Project Boundary
Zone of Influence (ZOI)
Avocado Orchards
Greenhouses
Mixed Use Orchards
Nursery
Row/Field Crops
Vineyards

78
East Barham Drive
Mission Road
La Moree Road
Hill Valley Drive
Country Club Drive
Eden Valley Lane
Romance Road
Mt Whitney Road

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Surrounding Agricultural Land Use

VALIANO

HELIX Environmental Planning

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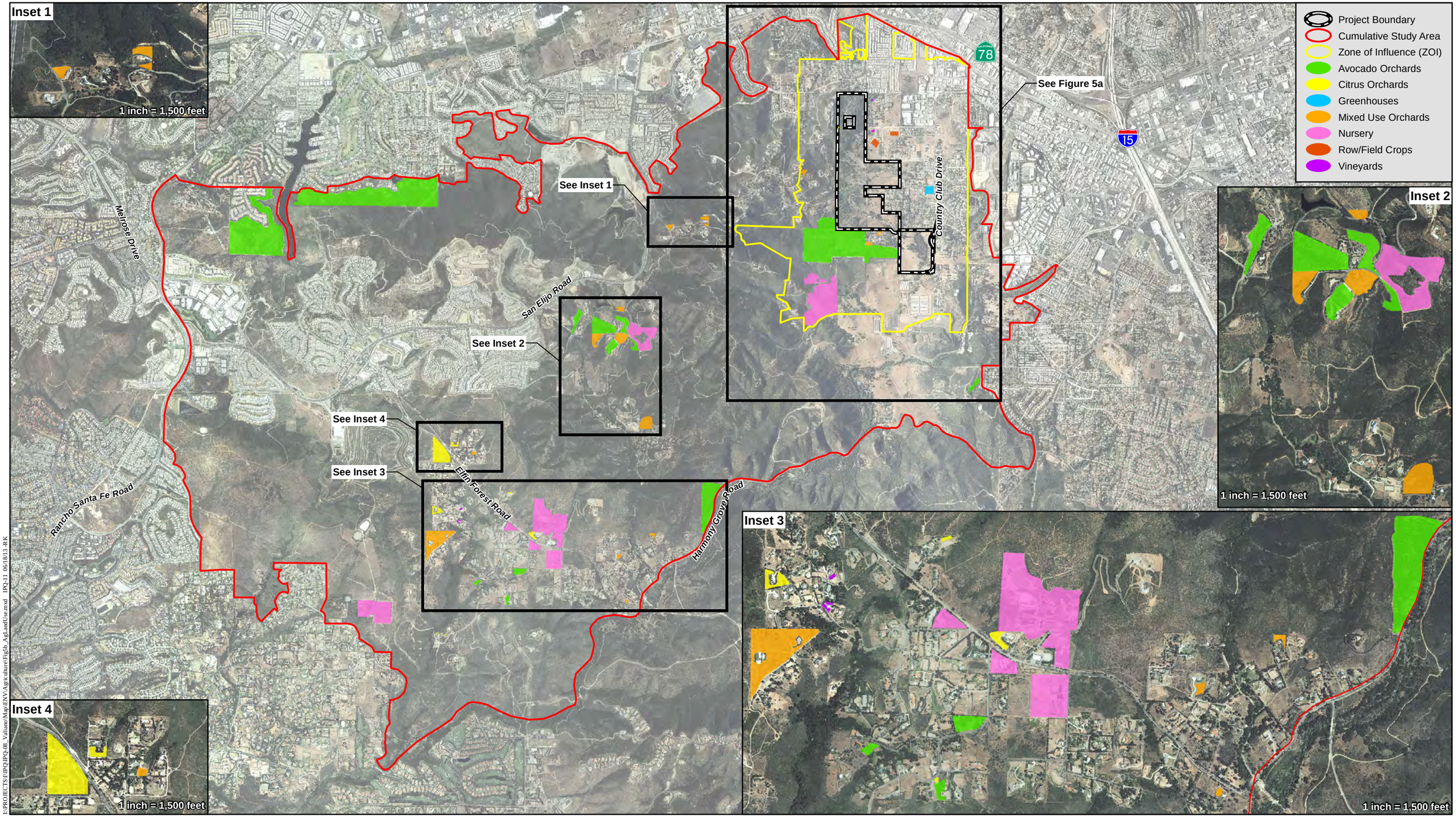
Figure 5a



