, 389-180-002, and 389-190-002.

2.2 Project Description

The Project site is an irregular shaped parcel of land consisting of 154.8 acres on-site of gently rolling topography and is bordered on all sides with existing or dedicated streets. Approximately 4.65 acres of off-site improvements and remedial grading are also associated with the Project. The Project has six villages of residential lots on 71 acres of land ranging in size from 4,000 square feet to over 10,000 square feet in size and a total of 468 lots are being proposed. The street rights-of-way within the Project consist of 20,555 linear feet or 28.00 acres of land. The gross density of the Project is 3.10 dwelling units per acre.

In addition to 99.0 acres of residential development (including the residential streets), the Project includes a 1.6-acre park amenity; graded slopes of 28.20 acres and 22.00 acres of natural open space areas and detention/water quality basins.

As part of the Project, three detention/water quality basins will be constructed and located in each of the existing drainage areas. All three basins will detain and treat storm water from the project before exiting the site. Additional infrastructural improvements include sewer, domestic water lines, storm drain facilities and other dry utility lines, which will be constructed as part of the proposed residential development.

The Project also includes off-site road improvements to Terra Cotta Street from the Project boundary to Nichols Road, and Hoff Avenue from Terra Cotta Street to the Project boundary, in addition to an off site remedial grading area abutting the northeastern boundary of Project site. A copy of the Project site plan is attached as Exhibit 3.

2.3 Infeasibility of Avoidance

Volume I, Section 6.1.2 of the MSHCP requires that projects develop avoidance alternatives, if feasible, that would allow for full or partial avoidance of riparian/riverine areas. Avoidance of MSHCP riparian/riverine areas by the proposed Project is not feasible, although 0.79 acre of riparian/riverine areas within the Project site will be permanently avoided. The purpose of the proposed Project is to construct a single-family residential development and general plan secondary roadway (Terra Cotta Street) to partially meet the anticipated housing needs of the City of Lake Elsinore as described in the Housing Element and General Plan.

Terra Cotta Street

A portion of the proposed riparian/riverine impacts associated with Drainage System 1 are required to construct and improve Terra Cotta Street, which is an existing dirt and partially paved roadway, between Lakeshore Drive and Nichols Road. Terra Cotta Street is considered a secondary, four-lane roadway with a 90-foot wide right-of-way within the City of Lake Elsinore Transportation Element. As Terra Cotta Street is a proposed General Plan roadway, its alignment has already been approved by the City and impacts to riparian/riverine habitat associated with roadway construction, and the construction of necessary drainage improvements crossing the roadway, cannot be further avoided, while still providing the necessary circulation between Nichols Road and Lakeshore Drive.

Residential Development Construction

Proposed Development North of Terra Cotta Street

As noted above, the purpose of the proposed Project is to construct a single-family residential development to partially meet the City's general plan housing needs (as well as the construction of associated infrastructure) within the development. Residential housing construction expected to occur northerly of Terra Cotta Street is limited to one ingress/egress point due to existing topographic constraints and the previously constructed Alberhill Ranch development.

Development northerly of Terra Cotta Street is also constrained by water quality treatment/basin construction requirements imposed upon the Project by the City and the Santa Ana Regional Water Quality Control Board (Regional Board). Due to topographic constraints, the construction of a water quality basin, and the necessary ingress/egress roadway, residential housing has been placed in such a manner as to develop sufficient residential units to meet City General Plan Housing Element and Transportation Element requirements. As a result, roadway ingress/egress cannot be relocated in a manner to feasibly avoid further impacts to Drainage System 1 and still meet the purpose of the Project.

Proposed Development North of the Intersection of Lakeshore Drive and Dryden Street

Residential housing construction expected to occur northerly of the intersection of Lakeshore Drive and Dryden Street is also limited to one ingress/egress point, which traverses a majority of this portion of the Project and connects to other interior streets servicing the eastern portion of the proposed development. This portion of the Project is located adjacent to a large hillside and construction of residential housing, and ingress/egress for the lone roadway, is limited due to existing topographic constraints.

Development is further constrained by water quality treatment/basin construction requirements imposed upon the Project by the City and Regional Board. Due to topographic constraints, the construction of a water quality basin, and the necessary ingress/egress roadway, residential housing has been placed in such a manner as to develop sufficient residential units to meet City General Plan Housing Element and Transportation Element requirements. As a result, roadway ingress/egress cannot be relocated in a manner to feasibly avoid the minimal impact to Drainage System 2 and still meet the purpose of the Project.

Proposed Development Within Eastern Project Site

Residential housing construction expected to occur within the eastern portion of the Project site consists of a majority of the proposed residential development, and includes two ingress/egress points, which traverse a majority of this portion of the Project and connect to smaller interior streets servicing the eastern portion of the proposed development. This portion of the Project is also limited by topographic constraints and fixed ingress/egress points connecting to both Terra Cotta Street and Dryden Street.

Development is further constrained by water quality treatment/basin construction requirements imposed upon the Project by the City and Regional Board. Due to topographic constraints, the construction of a water quality basin, and the necessary ingress/egress roadways, which provide a majority of the circulation for the proposed development, residential housing and infrastructural improvements have been placed in such a manner as to develop sufficient residential units and infrastructure to meet City General Plan Housing Element and Transportation Element requirements. As a result, roadway ingress/egress cannot be relocated in a manner to feasibly avoid further impacts to Drainage Systems 1 and 3, and still meet the purpose of the Project.

As a result, the Project will permanently avoid all but a very small portion of emergent wetland habitat (0.01 acre of impact and 0.08 acre of avoidance), 0.67 acre of southern willow scrub habitat, and 0.03 acre of riverine areas.

3.0 EXISTING CONDITIONS

The Project site is generally comprised of Riversidean Sage Scrub (RSS), disturbed land, and ruderal vegetation. The main drainage feature located in the northwest portion of the site supports southern willow scrub (SWS) and three small wetland areas. Two other drainage systems on site support RSS and non-native grasslands (NNG). The site is also traversed by many dirt paths and roads.

Elevation on site ranges between approximately 1,300 to 1,600 feet above mean sea level. Areas of high elevation are located in the southwestern and southeastern portions of the Project site and are dominated by RSS. The site also contains several anthropogenic refuse piles and scattered debris.

The Project-related off-site improvement areas proposed for impact are generally comprised of disturbed and/or developed land, ruderal vegetation, and small patches of disturbed RSS habitat. Some areas adjacent to Terra Cotta Street (areas that will not be impacted) contain small patches of moderate quality RSS. No jurisdictional drainage features are located within the impact boundaries of the off-site improvement areas. Exhibit 4 includes a copy of the Project's MSHCP Riparian/Riverine Resources Map.

