AGRICULTURAL RESOURCES TECHNICAL REPORT
for the
Newland Sierra Project
San Diego County, California

Prepared for:

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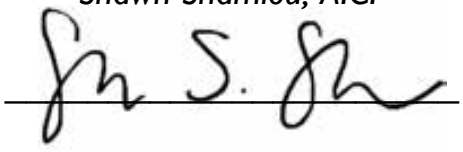

JUNE 2017

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GLOSSARY OF TERMS AND ACRONYMS

amsl	above mean sea level
CEQA	California Environmental Quality Act
DOC	Department of Conservation
FMMP	Farmland Mapping and Monitoring Program
I	Interstate
LARA	Model Local Agricultural Resource Assessment Model
LCC	Land Capability Classification
PSR	Project Study Report
SanGIS	San Diego Geographic Information Source
SDCWA	San Diego County Water Authority
SI	Storie Index
SR	State Route
USDA	United States Department of Agriculture
ZOI	Zone of Influence boundary as described in the LARA Model

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SUMMARY

The proposed Newland Sierra Project (hereafter referred to as "project" or "proposed project") would be located on approximately 1,985 acres within an unincorporated portion of the County of San Diego, within the North County Metropolitan Subregional Plan area. The North County Metropolitan Subregional Plan area includes the communities of Hidden Meadows and Twin Oaks, with the project Site being located in the community of Twin Oaks. The project Site is directly west of Interstate (I) 15, north of State Route (SR) 78, and south of SR-76. The cities of Escondido and San Marcos are approximately 1 mile south of the Site.

The proposed project would develop 2,135 residential units and would include a General Plan Amendment that would allow a greater intensity of clustered development beyond current planned land uses. The proposed project would include a variety of housing types—some of which would be designed with grade-adaptive architecture—to meet the varied needs of anticipated residents. The location and design of the planning areas strategically preserve open space. The Biological Open Space Preserve would consist of approximately 1,209 acres within two large continuous blocks of key biological resources situated within the northern half and along the eastern boundary of the Site. Additionally, a large third block of open space in the center of the Community would connect the abovementioned blocks of open space to open space located east and south of the Site. The project would also include a 212-acre off-site mitigation parcel located in Ramona.

The region surrounding the project Site has historically been used for agricultural uses, including orchards and vineyards; however, the project Site does not currently contain any active agricultural operations due to the steep slopes and substantial rock outcroppings found throughout the project Site.

As described in Section 2.1, LARA Model, the project would not qualify as having a history of agricultural production per the County of San Diego's Guidelines for Determining Significance – Agricultural Resources, and would not result in the Site being designated as an agricultural resource; a LARA Model analysis was not required to be conducted for the project Site. As such, the project Site is not considered an important agricultural resource. Additionally, the proposed project would not impact Williamson Act Contract lands, County of San Diego agricultural preserves, or lands designated Prime Farmland or Farmland of Statewide Importance, and the Site does not have any active irrigated croplands or other crop production. Therefore, the project's impacts to on-site agricultural resources would be less than significant.

The proposed project would involve various off-site improvements, including widening or other improvements to various roadways that would have potential direct impacts to approximately

5.82 acres of off-site important agricultural soils from these off-site improvements. The proposed project would include mitigation measure M-AGR-1 to fully mitigate these potential direct off-site impacts through payments into the County of San Diego's Purchase of Agricultural Easements program. With incorporation of mitigation measure M-AGR-1, direct off-site impacts would be less than significant.

In addition, the project would have less-than-significant direct impacts on surrounding agricultural resources based on the criteria evaluated in Section 3, below, due to the type of surrounding active agricultural operations, distance from these active agricultural operations, biological and fire buffers from surrounding agricultural uses, and the inclusion of agricultural features through the project Site (e.g., professionally managed vineyards and Community gardens). These features would buffer development on the project Site from surrounding agricultural areas, and would reduce potential land use conflicts with the existing agricultural operations surrounding the project Site. As described in Section 4, below, the proposed project would not conflict with applicable General Plan policies related to agriculture. Furthermore, cumulative impacts would be less than significant because the project Site was not determined to be an important agricultural resource, would not have significant indirect impacts to agricultural resources, and would not conflict with agricultural zoning or a Williamson Act Contract, as detailed in Section 5, below.

1 INTRODUCTION

1.1 Purpose of the Report

The purpose of this report is to determine the importance of on-site agricultural resources based on County of San Diego (County) criteria and to assess the potential impacts to those resources, determine potential impacts to surrounding active agricultural operations, address consistency with General Plan policies pertaining to agriculture, determine the significance of cumulative impacts to agricultural resource, and identify design elements or mitigation measures that would minimize significant adverse effects of the proposed Newland Sierra Project (hereafter referred to as "project" or "proposed project").

1.2 Project Location and Description

Location and Physical Setting

The proposed project Site is located within an unincorporated portion of the County of San Diego within the North County Metropolitan Subregional Plan area, as shown in Figure 1, Regional Map. The North County Metropolitan Subregional Plan area is composed of many non-contiguous "island" areas interspersed among the cities of Escondido, San Diego, San Marcos, Vista, and Oceanside, with the most easterly portion adjacent to Valley Center. The North County Metropolitan Subregional Plan area includes the communities of Hidden Meadows and Twin Oaks, with the majority of the project Site being located in the community of Twin Oaks. The project Site is directly west of Interstate (I) 15, north of State Route (SR) 78, and south of SR-76. The cities of Escondido and San Marcos are approximately 1 mile south of the Site.