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Surrounding Agricultural Land Use

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Figure 5b

Cumulative Study Area
Zone of Influence (ZOI)
Project Boundary
Farmland
Prime Farmland
Farmland of Local Importance
Unique Farmland
Other Land
Urban and Built-up Land

Melrose Drive
San Elijo Road
Country Club Drive
Elfin Forest Road
Harmony Grove Road
Rancho Santa Fe Road
78
15

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FMMP Important Farmland Map

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Figure 6

Knob Hill Park approximately 1.2 miles to the northeast; and (8) California State University San Marcos approximately 1.3 miles to the west. None of the described public lands are located within the Project site, with only Jack's Pond Park located within the related ZOI.

One Williamson Act contract parcel and two agricultural preserves are also located south of the Project, including one overlying contract/preserve located within the ZOI. This existing contract/preserve site (Contract No. 77-45, Preserve No. 95) is owned by the Harry and Shirley Houtman Trust. Based on field reconnaissance and a previous investigation of this property (HELIX 2006), it is not currently in agricultural use. Additional discussion of the Williamson Act, as well as the noted contract lands and agricultural preserves, is provided below in Section 1.4.3.

1.4.2 Description of On-site Conditions and Agricultural Resources

On-site topography is generally characterized by a north-south trending ridge extending through much of the western portion of the property, a large knoll in the southeastern-most area, several larger drainages flanking these upland features, and generally level terrain in other on-site areas. On-site elevations range from approximately 1,013 feet AMSL along the ridge top in the northwestern portion of the site, to 614 feet AMSL along the southeastern property boundary. Surface drainage from most of the Project site flows primarily to the east and south, with some variability in direction due to local topography. Associated off-site flows continue generally south before ultimately entering Escondido Creek. The northernmost portion of the site drains north and west through a number of small unnamed drainages, and eventually flows into San Marcos Creek (with this area including a portion of the previously described 36.5-acre agricultural easement and other areas not proposed for development under the Proposed Project design). The site is currently used for commercial agriculture, with extensive areas of active avocado orchards (portions of which were damaged or destroyed in a 2014 wildfire event), as well as four minor apiary (bee keeping) sites. As described below in this section under History of Agricultural Use, commercial agricultural operations on the Project site were initially conducted in the early part of the 20th Century, with current operations having occurred more or less continuously on site since the late 1960s or early 1970s.

The determination of on-site agricultural resources was based on the following efforts/data sources: (1) site visits conducted on February 7 and 9, 2013; (2) review of current/historic aerial photographs dated 2012, 2005, 1995/1994, 1990, 1980, 1974, 1963, 1953, 1947, 1929/1928, and 1928; (3) review of the previously referenced Project Cultural Resources and Phase I/II ESA reports; (4) review of the Project Biotechnical Report (HELIX 2014a); and (5) review of FMMP Important Farmland maps, and Prime Farmland/Farmland of Statewide Importance candidate soils.