Soil types associated with Project footprint include Altamont Cobbly Clay, 8 to 35 Percent Slopes (AbF), Cieneba Rocky Sandy Loam, 15 to 50 Percent Slopes (CkF2), Gorgonio Loamy Sand, 0 to 8 Percent Slopes (GhC), Hanford Coarse Sandy Loam, 2 to 8 Percent Slopes (HcC) and Hanford Coarse Sandy Loam, 8 to 15 Percent Slopes, Eroded (HcD2), Placentia Fine Sandy Loam, 5 to 15 Percent Slopes (PID), Rough Broken Land (RuF), and Willows Silty Clay, Saline-Alkali (0 to 2 Percent Slopes) (Wg) [Exhibit 4 – Soils Map].

The site and/or off site improvement areas contain two MSHCP sensitive soil types of the Altamont and Willows soils association; however, the vegetation communities present within the areas supporting Altamont and/or Willows soils associations consists of either disturbed/ruderal, ornamental, disturbed RSS, and/or non-native grassland habitat. Therefore, neither the Willows soil nor the Altamont soil association on site supports sensitive plant species that would be targeted for conservation under the plan. Soils within the Project site and off site improvement areas are listed below.

Altamont Cobbly Clay, 8 to 35 Percent Slopes (AbF)

Soils of the Altamont series consist of well drained soils on uplands. These soils are underlain by soft, fine-grained sandstone and calcareous siltstone. The upper 12 inches consist of grayish-brown (10YR 5/2) clay when dry and dark grayish-brown (10YR 3/2) clay and very dark grayish-brown (10YR 4/2) clay when moist. Altamont soils are used for dryland grain, pasture, and range.

Cieneba Rocky Sandy Loam, 15 to 50 Percent Slopes, Eroded (CkF2)

Soils of the Cieneba series consist of somewhat excessively drained soils on uplands. These soils formed in coarse-grained igneous rock. The upper eight inches consist of brown (10YR 5/3) sandy loam when dry and dark brown (10YR 3/3) sandy loam when moist. Cieneba soils are used for dryland grain, pasture, range, irrigated citrus and homesites.

Gorgonio Loamy Sand, 0 to 8 Percent Slopes (GhC)

Soils of the Gorgonio series consist of somewhat excessively drained to excessively drained soils on alluvial fans. These soils formed in alluvium made up chiefly of granitic materials. The upper 15 inches consist of dark grayish-brown (10YR 4/2) and brown (10YR 5/3) gravelly loamy fine sand when dry and very dark grayish brown (10YR 3/2) and dark brown (10YR 3/3) gravelly loamy fine sand when moist. Gorgonio soils are used for dryland pasture and range, for irrigated alfalfa and apricots, and for homesites.

Hanford Coarse Sandy Loam, 2 to 8 Percent Slopes (HeC) and Hanford Coarse Sandy Loam, 8 to 15 Percent Slopes, Eroded (HcD2)

Soils of the Hanford series consist of somewhat excessively drained to well-drained soils on alluvial fans. Slopes of the Hanford series range from zero to 15 percent. These soils formed in alluvium made up chiefly of granitic materials. The upper 18 inches consist of grayish-brown (10YR 5/2) coarse sandy loam when dry and very dark grayish brown (10YR 3/2) coarse sandy loam when moist. Hanford soils are used for dryland pasture and grain, for irrigated alfalfa, potatoes, citrus, grapes, and grain. These soils are also used for homesites.

Placentia Fine Sandy Loam, 5 to 15 Percent Slopes (PID)

Soils of the Placentia series consist of moderately well-drained soils on alluvial fans and terraces. Slopes of the Placentia series range from zero to 25 percent. These soils formed in alluvium made up chiefly of granitic materials. The upper 13 inches consist of brown (10YR 5/3) fine sandy loam when dry and dark brown (10YR 4/3) fine sandy loam when moist. Placentia soils are used for dryland pasture and grain, for irrigated permanent pasture, and for non-farm purposes.

Rough Broken Land (RuF)

Rough broken land consists of alluvial materials that are remnants of old alluvial fans and terraces. These fans have been dissected by drainages to such an extent that areas of recognizable soils cannot be mapped. Soils within this series probably formed as acid igneous rocks, such as granite, granodiorite, gneiss, and mica-schist. These soils are slightly acidic to moderately alkaline, pale brown, or grayish brown to brown, or dark grayish brown to brown or dark grayish brown.

Willows Silty Clay, Saline-Alkali (0 to 2 Percent Slopes) (Wg)

Soils of the Willows series are poorly drained, saline-alkali soils in basins and on the edges of alluvial fans. Slopes of the Willows series range from zero to two percent. These soils developed in alluvium from predominantly fine-textured materials. The upper ten inches consist of olive-gray (5Y 5/2) and gray (5Y 5/1) silty clay when dry and dark olive-gray (5Y 3/2) silty clay when moist. The Willows soils are used for dryland grain and pasture, and, if irrigated, for grain, alfalfa, and permanent pasture. These soils are also used for non-farm purposes such as duck ponds.

A soils map for the Project is included as Exhibit 5.

GLA biologists mapped seven distinct vegetation community/land use types for the Project site and off site improvement areas. Exhibit 6 provides a vegetation map for the site. Exhibit 7 provides representative site photographs. Table 3-1 provides a summary of vegetation acreages for the site. A description of each vegetation community/land use type follows the table.

Table 3-1. Summary of Vegetation Mapping for On-Site (2013 BTR) and Off-Site Impact Areas

Vegetation	On-Site Acreage	Off-Site Acreage
Non-Native Grassland	57.68	0
Riversidean Sage Scrub	35.23	0
Southern Willow Scrub	1.79	0
Disturbed Riversidean Sage Scrub	36.94	0.20
Emergent Wetland Vegetation	0.09	0
Ornamental	0	0.20
Disturbed/ Ruderal	22.74	4.25
Total	154.47	4.65

4.0 SUMMARY OF BIOLOGICAL STUDIES

Biologists from GLA conducted surveys for the Project from March through July 2013 in order to comply with the MSHCP, the California Environmental Quality Act (CEQA), and the Endangered Species Act (ESA). An updated survey of the off site improvement areas was conducted in April 2014. The results of surveys relevant to MSHCP *Section 6.1.2* are summarized in this document. A more detailed reporting of general and focused biological surveys is provided within the Project's Biological Technical Report and Biological Technical Report Addendum.

GLA biologists mapped all MSHCP Riparian/Riverine areas within the Project area. In conjunction with Riparian/Riverine assessment, GLA biologists conducted focused surveys for the least Bell's vireo (*Vireo bellii pusillus*) within areas of suitable riparian habitat. The least

Bell's vireo was not detected during focused surveys. The Project area does not contain suitable habitat for the southwestern willow flycatcher (*Empidonax traillii extimus*) or western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), and does not contain suitable habitat for listed fairy shrimp.