As shown in Figure 2, Vicinity Map, the project Site consists of approximately 1,985 acres and is bounded by I-15 on the east, Deer Springs Road (County Road S12) on the south, and Twin Oaks Valley Road on the west, with a small portion of the northwestern edge of the Site traversed by Twin Oaks Valley Road (see Appendix A for Assessor's Parcel Numbers and acreages).

The project Site is located within the northern portion of the Merriam Mountains, a narrow chain of low mountains generally running north/south with a variety of east/west-trending ridgelines and scattered peaks. These mountains originate near the northern end of the urban parts of the city of Escondido and are bordered by Gopher Canyon Road to the north, I-15 to the east, and Twin Oaks Valley Road to the west. The Merriam Mountains are approximately 8.5 miles long, and the project Site is situated on approximately 3 miles of the northern portion of the Merriam Mountains.

Natural topography of the Site is composed of hills and valleys dominated by significant rock outcroppings with moderate to steeply sloping terrain. On-site elevation ranges from approximately 660 feet above mean sea level (amsl) near the northwester limits of the project

Site at Twin Oaks Valley Road to approximately 1,750 feet amsl in the west central portion of the property. Portions of the Site contain Resource Protection Ordinance (RPO)-defined steep slope lands in excess of 25% slope. Prominent, generally east/west-trending ridgelines divide the Site into five separate drainage basins, which are tributaries to Moosa Canyon, Gopher Canyon, and San Marcos Creek. Gopher Canyon is located north of the project Site and a small portion of the South Fork of Gopher Canyon Creek runs southeast/northwest through the northwestern area of the Site, eventually meeting the San Luis Rey River. Both Gopher Canyon and the San Marcos Mountains show favorable attributes as habitat and corridors for larger wildlife.

The project Site is primarily undeveloped. A number of dirt roads and trails that provide access to each parcel and service roads for the existing water infrastructure traverse the project Site. Portions of the Site have been and continue to be used for various unauthorized land uses, including horseback riding, hiking, mountain biking, off-roading, motorcycling, shooting, and occasional dumping. An abandoned quarry is located in the northwest portion of the Site fronting Twin Oaks Valley Road, and an abandoned private landing strip is located in the north central portion of the Site.

Surrounding land uses to the north, west, and south of the project Site include large-lot, single-family development, and avocado groves. Many of the prominent ridges surrounding the Site are occupied by existing homes. Lawrence Welk Village and the community of Hidden Meadows are located to the east of the project Site across I-15. South of the Site is a mobile home park, Golden Door Properties LLC, and estate development along the border of the City of San Marcos and the unincorporated portion of the County of San Diego.

Project Description

The Newland Sierra Project (also referred herein as "Community" or "project") is a 1,985-acre mixed-use community within the unincorporated area of San Diego County designed in accordance with the County of San Diego General Plan Community Development Model. The majority of the Community is within the Twin Oaks community of the North County Metropolitan Subregional Plan area, and a portion is within the Bonsall Community Planning area. The Specific Plan includes a residential component consisting of 2,135 dwelling units as shown in Figure 3, Site Plan, which equates to an overall density of 1.08 dwelling units per acre (du/ac) over the entire 1,985 acres. The Community Development Model influenced the design and pattern of the seven neighborhoods (also referred to as "planning areas") with the highest densities located in the Town Center. The Town Center includes a maximum of 81,000 square feet of general commercial uses, as well as educational and park uses. The Community also includes open space, parks, pocket parks, overlooks, trails, bike lanes, pathways, and a 6-acre school site.