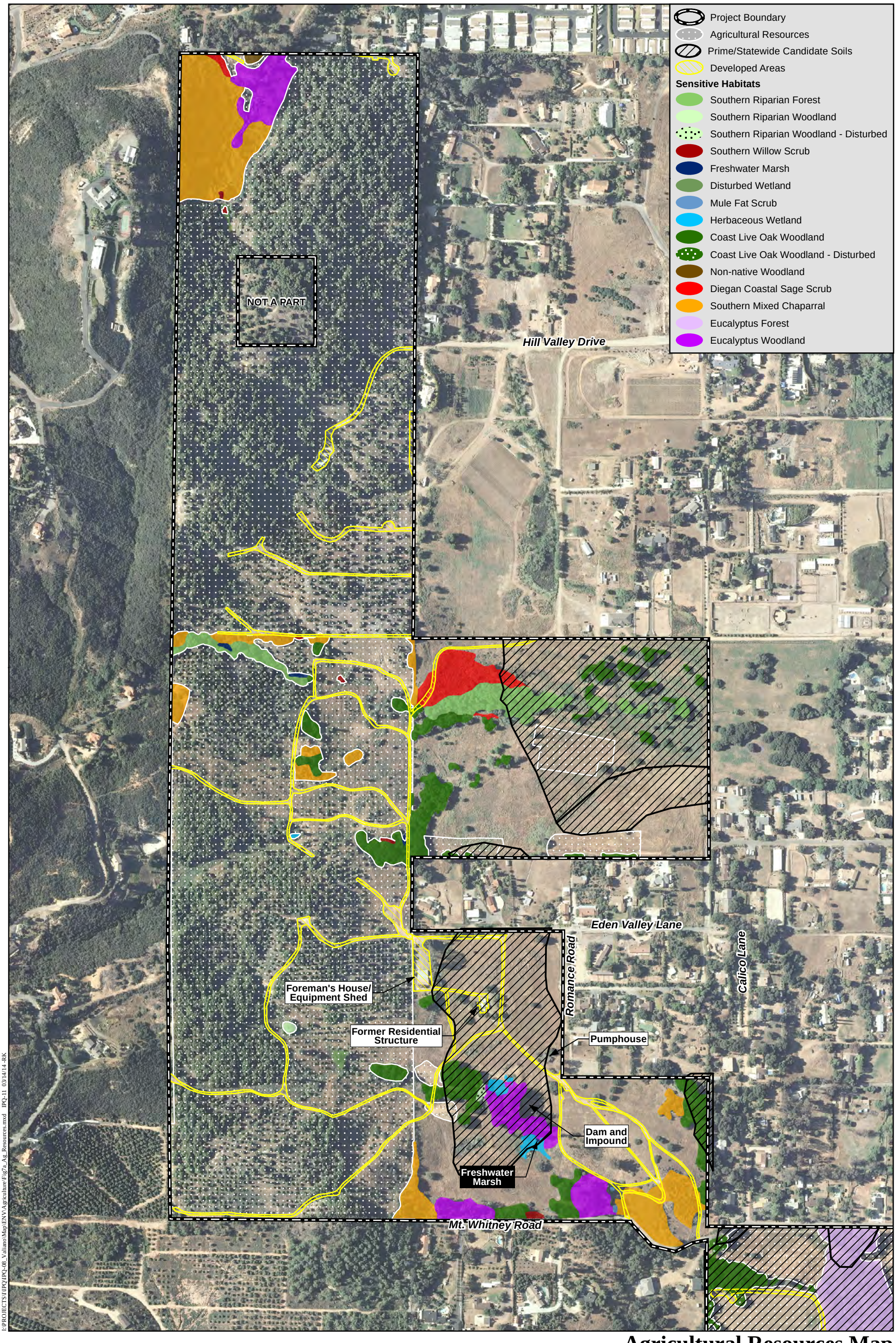
For purposes of this analysis, and pursuant to Attachment A of the County Agricultural Guidelines (2007), agricultural resources are generally defined to include areas that are available and viable for agricultural use, and include: (1) active agricultural operations; (2) areas designated as, and meeting the associated definition of, FMMP Prime Farmland, Farmland of Statewide Importance, Unique Farmland or Farmland of Local Importance (as defined below in this section); and (3) areas with a history of agricultural production based on data sources such as