4.1 MSHCP Riparian/Riverine Areas

The Project site contains 2.34 acres of MSHCP riparian/riverine areas, of which 1.89 acres support riparian habitat and 0.45 acre supports unvegetated riverine habitat. The Project will impact 1.55 acres of MSHCP riparian/riverine areas, including 1.13 acres of riparian vegetation and 0.42 acre of unvegetated riverine areas. Table 4-1 provides a summary of impacts to MSHCP riparian/riverine areas. Exhibit 8 depicts impacts to riparian/riverine habitat on site.

Table 4-1. Impacts to MSHCP Riparian/Riverine Areas

Drainage System	Unvegetated Riverine	Riparian Vegetation	Total Impact
1	0.11	1.13	1.24
2	0.01	0	0.01
3	0.30	0	0.30
TOTAL IMPACT TO MSHCP RIPARIAN/RIVERINE HABITAT	0.42	1.13	1.55

4.2 Least Bell's Vireo

Volume I, Section 6.1.2 of the MSHCP requires focused surveys for the Federal and State listed least Bell's vireo (*Vireo bellii pusillus*) within areas of suitable riparian habitat that cannot be avoided by projects. The U.S. Fish and Wildlife Service (USFWS) least Bell's vireo (LBV) survey guidelines stipulate that a minimum of eight visits be conducted within areas of suitable habitat during the period from April 10 to July 31, with at least ten days between site visits.¹ Surveys must be conducted between sunrise and 11:00 am, and weather conditions must be conducive to a high level of bird activity. The Project site contains riparian habitat with some potential to support the LBV. As such, in compliance with USFWS guidelines, focused LBV surveys were conducted for all areas of suitable habitat within the Project site. No LBV surveys were necessary in the off site improvement areas due to the lack of suitable habitat. LBV was not detected within the Project or off site improvement areas. Table 4-2 summarizes the LBV survey dates.

¹ U.S. Fish and Wildlife guidelines for least Bell's vireo surveys recommend surveys of up to 50 hectares (approximately 120 acres) and no more than 3 linear kilometers (approximately 1.8 miles) per day, depending on site conditions (e.g., density and width of vegetation). U.S. Department of the Interior, Fish and Wildlife Service, 2001. Least Bell's vireo Survey Guidelines, Published guidelines by Ecological Services Carlsbad Fish and Wildlife Office, 3 pages.

Table 4-2. Summary of Focused Least Bell's Vireo Survey Dates

Survey Date	Surveying Biologist	Start/End Times	Temperature (°F)	Wind Speed (mph)	Cloud Cover
4/24/13	JF/TM	0850/1100	64/73	0/0	Overcast/Broken
5/6/13	JF/TM	0855/0955	61/57	0/0	Overcast/Overcast
5/21/13	JF	0605/0815	62/69	0/0	Scattered/Clear
6/3/13	JF	0620/1005	65/70	0/0	Overcast/Overcast
6/13/13	DS	0700/1000	75/75	0/2	Overcast/Overcast
6/24/13	TM	0825/1015	60/73	3/6	Overcast/Broken
7/9/13	DS	0600/0845	69/89	0/2	Clear/Broken
7/19/13	DS	0620/0900	66/88	0/2	Scattered/Scattered

DS = David Smith; JF = Jason Fitzgibbon; TM = Tim Morgan

4.3 Southwestern Willow Flycatcher

Volume I, Section 6.1.2 of the MSHCP requires focused surveys for the Federally and State listed southwestern willow flycatcher (*Empidonax traillii extimus*) within areas of suitable riparian habitat that cannot be avoided by projects. Where survey results are positive, the MSHCP requires that 100 percent of the occupied portions of properties that provide for long-term conservation value for the southwestern willow flycatcher shall be conserved in a manner consistent with conservation of the flycatcher, including 100 meters of undeveloped landscape adjacent to the habitat conserved. For unavoidable impacts to the flycatcher, projects are required to mitigate for the loss of habitat functions and values such that the project will be “biologically equivalent or superior” to the existing condition. Projects with positive survey results which are unable to satisfy the MSHCP avoidance requirements, must go through the DBESP process, with the DBESP analysis to be reviewed by the CDFW and USFWS.

The Project site and off site improvement areas do not contain, or occur next to, adjacent riparian habitat with some potential to support the southwestern willow flycatcher. As such, focused southwestern willow flycatcher surveys were not conducted.

4.4 Western Yellow-Billed Cuckoo

Volume I, Section 6.1.2 of the MSHCP requires focused surveys for the western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) within areas of suitable riparian habitat that cannot be avoided by projects. Where survey results are positive, the MSHCP requires that 100 percent of the occupied portions of properties that provide for long-term conservation value for the cuckoo shall be conserved in a manner consistent with conservation of the cuckoo, including 100 meters of undeveloped landscape adjacent to the habitat conserved. For unavoidable impacts to the cuckoo, projects are required to mitigate for the loss of habitat functions and values such that the project will be “biologically equivalent or superior” to the existing condition. Project applicants must provide a DBESP analysis to be reviewed by CDFW and USFWS.

The Project site and the off site improvement areas do not contain suitable habitat for the western yellow-billed cuckoo; therefore, focused surveys were not conducted.

4.5 MSHCP Riparian/Riverine Areas and Vernal Pools

GLA biologists surveyed the site for riparian/riverine areas and vernal pool/seasonal pool habitat. *Volume I, Section 6.1.2* of the MSHCP describes the process through which protection of riparian/riverine areas and vernal pools would occur within the MSHCP Plan Area. The purpose is to ensure that the biological functions and values of these areas throughout the MSHCP Plan Area are maintained such that habitat values for species inside the MSHCP Conservation Area are maintained. The MSHCP requires that as projects are proposed within the overall Plan Area, the affect of those projects on riparian/riverine areas and vernal pools must be addressed.

The MSHCP defines riparian/riverine areas as *lands which contain Habitat dominated by trees, shrubs, persistent emergent mosses and lichens, which occur close to or which depend upon soils moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year.*

The MSHCP defines vernal pools as *seasonal wetlands that occur in depression areas that have wetlands indicators of all three parameters (soils, vegetation, and hydrology) during the wetter portion of the growing season but normally lack wetland indictors of hydrology and/or vegetation during the drier portion of the growing season.*

With the exception of wetlands created for the purpose of providing wetlands habitat or resulting from human actions to create open waters or from the alteration of natural stream courses, areas demonstrating characteristics as described above which are artificially created are not included in these definitions.

The Project area does not contain any vernal pools, or other ephemeral ponds with the potential to support listed fairy shrimp, including the vernal pool fairy shrimp (*Branchinecta lynchi*), Riverside fairy shrimp (*Streptocephalus woottonii*), and the Santa Rosa Plateau fairy shrimp (*Lindleriella santarosae*). Riparian/riverine areas are further discussed in Section 4.1 above.