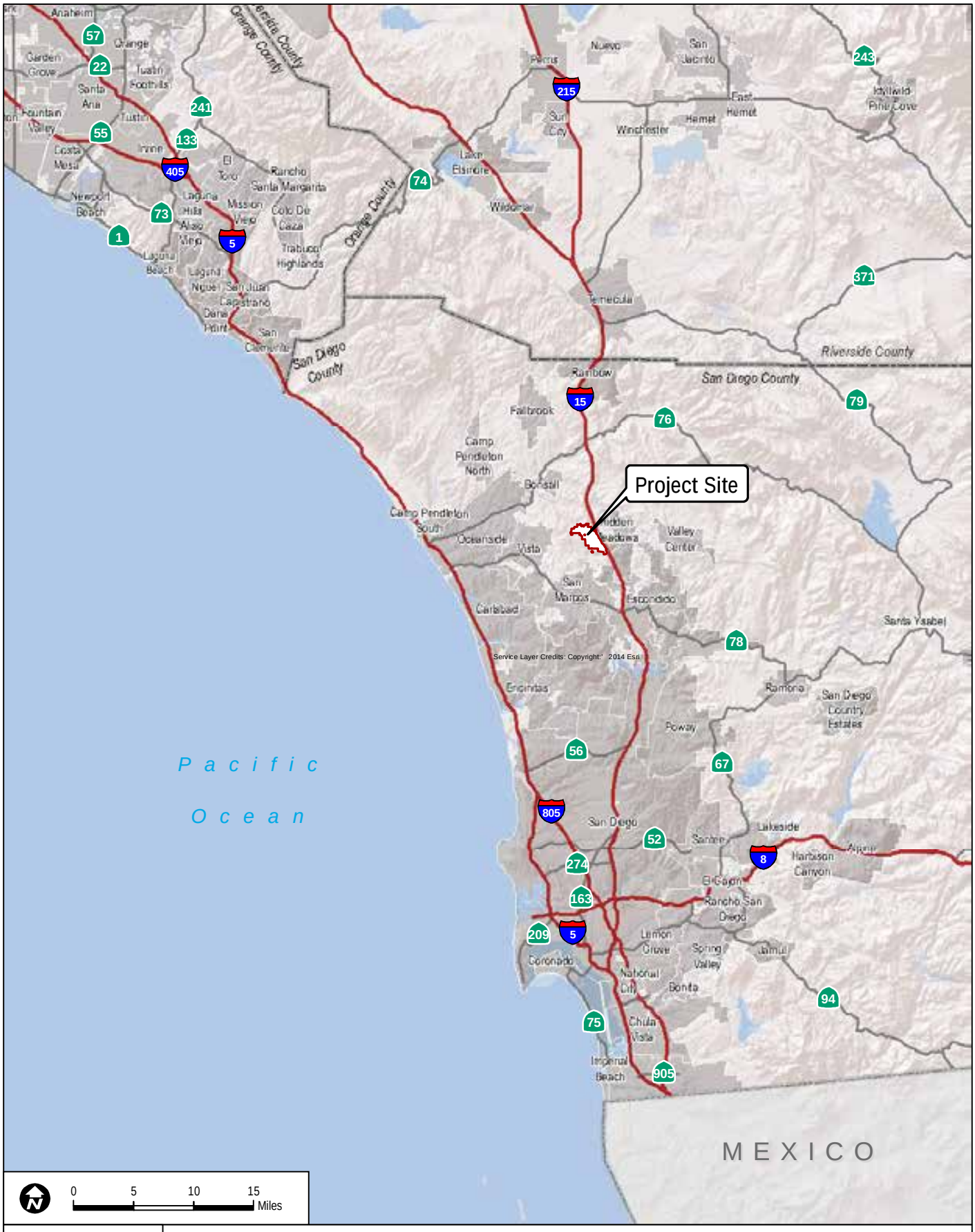

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FIGURE 1

Regional Map

Agricultural Resources Report for the Newland Sierra Project Agricultural Resources Report

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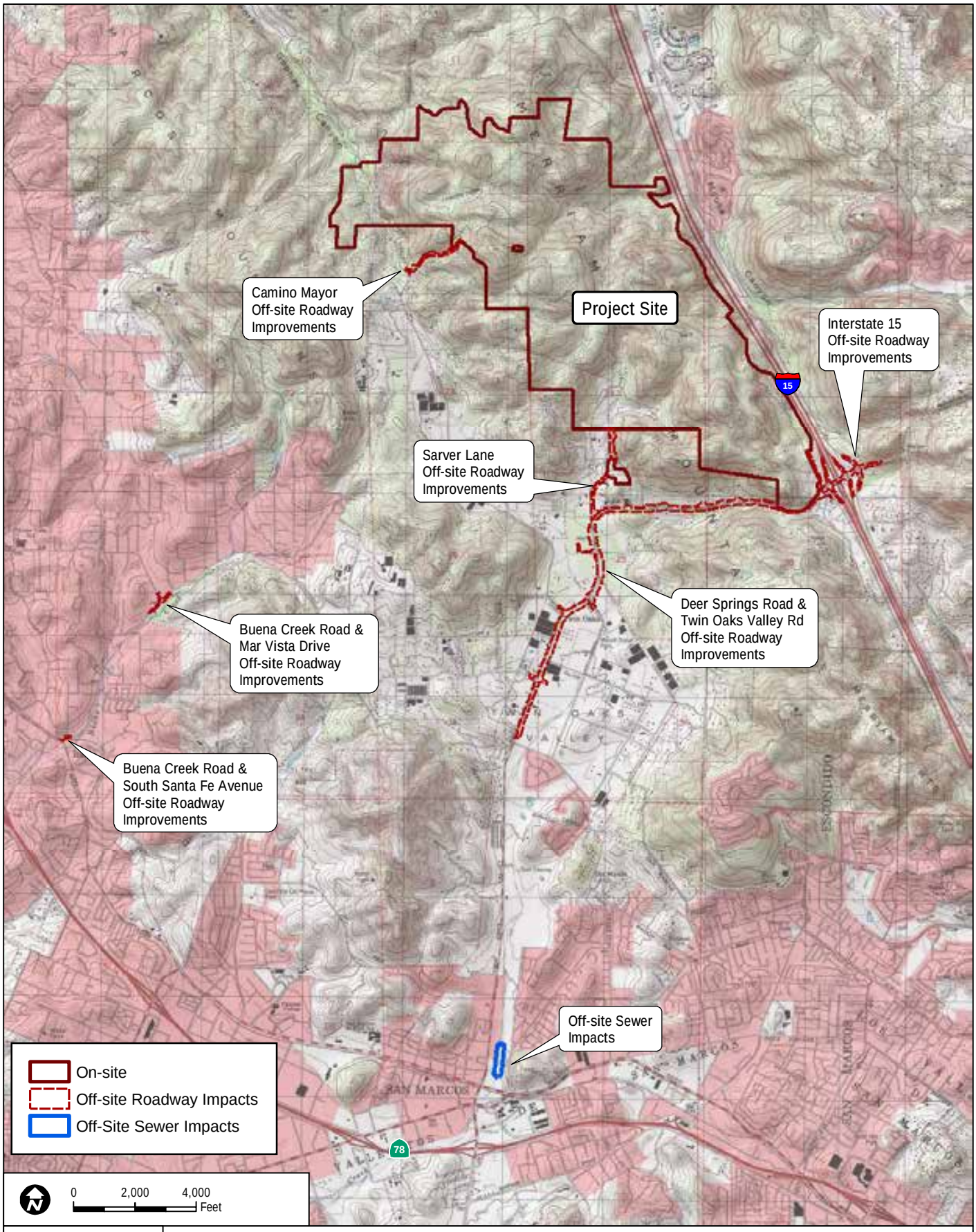