aerial photographs. Identified agricultural resources within the Project site encompass a total of approximately 137.16 acres, including areas used currently and/or historically for agricultural operations (orchards, row/field crops, and apiary sites, refer to Section 1.4.1), as well as portions of the FMMP-designated Unique Farmland and Farmland of Local Importance (Figures 7a and 7b). Because the agricultural use areas and Important Farmland designations overlap in several portions of the site, the total on-site agricultural resource acreage is less than the sum of the individual acreages for these two categories. Specifically, the 137.16 acres of agricultural resources within the site encompass: (1) 116.96 acres of active avocado orchards; (2) 0.4 acre of active apiary uses; (3) 100.5 acres of Unique Farmland; (4) 27.3 acres of Farmland of Local Importance; (5) 12.9 acres of historic (circa 1928) orchard use in the southeastern portion of the site; (6) 1.59 acres of historic orchard use in the east-central portion of the site; and (7) 1.35 acres of historic row/field crop production in the east-central portion of the site (refer to the discussion of historical agricultural use below in this section for additional information). Portions of the site not identified as agricultural resources include: (1) areas that do not encompass active agricultural use or applicable FMMP designations, as noted above (and with no history of agricultural use); (2) developed and unavailable areas such as roads, structures and power line easements; (3) sensitive biological habitats; and (4) eucalyptus forest and woodland habitats (Figures 7a and 7b). The exclusion of these areas from on-site agricultural resources is due to the fact that they have likely not been previously used for agriculture, as well as their assumed unavailability for future agricultural use based on the following considerations:

- The underlying soil quality in developed areas has likely been compromised through grading, compaction and/or fill placement (per the discussion in Section 3.1.3 of the County Guidelines, refer to Footnote 9), and areas within transmission line easements are unavailable for current or future agricultural use.

- Sensitive habitat areas would either be precluded from agricultural use based on environmental concerns, or would require mitigation that would likely be prohibitively expensive (e.g., habitat restoration and/or the purchase of off-site mitigation credits). Specifically, in the Project site area, approximate mitigation costs for purchase of select native upland and wetland habitat credits would be as follows: (1) for Diegan coastal sage scrub (DCSS), estimated costs at the closest mitigation bank likely to be used for the Proposed Project (Red Mountain) would be approximately $35,000 per acre for unoccupied habitat (i.e., unoccupied by sensitive species including the California gnatcatcher); and (2) for most wetland habitats, estimated costs in the Escondido region would range between approximately $350,000 and $500,000 per acre, with potential mitigation bank sites including Red Mountain, Brook Forest, San Luis Rey and Moosa Creek (HELIX 2014b).

- Removal of eucalyptus forest or woodland habitats to accommodate commercial agriculture would likely be prohibitively expensive, due to requirements including tree and stump/root system removal. Specifically, costs for a recent (2012) eucalyptus removal effort on a nearby property (Harmony Grove Village) ranged between approximately $50,000 to $75,000 per acre (including tree/stump/root system removal and disposal), based on site-specific conditions such as access and equipment requirements (HELIX 2014c). While the referenced effort entailed more difficult access