5.0 QUANTIFICATION OF UNAVOIDABLE IMPACTS TO RIPARIAN/RIVERINE RESOURCES

5.1 Riparian/Riverine Areas

Volume I, Section 6.1.2 of the MSHCP describes the process through which the protection of riparian/riverine areas and vernal pools is intended to occur within the MSHCP Plan Area. The purpose of this process is to ensure that the biological functions and values of riparian/riverine areas and vernal pools throughout the MSHCP Plan Area are maintained such that habitat values for animal and plant species inside the MSHCP Conservation Area are also maintained.

The MSHCP defines riparian/riverine areas as *“lands which contain habitat dominated by trees, shrubs, persistent emergents, or emergent mosses and lichens, which occur close to or which depend upon soil moisture from a nearby fresh water source; or areas with fresh water flow*

during all or a portion of the year.” With the exception of wetlands created for the purpose of providing wetlands habitat or resulting from human actions to create open waters or from the alteration of natural stream courses, areas meeting the criteria of riparian/riverine as described above, but which are artificially created, are not included in the definition.

The proposed Project will permanently impact 1.13 acres of riparian habitat, including 0.01 acre of emergent wetland and 1.12 acres of southern willow scrub habitat. In addition, the Project will permanently impact 0.42 acre of unvegetated streambed (i.e., riverine), for a total of 1.55 acres of riparian/riverine areas. Table 5-1 provides a breakdown of permanent impacts to each riparian vegetation type.

Table 5-1. Impacts to Riparian/Riverine Areas (In Acres)

Vegetation/Land Use Type	Impacts
Emergent Wetland	0.01
Southern Willow Scrub	1.12
Unvegetated Streambed	0.42
Total	1.55

5.1.1 Emergent Wetland

Approximately 0.09 acre of the Project site supports emergent wetland areas that are contained within the MSHCP riparian/riverine areas dominated by wetland associated plant species, including mulefat (*Baccharis salicifolia*), arroyo willow (*Salix lasiolepis*), Mexican rush (*Juncus mexicanus*), pigmy weed (*Crassula connata*), and stinging nettle (*Urtica dioica*). Vegetation adjacent to the wetland areas include black mustard (*Brassica nigra*), shepherd’s purse (*Capsella bursa-pastoris*), common ragweed (*Ambrosia artemisiifolia*), bristly ox-tongue (*Helminthotheca echinoides*), and rabbitsfoot grass (*Polypogon monspeliensis*).

The Project, as proposed, will result in permanent impacts to 0.01 acre of emergent wetland habitat, while the remaining 0.08 acre of emergent wetland habitat will be avoided.

5.1.2 Southern Willow Scrub

Approximately 1.79 acres of the Project site contain southern willow scrub habitat. This community was mapped in the northeastern portion of the site in Drainage 1. Southern willow scrub is classified as a sensitive natural community by CDFW. These relatively small areas of southern willow scrub contained dense thickets of willow species including arroyo willow (*Salix lasiolepis*), sandbar willow (*Salix exigua*), and Goodding’s black willow (*Salix gooddingii*), in addition to mule fat (*Baccharis salicifolia*), and blue elderberry (*Sambucus nigra* ssp. *caerulea*).

The Project, as proposed, will result in permanent impacts to 1.12 acres of southern willow scrub habitat, while the remaining 0.67 acre of southern willow scrub habitat will be avoided.

5.1.3 Unvegetated Streambed

Approximately 0.45-acre of the Project site supports ephemeral unvegetated streambed.

The Project as proposed, will result in impacts to approximately 0.42-acre of unvegetated streambed (riverine areas) while 0.03 acre of unvegetated streambeds (riverine areas) will be avoided.

A MSHCP riparian/riverine impact map is attached as Exhibit 8 and a vegetation impact map is attached as Exhibit 9.

5.2 Wildlife Habitat and Aquatic Habitat

Volume I, Section 6.1.2 of the MSHCP document (Purpose) identifies a number of plant and animal species for which the protection of riparian/riverine areas is generally important to the conservation of such species. In addition, *Section 6.1.2* identifies other plant and animal species for which the benefits of the riparian/riverine policies would extend to (Additional Species Benefits). None of the plant species identified in Section 6.1.2 of the MSHCP were detected within the Project, and nearly all would not be expected to occur due to a lack of suitable habitat. Of the animal species, none of the bird species were detected on site, other than the Cooper's hawk and yellow warbler though other species have the potential to occur within the riparian habitat to be impacted by the Project. Some of these species are only expected to occur during spring/fall migration, using the site for resting and foraging. The yellow warbler has a limited potential to breed in habitat within the Project, as does the Cooper's hawk.

Impacts to Habitat Function

The Project will not adversely impact habitat function for riparian species. Riparian habitat in general within the Drainage System 1 represents habitat for riparian species, including the Federally and State listed least Bell's vireo, as well as numerous other non-listed, sensitive birds. However, the vegetation within Drainage System 1 within the Project footprint is significantly disturbed and has a low potential to support bird nests, and is not likely to support nests of the least Bell's vireo. Although the Project site supports potential habitat for the least Bell's vireo, this species was determined to be absent from the site based on the negative results of focused surveys. Regardless, the impact to riparian vegetation would occur outside of the nesting season to ensure that no active bird nests would be removed.

6.0 PROPOSED MITIGATION

For unavoidable impacts to Riverine/Riparian areas, the MSHCP requires that a Project demonstrate that it would be "biologically equivalent or superior" to complete avoidance of existing habitat. The Project will offset impacts to riparian/riverine by purchasing credits at the Riverside-Corona Resource Conservation District (RCRCD) in-lieu fee program, or another

approved in-lieu fee program or mitigation bank within the Santa Ana River Watershed.² Project mitigation will offset the loss of areas supporting riparian habitat and unvegetated portions of the streambed that do not typically support riparian vegetation. As noted above in Section 5.0, the Project will impact 1.13 acres of riparian habitat and another 0.42 acre of areas of unvegetated streambed. The Project will replace the loss of riparian habitat (1.13 acres total) at a 3:1 ratio, for a total of 3.39 acres. The Project will replace the remaining 0.42 acre of unvegetated riverine areas at a 2:1 ratio for a total of 0.84 acre. Total mitigation will be approximately 4.23 acres. Therefore, through the acquisition of the proposed mitigation credits supporting equal or superior values (at greater than a 3:1 ratio for riparian habitat and 2:1 for unvegetated riverine areas), the Project will replace lost functions and values, as it pertains to *Volume I, Section 6.1.2* of the MSHCP, and is considered a “biologically equivalent or superior” project in compliance with the MSHCP.