SOURCE: USGS 7.5-Minute Series San Marcos Quadrangle.

FIGURE 2

Vicinity Map

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Agricultural Resources Report for the Newland Sierra Project

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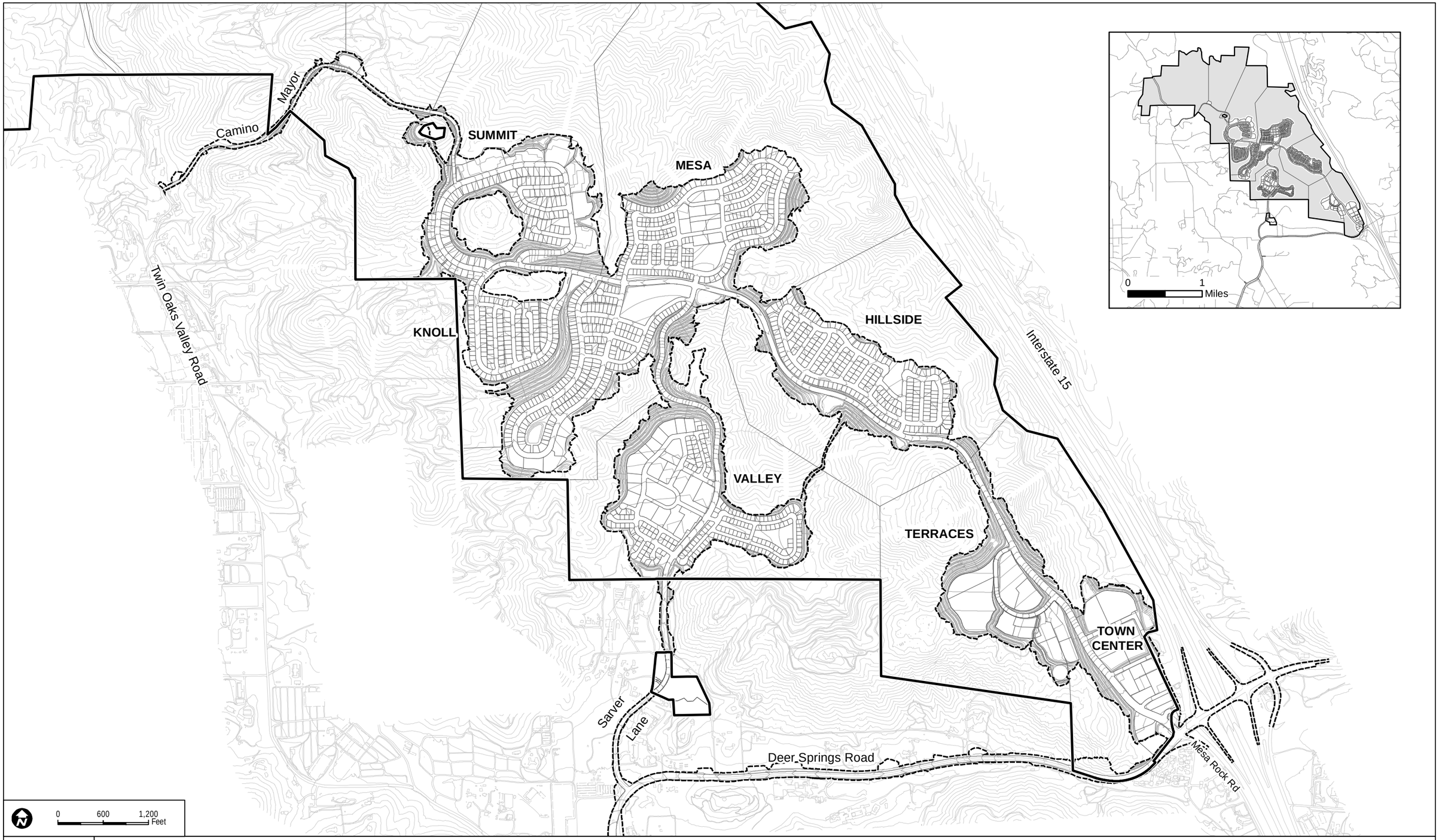

SOURCE: Fuscoe 2016

FIGURE 3
Site Plan

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Agricultural Resources Report for the Newland Sierra Project