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Agricultural Resources Map

VALIANO

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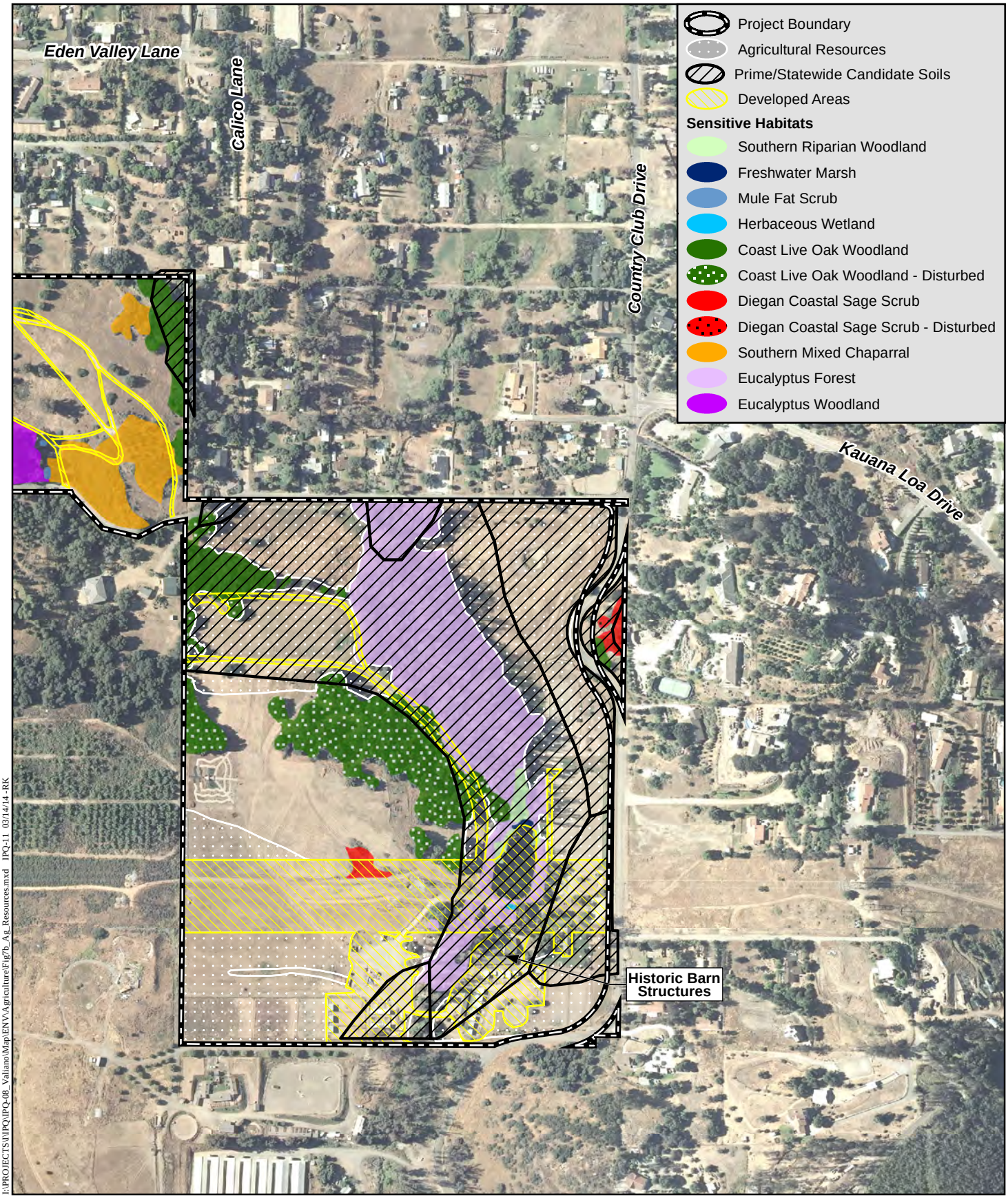
Figure 7a



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Agricultural Resources Map

VALIANO

HELIX Environmental Planning

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Figure 7b

conditions than the Proposed Project site, even costs at or below the low end of the listed range would likely represent a substantial economic burden to implementing agricultural operations in areas of eucalyptus forest or woodland habitat on the Project site.

On-site soils, Important Farmlands, agricultural history, climate and water resources associated with the Project site (and the identified 137.16 acres of on-site agricultural resources) are described below, along with Williamson Act contract/agricultural preserves and Prime Agricultural Land considerations pursuant to LAFCO criteria.

Soils

Soils within the Project site and vicinity have been mapped by the NRCS (formerly the SCS, 1973). As shown on Figure 8 and Table 1, the Project site includes nine distinct soil series and 14 individual soil types. The SCS soil classification system also includes assessments of Land Capability Classification and Storie Index ratings, with summary definitions provided below and on-site soil ratings included in Table 1. Five of the identified soil types within the Project site are identified as meeting the criteria for CDC *FMMP Soil Candidate Listing for Prime Farmland and Farmland of Statewide Importance* (2010), as depicted in Table 1. While the entire site has been mapped for topsoils as shown on Figure 8, approximately 16.57 acres have been developed for uses such as structures and roads, with the underlying soils likely altered or lost due to grading, compaction, and/or placement of fill.