7.0 FINDING OF BIOLOGICALLY EQUIVALENT OR SUPERIOR PRESERVATION

As noted above, impacts associated with the Project will result in permanent impacts to 1.13 acres of MSHCP riparian areas, and 0.42 acre of unvegetated riverine areas. As noted above in Section 2.3 of this document, avoidance of these impacts is infeasible based on the stated purpose and need for the Project, and the need to complete a secondary roadway, Terra Cotta Street, which is a general plan-approved roadway. As a result, the Project will permanently avoid all but a portion of riverine riparian vegetation, consisting of southern willow scrub and emergent marsh habitat, within the on site drainage areas. The remaining impacts to riparian vegetation and riverine areas are associated with residential development and infrastructural improvements. Given the disturbed nature of the Project site, the minimized impacts to riparian/riverine areas, and the marginal habitat quality, the proposed off-site mitigation will result in a biologically equivalent or superior condition within the MSHCP Plan Area compared with the existing conditions. This determination is based on one or more of the following factors: effects on Conserved Habitats; effects on riparian/riverine planning species; and effects on riparian linkages and function of the MSHCP conservation area.

7.1 Effects on Conserved Habitats

Although the proposed Project would impact approximately 1.55 acres of riparian/riverine areas, the proposed mitigation would result in superior preservation in the amount and quality of riparian/riverine habitat within the MSHCP. The Project will purchase credits at an off-site mitigation bank or in-lieu fee program at a 3:1 ratio for impacts to riparian habitat, and at a 2:1 ratio for impacts to unvegetated riverine areas.

² GLA has confirmed with Shelli Lamb of the RCRC that sufficient credits at this in-lieu fee program are available as have been proposed above. The RCRC is the applicant’s preferred mitigation option as these credits are available.

7.2 Effects on Riparian/Riverine Planning Species

As noted in Section 5.2 above, the Project will not adversely impact habitat function for riparian species. Riparian habitat in general within Drainage System 1 represents habitat for riparian species, including the Federally and State listed least Bell's vireo, as well as numerous other non-listed, sensitive birds. However, the vegetation within Drainage System 1 within the Project footprint has a low potential to support bird nests, and is not likely to support nests of the least Bell's vireo. Although the Project site supports potential habitat for the least Bell's vireo, this species was determined to be absent from the site based on the negative results of focused surveys. The proposed off-site mitigation will provide habitat with equal if not better opportunity for MSHCP riparian/riverine Planning Species, and other Planning Species.

7.3 Effects on Riparian Linkages and Function of the MSHCP Conservation Area

The proposed Project will not adversely impact existing or proposed Conservation Areas, and will not adversely impact existing or proposed Linkages or Constrained Linkages. However, the Project will implement measures (as applicable) consistent with the MSHCP guidelines to address the following:

- Drainage
- Toxics;
- Lighting;
- Noise;
- Invasives;
- Barriers; and
- Grading/Land Development.

Furthermore, the Project is designed to minimize adverse hydrologic effects to downstream resources. As such, the proposed Project will not adversely affect linkage and/or overall MSHCP conservation function.

8.0 REFERENCES

Dudek and Associates. 2003. Final Western Riverside County Multiple Species Habitat Conservation Plan dated June 17, 2003. Prepared for County of Riverside Transportation and Land Management Agency.

City of Lake Elsinore. 2011. General Plan Final EIR.

Glenn Lukos Associates, Inc. 2014. Biological Technical Report for the Terracina Residential Development Project.

Glenn Lukos Associates, Inc. 2014. Addendum to the Biological Technical Report for the Terracina Residential Development Project Located in the City of Lake Elsinore, Riverside County, California.

9.0 CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.



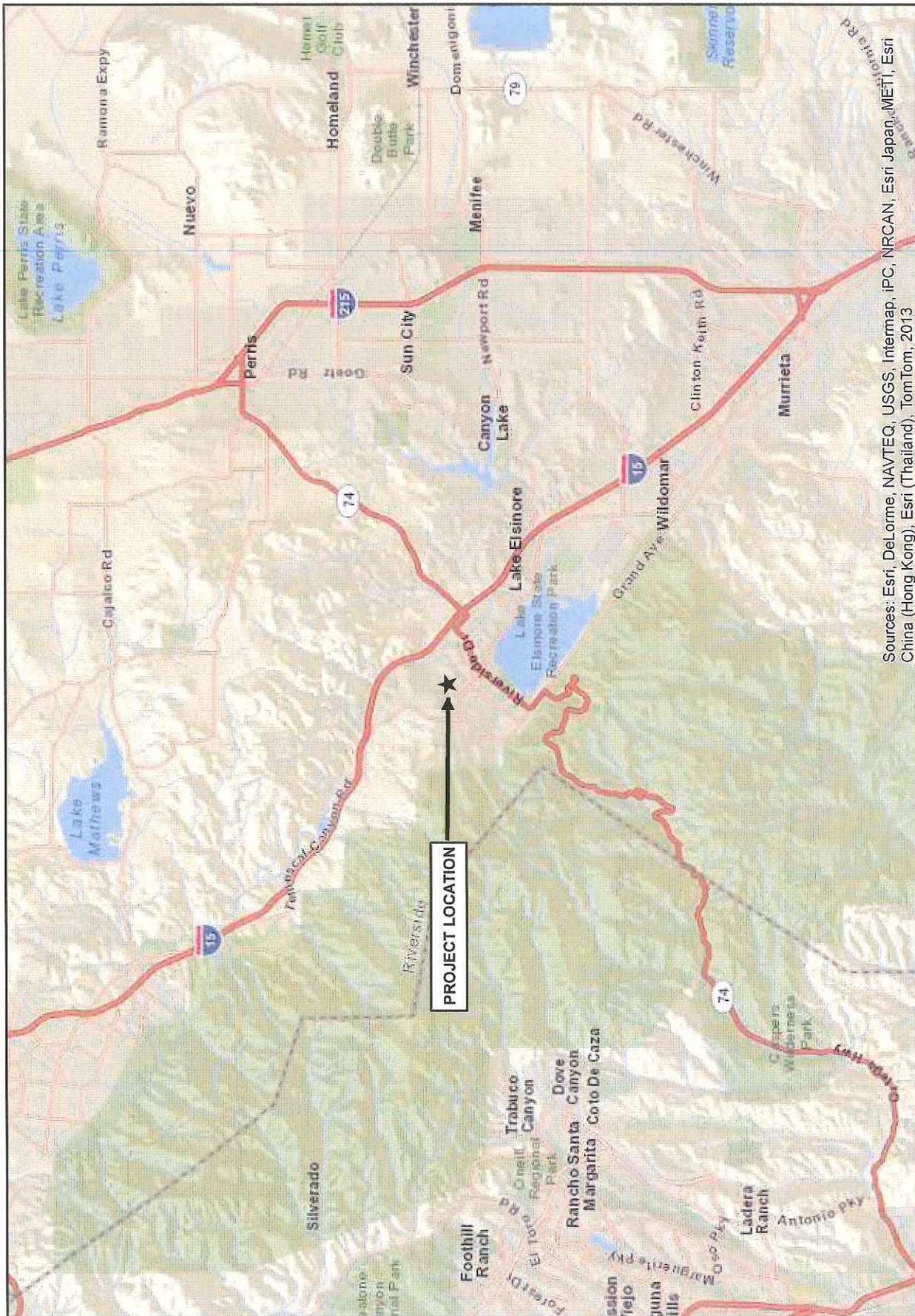
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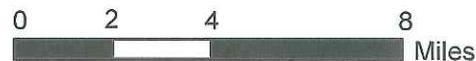
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Exhibit 1