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Sustainability

The proposed project would promote sustainability through site design that would conserve energy, water, open space, and other natural resources. The project would offer defining attributes, including a commitment to carbon neutrality by offsetting 100 percent of the project's construction and operational greenhouse gas (GHG) emissions through the life of the project. As part of this commitment, the project would implement core sustainable development features, including solar on all residential units and a network of solar-powered street lights; low-water-use landscaping throughout the Community, with restrictions on the use of turf; possible indoor pre-plumbing for grey water systems in single-family residential dwelling units, if feasible; electric vehicle chargers in single-family garages and electric vehicle charging stations in commercial areas; and integration of community gardens and vineyards throughout the Community. The project would also implement a Transportation Demand Management (TDM) program to reduce automobile trips, both internal and external to the Community. The project's carbon neutrality and energy-, water-, and transportation-efficient requirements, combined with its balance of interrelated land uses, high level of preservation, and high-quality neighborhood design, make the project the first large-scale planned community in San Diego County to achieve a 100 percent reduction in the project's construction and operational GHG emissions.

Mobility

The project's multimodal transportation network would support pedestrian, equestrian, bicycle, shuttle service, and vehicular use throughout the Community, with connections to off-site roads supporting the same. The project Site would have two access roads along Deer Springs Road at Mesa Rock Road and Sarver Lane, with an additional access point at Camino Mayor off of Twin Oaks Valley Road to the north. The Mesa Rock Road access would be built as a six-lane entry road with a median that transitions into a four-lane divided road farther into the Site, and then into a two-lane undivided roadway until it reaches the Sarver Lane access where it would transition into a three-lane undivided roadway. The loop road is primarily designed with a width of 32 feet and would include striped bike lanes and a 10-foot-wide multi-use pathway along its entire length. The bike lanes and multi-use pathway would connect to bike routes and a 10-foot-wide multi-use pathway along Deer Springs Road.

An electric bike share program would be included to further link the neighborhoods to one another and reduce internal vehicle trips. The electric bike share program would include the placement of a kiosk in close proximity to each planning area to allow electric bikes to be taken from one kiosk and left at another, encouraging sustainable transportation between planning areas within the project. The program includes the placement of eight kiosks throughout the Community, with 10 to 20 electric bikes at each kiosk. Additionally, the project would include bike lanes, an extensive

trail system consisting of roadside pathways within the linear greenbelts, and pathways. With incorporation of these internal circulation features, the project would provide residents the opportunity to access employment, education, and recreational and commercial uses via multiple modes of transportation.

Off-Site Roadway Improvements

In addition to the improvements described above, traffic impacts to off-site roadways would necessitate various off-site improvements. These improvements are identified as mitigation measures to reduce traffic impacts. They include improvements to the Deer Springs Road/I-15 Interchange, Deer Springs Road, Twin Oaks Valley Road, Buena Creek Road, Monte Vista Drive, S. Santa Fe Avenue, and various intersections, and they are necessary to improve the capacity and operations of these roadways. Several of these roadway improvements are located within the jurisdiction of another lead agency. Because these additional off-site improvements are identified as mitigation measures, the EIR discusses the environmental effects of the improvements to the extent known at this time, and as required by CEQA, in less detail than the significant effects of the proposed project (See CEQA Guidelines Section 15126.4(a)(1)(D)).

Deer Springs Road (Options A and B)

Of the off-site mitigation requirements identified in the EIR, the improvements to Deer Springs Road would involve two options. Option A would improve an approximately 6,600-foot-long section of the segment of Deer Springs Road between Sarver Lane and Mesa Rock Road to a 2.1B Community Collector (two lanes of travel with a continuous center turn lane). The balance of the road southwest into the city of San Marcos and east to I-15, including its intersections with Sarver Lane and Mesa Rock Road, would be improved to a 4.1A Major Road (a four-lane road with a raised median). Consistent with these sets of improvements, Option A would reclassify Deer Springs Road in the Mobility Element of the County's General Plan from a 6.2 Prime Arterial (six-lane) to a 4.1A Major Road with Raised Median and a 2.1B Community Collector with Continuous Turn Lane classifications. The centerline of Deer Springs Road would be realigned to ensure a minimum 750-foot turning radii along the entire alignment.

Option B would construct the entire length of the road from the I-15 interchange to its intersection with Twin Oaks Valley Road as a four-lane road, with an approximately 7,600-foot-long section of the road between Sarver Lane and Mesa Rock Road as a 4.1B Major Road (four lanes of travel with a continuous center turn lane), and the balance of the road, including its intersections with Sarver Lane and Mesa Rock Road, as a 4.1A Major Road. Option B would not reclassify Deer Springs Road; the roadway would remain as a 6.2 Prime Arterial (six-lane) in the

Mobility Element of the General Plan. The centerline of Deer Springs Road would be realigned to ensure a minimum 750-foot turning radii along the entire alignment.

Both Option A and Option B would provide increased capacity on Deer Springs Road relative to existing conditions, although when considering level of service, only Option B would meet the County's level-of-service standards at project buildout. As is standard, the ultimate design of the road would be subject to County final engineering review and approval, whereby the County may require minor adjustments to the design details described herein.

Twin Oaks Valley Road

No improvements are planned for the segment of Twin Oaks Valley Road north of Deer Springs Road, thus maintaining the rural character of north Twin Oaks Valley. Improvements to the intersection of Twin Oaks Valley Road and Camino Mayor maintain sight distance requirements. South of Deer Springs Road, in the City of San Marcos, Twin Oaks Valley Road may be improved to the four-lane Special Major Arterial standard (City of San Marcos) with a raised median.