Storie Index

The Storie Index designation "[e]xpresses numerically the relative degree of suitability, or value, of a soil for general intensive agriculture. The rating is based on soil characteristics only. It does not take into account other factors such as the availability of water for irrigation, climate, and distance from markets, which might determine the desirability of growing specific crops in a given locality" (SCS 1973). The four factors that represent the inherent characteristics and qualities of the soil (profile characteristics, texture of surface soil, slope, and other conditions that limit use of the soil) are considered in the index rating. The final rating can fall between 100 (excellent) and less than 10 (very poor), with Storie Index ratings for soils within the Project site shown in Table 1. The noted ratings of <5 to 81 represent Grade 1 through Grade 6 soils, with the following characterizations provided from the Soil Survey (SCS 1973): (1) Grade 1 soils (34.58 acres on site) have few or no limitations that restrict their use for crops; (2) Grade 2 soils (0.67 acre onsite) are suitable for most crops but exhibit minor limitations that narrow the choices; (3) Grade 3 soils (60.33 acres onsite) are suitable for a few, or special crops, with management; (4) Grade 4 soils (9.06 acres onsite) are severely limited for all crops and require special management; (5) Grade 5 soils (86.22 acres onsite) are not suited for cultivated crops but may be used for pasture or range; and (6) Grade 6 soils (47.8 acres onsite) are generally not suitable for agriculture.

Land Capability Classification

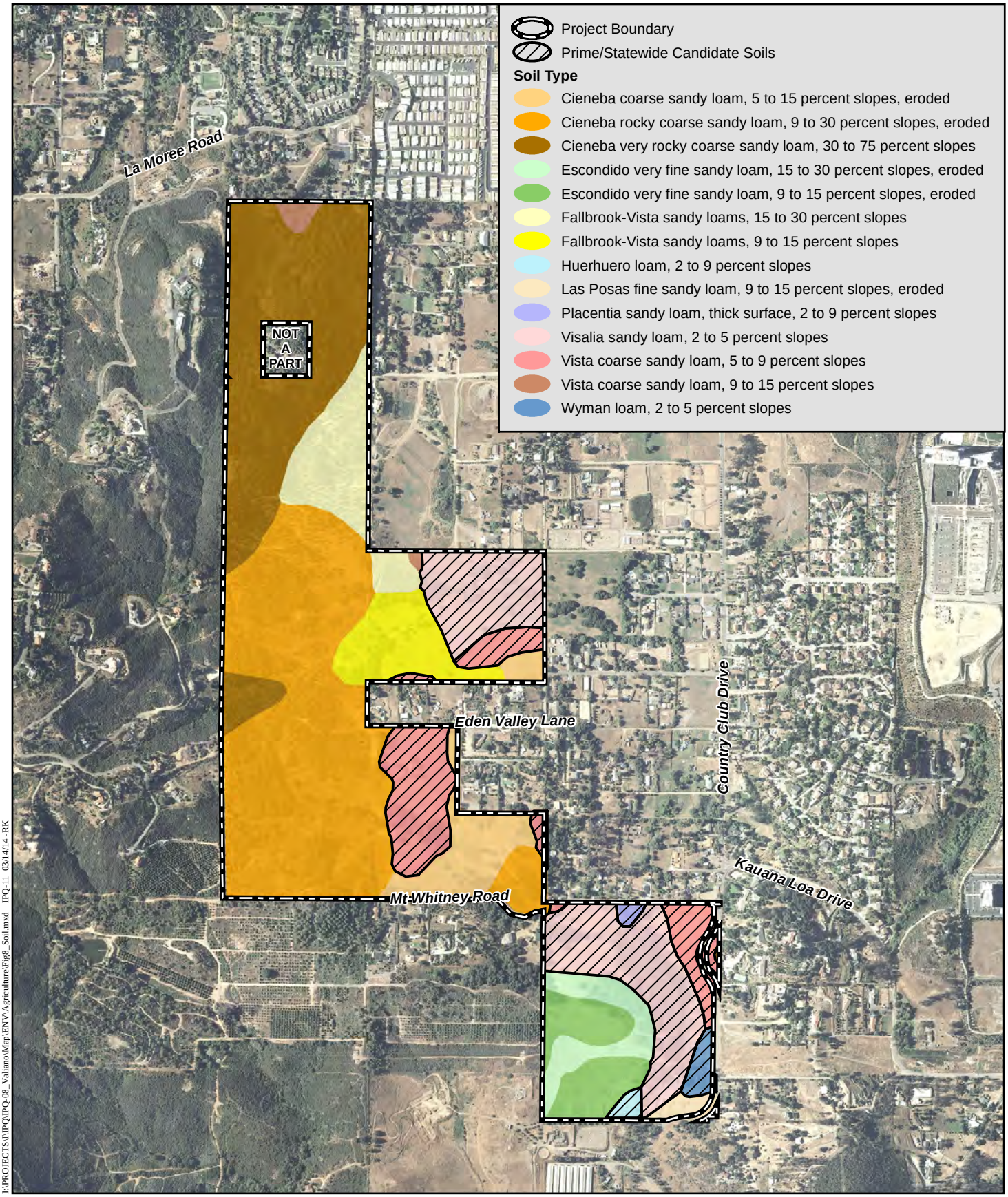
The Land Capability Classification concept is defined as follows in the *San Diego Area Soil Survey* (SCS 1973):