Regional Map



Source: ESRI World Street Map



GLENN LUKOS ASSOCIATES

Exhibit 1

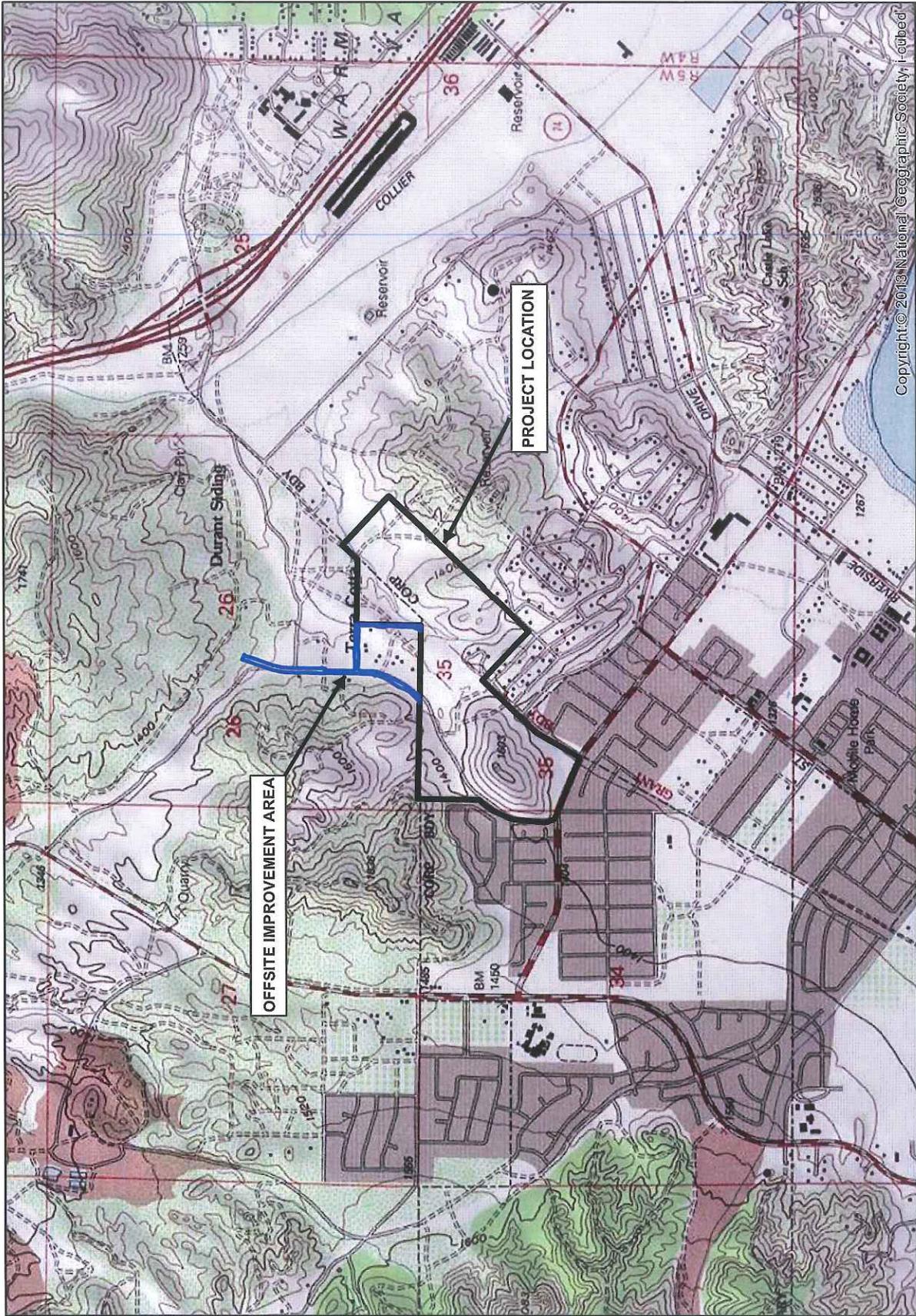
TERRACINA RESIDENTIAL DEVELOPMENT PROJECT OFFSITE IMPROVEMENTS

Regional Map

Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013

Exhibit 2

Vicinity Map



GLENN LUKOS ASSOCIATES

Exhibit 2

TERRACINA
RESIDENTIAL DEVELOPMENT PROJECT
OFFSITE IMPROVEMENTS

Vicinity Map

Adapted from USGS Lake Elsinore, CA quadrangle

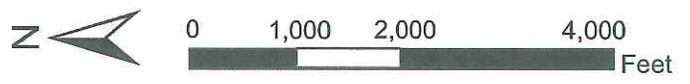


Exhibit 3

Project Site Plan

Exhibit 4

Riparian/Riverine Resources Map

Exhibit 5

Soils Map



Legend

- Project Boundary
- Offsite Development Footprint
- AbF - Altamont cobbly clay, 8 to 35 percent slopes
- CkF2 - Cieneba rocky sandy loam, 15 to 50 percent slopes, eroded
- GhC - Gorgonio loamy sand, 0 to 8 percent slopes
- HcC - Hanford coarse sandy loam, 2 to 8 percent slopes
- HcD2 - Hanford coarse sandy loam, 8 to 15 percent slopes, eroded
- PID - Placentia fine sandy loam, 5 to 15 percent slopes
- RuF - Rough broken land
- Wg - Willows silty clay, saline-alkali



TERRACINA
RESIDENTIAL DEVELOPMENT PROJECT
OFFSITE IMPROVEMENTS
Soils Map

GLENN LUKOS ASSOCIATES

Exhibit 5

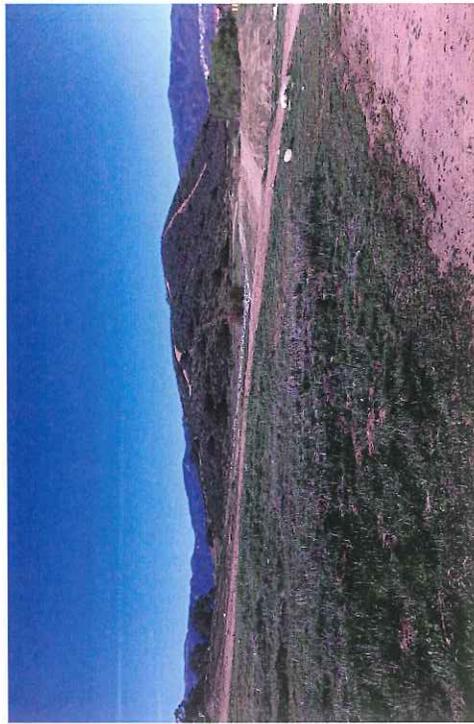
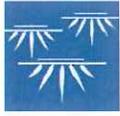