I-15 Interchange Improvements

A Project Study Report is underway with the California Department of Transportation (Caltrans) to study alternatives for improving the I-15/Deer Springs Road interchange. These alternatives include a diamond interchange, a diverging diamond interchange, and a roundabout interchange. The purpose of these alternatives is to increase intersection spacing to eliminate queue spillover between intersections, thus reducing congestion. The potential relocation of the existing southbound off-ramp could allow for expansion of the existing park-and-ride lot in the northeast quadrant of Deer Springs Road/Mesa Rock Road. An expanded park-and-ride lot could enhance ride sharing and public transit opportunities. The ultimate design of the interchange will be decided by Caltrans.

The Caltrans interchange improvements, and whether the existing park-and-ride lots are expanded, reconfigured, and/or enhanced to support transportation alternatives (e.g., ride-share, car-share, and transit), are the subject of a separate environmental review and Caltrans approval process, subject to the California Environmental Quality Act (CEQA) and the National Environmental Policy Act and under the purview of Caltrans, acting in its capacity as the lead agency. While the interchange improvements and park-and-ride improvements are the subject of a separate but related project by Caltrans, the project's environmental analysis has accounted for and disclosed the potential impacts associated with these improvements, to the extent feasible.

Off-Site Utilities Improvements

Off-site sewer and water improvements would be completed in accordance with the approved water and sewer master plans prepared for the project. These improvements would be made in conjunction with surface improvements to Sarver Lane, Deer Springs Road, and Twin Oaks Valley Road. Additional segments of sewer would be improved in Twin Oaks Valley Road to Del Roy Avenue and East of Twin Oaks Valley Road within an existing Vallecitos Water District easement. Additionally, an 800-foot-long pipeline segment would require upsizing from the existing 18-inch-diameter line to a 21-inch-diameter line. This segment is located north of East Mission Road between Twin Oaks Valley Road and Vineyard Road within the City of San Marcos. The existing sewer is located behind a commercial/retail development. For the purposes of this analysis, it is assumed that the entire 30-foot-wide easement would be impacted to upsize the existing sewer line.