> Capability groupings show, in a general way, the suitability of soils for most kinds of field crops. The groups are made according to the limitations of the soils when used for field crops, the risk of damage when they are used, and the way they respond to treatment. The grouping does not take into account major and generally expensive landforming that would change slope, depth, or other characteristics of the soils; does not take into consideration possible but unlikely major reclamation projects; and does not apply to rice, cranberries, horticultural crops, or other crops requiring special management. In the capability system, all kinds of soils are grouped at three levels: the capability class (Roman numeral designation), the subclass (letter designation), and the unit (Arabic numeral designation).

Soils are divided into Classes I through VIII, with these designations representing a range in quality from Class I soils that have few limitations for agricultural use, to Class VIII soils that have no commercial crop production capability. Capability Classes are further divided into subclasses and capability units to define limitations for agricultural use. Subclasses indicate soil limitations based on erodibility (e), water regime (w), depth and/or texture (s), and climate area (c). Capability units further reveal the main limitation for the placement of a soil into the given class and subclass. Numerals used to designate units within the classes and subclasses include: (0) sand and gravel in the substratum; (1) erosion hazard; (2) wetness caused by poor drainage or flooding; (3) slow or very slow permeability; (4) coarse texture or excessive gravel; (5) fine or very fine textured soil; (6) salts or alkali; (7) cobblestones, stones or rocks; (8) nearly impervious bedrock or hardpan; and (9) toxicity or low fertility. Capability classifications within the Project site are shown in Table 1, with the associated ratings indicating soils with moderate to severe limitations based on the noted criteria (SCS 1973).

Table 1
ON-SITE SOILS, LAND CAPABILITY UNITS, STORIE INDEX RATINGS, CROP SUITABILITY AND CANDIDATE SOIL STATUS

Soil Symbol[1]	Capability Unit	Storie Index Rating/Grade	Acreage On Site	Crop Suitability	Prime/Statewide Candidate Soil?
ClD2	VIe-1	16/5	12.15	Fair for avocados and flowers.	No
CmE2	VIIs-8	10/5	74.07	N/A	No
CmrG	VIIs-8	<5/6	47.8	N/A	No
EsE2	Vie-8	32/4	7.57	Fair for citrus.	No
EsD2	IVe-8	43/3	11.05	Fair for citrus, tomatoes, and flowers.	No