Exhibit 6

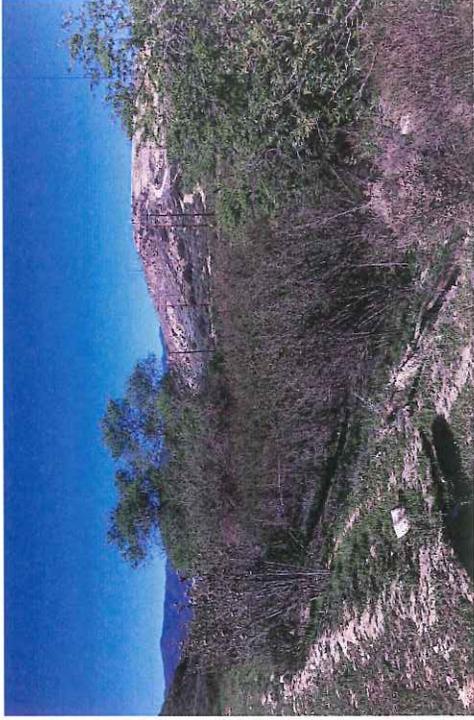
Vegetation Map

Exhibit 7

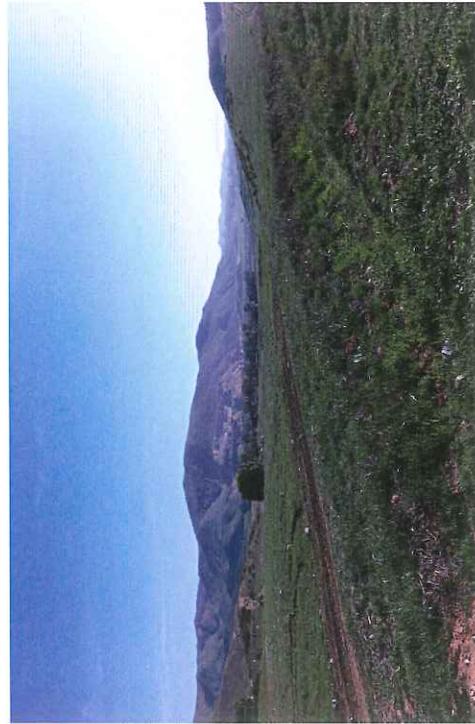
Site Photographs



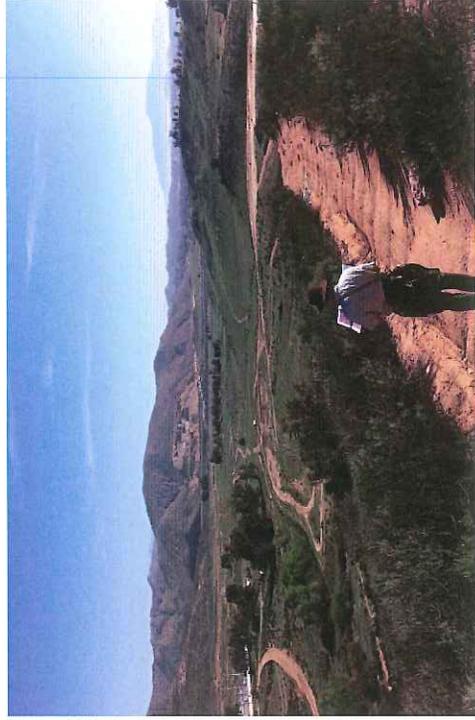
Photograph 1: Southerly view of large knoll containing Riversidean Sage Scrub located in the southwestern portion of the Project site.



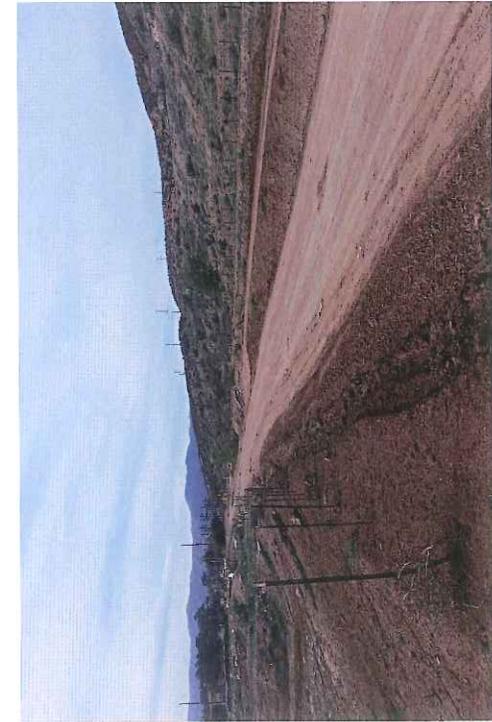
Photograph 2: Southwesterly view of the onsite Southern Willow Scrub along Drainage 1 located in western portion of the Project site.



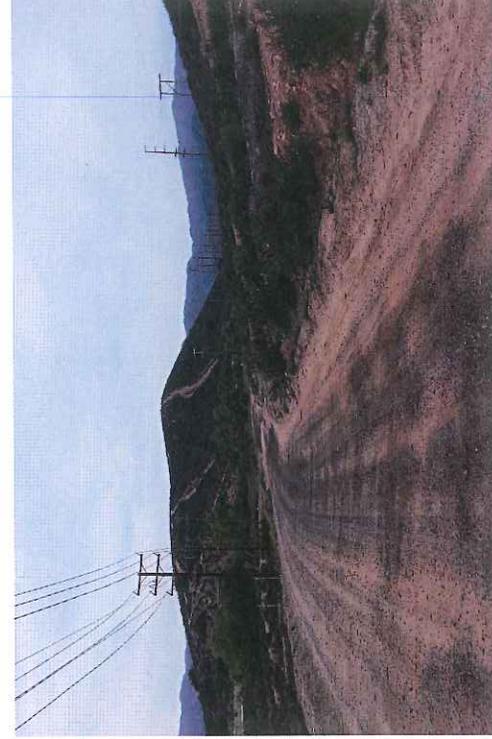
Photograph 3: Northeasterly view of non-native grasslands dominating the central and northeastern portion of the Project site.



Photograph 4: Northeasterly view of the Project site taken from the Riversidean Sage Scrub covered knoll in the south overlooking the riparian habitat to the west and the non-native grasslands to the north.