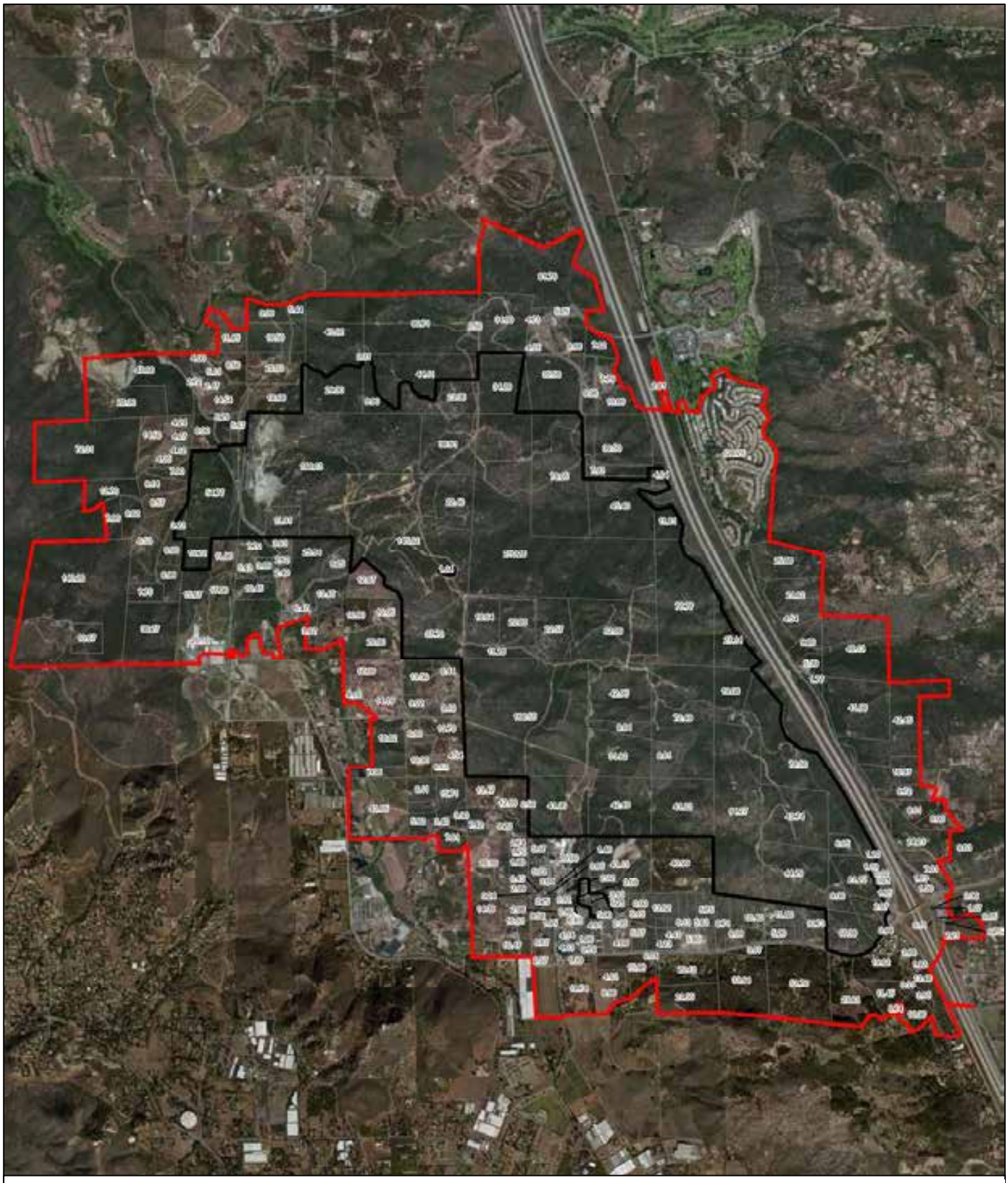
1.3 Analysis Methods

The study area includes the project Site, as well as the Zone of Influence (ZOI). The ZOI includes any parcel that is partially within 0.25 mile of the project Site, as determined by the Attachment F in the County of San Diego's *Guideline for Determining Significance Agricultural Resources* and is shown in Figure 4, Project Site and Zone of Influence Parcel Sizes. Data sources used in this analysis include the U.S. Department of Agriculture (USDA) Soil Conservation Service Soil Surveys, the Department of Conservation's (DOC) Farmland Mapping and Monitoring Program (FMMP) Farmlands maps for San Diego County, and the San Diego County Geographic Information Source (SanGIS). Google Earth maps were used for aerial photo interpretations of the Site and the surrounding area.

For impacts from off-site improvements associated with the proposed project (see Section 1.2, Project Location and Description), impacts from the following improvements were assumed to occur:

- Widening of Deer Springs Road from Sarver Lane to the I-15 interchange (Option A and Option B)
- Widening Twin Oaks Valley Road south of Deer Springs Road (City of San Marcos)
- Widening of Sarver Lane and signalizing the Sarver Lane and Deer Springs Road intersection
- Improving the I-15/Deer Springs Road interchange

For the widening of Deer Springs Road, this analysis evaluates the impacts from Option B (construct the segment of Deer Springs Road from I-15 to 1,500 feet west of Mesa Rock Road as a 4-lane 4.1A Major Road) because it represents the largest area of potential off-site impacts.



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SOURCE: SANGIS, Bing

FIGURE 4

Project Site and Zone of Influence Parcel Sizes

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Agricultural Resources Technical Report for the Newland Sierra Project

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The cumulative impact analysis for agriculture defines the geographic scope of the cumulative impact study area and includes a discussion of the reasoning and justification for the chosen boundaries of the cumulative impact study area. This report analyzes the significance of any agricultural conversion on a cumulative level, pursuant to the County Agricultural Resources Guidelines.

1.4 Environmental Setting

1.4.1 Regional Context

The project Site lies within the Bonsall and Twin Oaks Valley Community Plan areas, which have historically represented a rural development character that can include agricultural uses. Off-site agricultural uses in the immediate area mainly consist of small-scale rural residential uses such as avocado groves, fruit trees, or horse breeding. The Community Plan areas in the County are designated by Village Boundaries and are designated with Regional Categories that provide a framework for the regional distribution of uses (County of San Diego 2011). The regional categories shown on the Twin Oaks Community Planning Area Land Use Map are primarily designated as Semi-Rural and Rural Lands, with the exception of a few areas along I-15 and in the western edge of the Community Plan areas designated as Village areas (County of San Diego 2011). The Semi-Rural category identifies areas that are appropriate for lower-density residential neighborhoods, recreation areas, agricultural operations, and related commercial uses that support rural communities while the Rural Lands category is applied to large open space and very-low-density private and publicly owned lands that provide for agriculture, managed resource production, conservation, and recreation. The Village category identifies areas of higher intensity development.

1.4.2 On-Site Agricultural Resources

On-Site Agricultural Uses

The project Site is located in a region that is generally characterized by rural and semi-rural agricultural uses including agricultural uses in the immediate area mainly consisting of small-scale rural residential uses such as avocado groves, fruit trees, or horse breeding. However, the project Site does not contain any existing active agricultural areas. The project Site does contain 31.7 acres of Farmland of Local Importance and 3.4 acres of Unique Farmland, as identified by the California Department of Conservation (Figure 5, On-Site and Zone of Influence Agricultural Operation). The project Site does not currently contain any Williamson Act Contract lands, County agricultural preserves, lands designated Prime Farmland or Farmland of Statewide

Importance, and does not have any active irrigated croplands or other crop production, as described in further detail below.

Soils

The soils on the project Site that have been identified using California DOC data are shown in Table 1, On-Site Soil Classifications, and in Figure 6, On-Site Soils. The characteristics of these soils are described in further detail based on their land capability classification (LCC), Storie Index (SI), crop suitability, and FMMP designation.