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NRCS Soils Map

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Figure 8

Table 1 (cont.)
ON-SITE SOILS, LAND CAPABILITY UNITS, STORIE INDEX RATINGS, CROP SUITABILITY AND CANDIDATE SOIL STATUS

Soil Symbol[1]	Capability Unit	Storie Index Rating/Grade	Acreage On Site	Crop Suitability	Prime/Statewide Candidate Soil?
FvE	VIe-1	45/3	14.86	Fair for avocados and citrus.	No
FvD	IVe-1	54/3	11.67	Fair for avocados, citrus, tomatoes, and flowers.	No
HrC	IIIe-3	41/3	1.03	Good for tomatoes; fair for truck crops and flowers.	Yes
LpD2	IIIe-1	34/4	1.49	Good for flowers; fair for citrus, truck crops, and tomatoes.	No
PfC	IIIe-3	60/2	0.67	Good for flowers; fair for tomatoes.	Yes
VaB	IIe-1	81/1	32.71	Good for avocados, citrus, truck crops, and flowers; fair for tomatoes.	Yes
VsC	IIIe-1	45/3	20.19	Good for avocados and flowers; fair for citrus, truck crops, and tomatoes.	Yes
VsD	IVe-1	43/3	1.53	Good for avocados; fair for citrus, tomatoes, and flowers.	No
WmB	IIe-1	81/1	1.87	Fair for citrus, truck crops, tomatoes, and flowers	Yes
		TOTAL	**238.66[2]**	--	

Source: SCS (1973)
[1] Refer to Figure 8 for soil locations and Appendix B for soil names.
[2] Totals may vary slightly from those in other portions of this report due to rounding.
N/A = No listing in the referenced Soil Survey.

FMMP Important Farmland Designations

The CDC Division of Land Resource Protection, FMMP, produces Important Farmland maps and statistical data as described in Section 1.4.1. Four of the previously listed eight Important Farmland designations are located within the Project site, including Unique Farmland, Farmland of Local Importance, Urban and Built-up Land, and Other Land. These designations, are summarized below, and are shown on Figure 6 and Table 2 (along with mapped FMMP Important Farmlands in the Project site ZOI and the agricultural cumulative study area, refer to

Sections 1.4.3 and 4.0). Additionally, although not present on the Project site, the definitions of Prime Farmland and Farmland of Statewide Importance are also provided below.

Important Farmland Designations Within the Project Site

Unique Farmland

Unique Farmland includes areas that do not meet the criteria for Prime Farmland or Farmland of Statewide Importance (as defined in Section 1.4.3), but that have been used for the production of specific high economic value crops during the two update cycles prior to the mapping date. It has the special combination of soil quality, location, growing season, and moisture supply needed to produce sustained high quality and/or high yields of a specific crop when treated and managed according to current farming methods. Examples of such crops may include oranges, olives, avocados, rice, grapes, and cut flowers. Approximately 100.5 acres of Unique Farmland are present within the Project site, with these areas concentrated mainly in the western and northern portions of the property and associated on-site agricultural uses consisting of avocado orchards.

Farmland of Local Importance

Farmland of Local Importance includes areas other than Prime Farmland, Farmland of Statewide Importance or Unique Farmland that are either currently producing crops, have the capability of such production, or are used for the production of confined livestock. Farmland of Local Importance may be important to local economies due to its productivity or value, and is defined by each county's local advisory committee and adopted by its Board of Supervisors. For San Diego County, the definition of Farmland of Local Importance is given by the CDC (2007b) as:

> Land that meets all the characteristics of Prime and Statewide, with the exception of irrigation. Farmlands not covered by the above categories but are of significant economic importance to the county. They have a history of good production for locally adapted crops. The soils are grouped in types that are suited for truck crops (such as tomatoes, strawberries, cucumbers, potatoes, celery, squash, romaine lettuce, and cauliflower) and soils suited for orchard crops (avocados and citrus).

Approximately 27.32 acres of Farmland of Local Importance are mapped in the western and northern portions of the Project site, with associated agricultural uses consisting of avocado orchards.

Urban and Built-up Land

Urban and Built-up Land includes areas used for residential, industrial, commercial, institutional, and other developed purposes. Transportation facilities (e.g., highways and railroads) and vacant (non-agricultural) areas surrounded by urban development and less than 40 acres in size are mapped as part of associated Urban and Built-up Land, while uses such as farmsteads, commercial feedlots, and poultry facilities are not included within this designation.