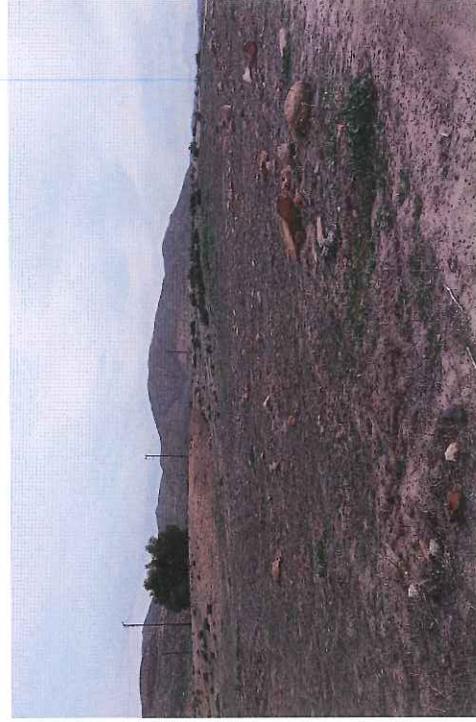
Photograph 5: Taken on April 4, 2014. Southern view of the northern half of Terra Cotta Street.



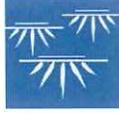
Photograph 6: Taken on April 4, 2014. Southern view of the southern half of Terra Cotta Street, bound by disturbed Riversidean sage scrub to the east and west.



Photograph 7: Taken on April 4, 2014. Western view of the proposed improvement area for Hoff Avenue, which is currently a dirt road that passes tangentially to an occupied residence before terminating at Terra Cotta Street.



Photograph 8: Taken on April 4, 2014. Southeastern view of the off-site remedial grading area dominated by non-native grassland, ruderal herbs, and disturbed Riversidean sage scrub (seen near the horizon).



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Exhibit 7

Terracina Residential Development Project (Off-Site Areas)

Site Photographs: April 4, 2014

Exhibit 8

MSHCP Riparian/Riverine Impact Map



Source: Esri, DeLorme, GeoEye, (Satellite), IGN, USGS, Aero, GeoMapping, AeroGlobe, CNR, GEBCO, Swire, and the GIS User Community

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Legend

-  Project Boundary
-  Offsite Development Footprint
-  Site Plan
-  Riverine
-  Riparian



**TERRACINA
RESIDENTIAL DEVELOPMENT PROJECT
OFFSITE IMPROVEMENTS
MSHCP Riparian/Riverine Impact Map**

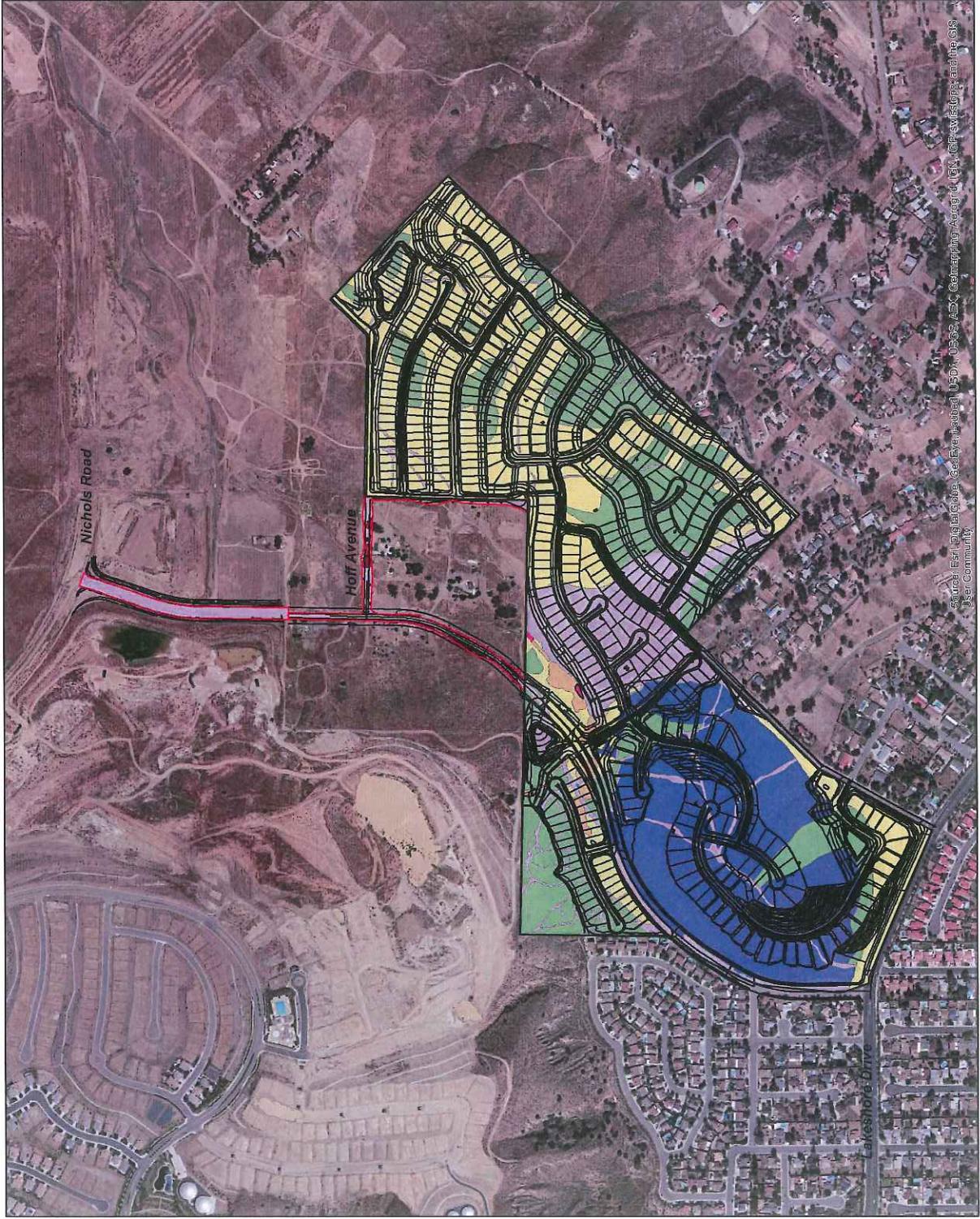
GLENN LUKOS ASSOCIATES

Exhibit 8



Exhibit 9

Vegetation Impact Map



Legend

- Project Boundary
- Offsite Development Footprint
- Site Plan
- Disturbed Riverside Sage Scrub
- Disturbed/Ruderal
- Emergent Wetland
- Non-native Grassland
- Ornamental
- Riverside Sage Scrub
- Southern Willow Scrub



**TERRACINA
RESIDENTIAL DEVELOPMENT PROJECT
OFFSITE IMPROVEMENTS**
Vegetation Impact Map



GLENN LUKOS ASSOCIATES

Exhibit 9

Source: Esri, DigitalGlobe, GeoEye, IGN, GeoEye, AeroGRID, IGN, GeoEye, GeoEye, and the GIS User Community

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