Table 1
On-Site Soil Classifications

Map Symbol	Soil Name	Acres On-Site[1]	Land Capability Classification (LCC)[2]	Storie Index (SI)[3]	Important Farmland Designation
AcG	Acid igneous rock land	970.2 (48.9%)	VIII	N/A	None
CmE2	Cieneba rocky coarse sandy loam, 9% to 30% slopes, eroded	174.4 (8.8%)	VIIe / VIII	5 / N/A	None
CmrG	Cieneba very rocky coarse sandy loam, 30% to 75% slopes	578.7 (29.2%)	VIII / VIIe	6	None
CnE2	Cieneba-Fallbrook rocky sandy loams, 9% to 30% slopes, eroded	82.5 (4.2%)	VIe / IVe / VIII	5 / 4 / N/A	None
CnG2	Cieneba-Fallbrook rocky sandy loams, 30% to 65% slopes, eroded	16.8 (0.8%)	VIIe / IVe / VIII	6 / 4 / N/A	None
FaD2	Fallbrook sandy loam, 9% to 15% slopes, eroded	10.1 (0.5%)	IVe	2	None
FxG	Friant rocky fine sandy loam, 30% to 70% slopes	25.9 (1.3%)	VIIe	4	None
LpD2	Las Posas fine sandy loam, 9% to 15% slopes, eroded	1.0 (0.1%)	IVe	3	None
LpE2	Las Posas fine sandy loam, 15% to 30% slopes, eroded	5.9 (0.3%)	VIe	3	None
LrE	Las Posas stony fine sandy loam, 9% to 30% slopes	42.8 (2.2%)	VIe	4	None
LrG	Las Posas stony fine sandy loam, 30% to 65% slopes	28.4 (1.4%)	VIIe	4	None
PeC	Placentia sandy loam, 2% to 9% slopes	2.9 (0.1%)	IVe	2	Farmland of Statewide Importance
PeC2	Placentia sandy loam, 5% to 9% slopes, eroded	0.8 (<0.1%)	IVe	2	Farmland of Statewide Importance
RaC2	Ramona sandy loam, 5% to 9% slopes, eroded	17.6 (0.9%)	IVe	1	Farmland of Statewide Importance

Table 1
On-Site Soil Classifications

Map Symbol	Soil Name	Acres On-Site[1]	Land Capability Classification (LCC)[2]	Storie Index (SI)[3]	Important Farmland Designation
RaD2	Ramona sandy loam, 9% to 15% slopes, eroded	0.9 (<0.1%)	IVe	1	None
VaB	Visalia sandy loam, 2% to 5% slopes	22.0 (1.1%)	IIe	1	Prime Farmland
VvE	Vista rocky coarse sandy loam, 15% to 30% slopes	0.1 (<0.0%)	VIe / VIII	4 / N/A	None
WmC	Wyman loam, 5% to 9% slopes	2.2 (0.1%)	IVe	1	Farmland of Statewide Importance

Source: USDA 1973.

1 Includes both acreage and percentage of total Site; percentages may not sum to 100% due to rounding.

2 Non-irrigated land capability classifications shown; some soil types have multiple land capability classifications due to the different soil components present on the project Site (e.g., rock outcrop), see the Land Capability Classification narrative below for more details; for soils with multiple land capability classifications the land capability classifications are listed in order of largest to smallest area covered on the project Site.

3 For soils with multiple Storie Indices due to different soil components present on the project Site (e.g., rock outcrop) the Storie Indices are listed in order of largest to smallest area covered on the project Site; N/A – not applicable; for simplicity the SI for each of the soils have been grouped into grades that correspond to the following SI value ranges: grade 1 (excellent) has a SI of 100 to 80, grade 2 (good) has an SI of 79 to 60, grade 3 (fair) has an SI of 59 to 40, grade 4 (poor) has an SI of 39 to 20, grade 5 (very poor) has an SI of 19 to 10, and grade 6 (nonagricultural) has an SI of less than 10.

Land Capability Classification (LCC)

The LCC classifies soils using the Roman numerals I through VIII according to their limitations when cultivated and according to the way that they respond to management practices. Class I soils have no significant limitation for raising crops. Classes VI through VIII have severe limitations, limiting or precluding their use for agriculture. Capability subclasses are also assigned by adding a small letter to the class designation. Capability subclasses include the letters "e," "w," "s," or "c." The letter "e" shows that the main limitation is risk of erosion. The letter "w" indicates that water in or on the soil interferes with plant growth or cultivation. The letter "s" indicates that the soil is limited mainly because it is shallow, droughty, or stony. Finally, the letter "c" is used only in some parts of the United States where cold or dry climates are a concern. Groupings are made according to the limitation of the soils when used to grow crops and the risk of damage to soils when they are used in agriculture. Productive agriculture in San Diego County typically occurs on soils having LCC ratings of III and IV, and a significant number of local soils have the class designations "e" and "c," indicating limitations related to erosion and shallow soils.

For some soil types there are multiple different components of that soil type that are found on the project Site. The different components of a soil type present on the project Site that have different LCCs are listed in Table 1 in order of those that cover the largest amount of land on the project Site to those that cover the smallest amount of land on the project Site. Specifically, on the project Site the CmE2 soil is comprised of 60% Cieneba and 30% rock outcrop; the CmrG soil is composed of 45% rock outcrop and 45% Cieneba; the CnE2 soil is composed of 40% Cieneba, 40% Fallbrook, and 15% rock outcrop; the CnG2 is comprised of 40% Cieneba, 35% Fallbrook, and 20% rock outcrop; and the VvE soil is composed of 65% Vista and 25% rock outcrop components (USDA 1973).

Overall, approximately 1% of the project Site is occupied by soils with a LCC better than class IV, approximately 4% of the project Site soils have a LCC of class IV, and the remaining approximately 95% of the project Site has a LCC that is worse than class IV.

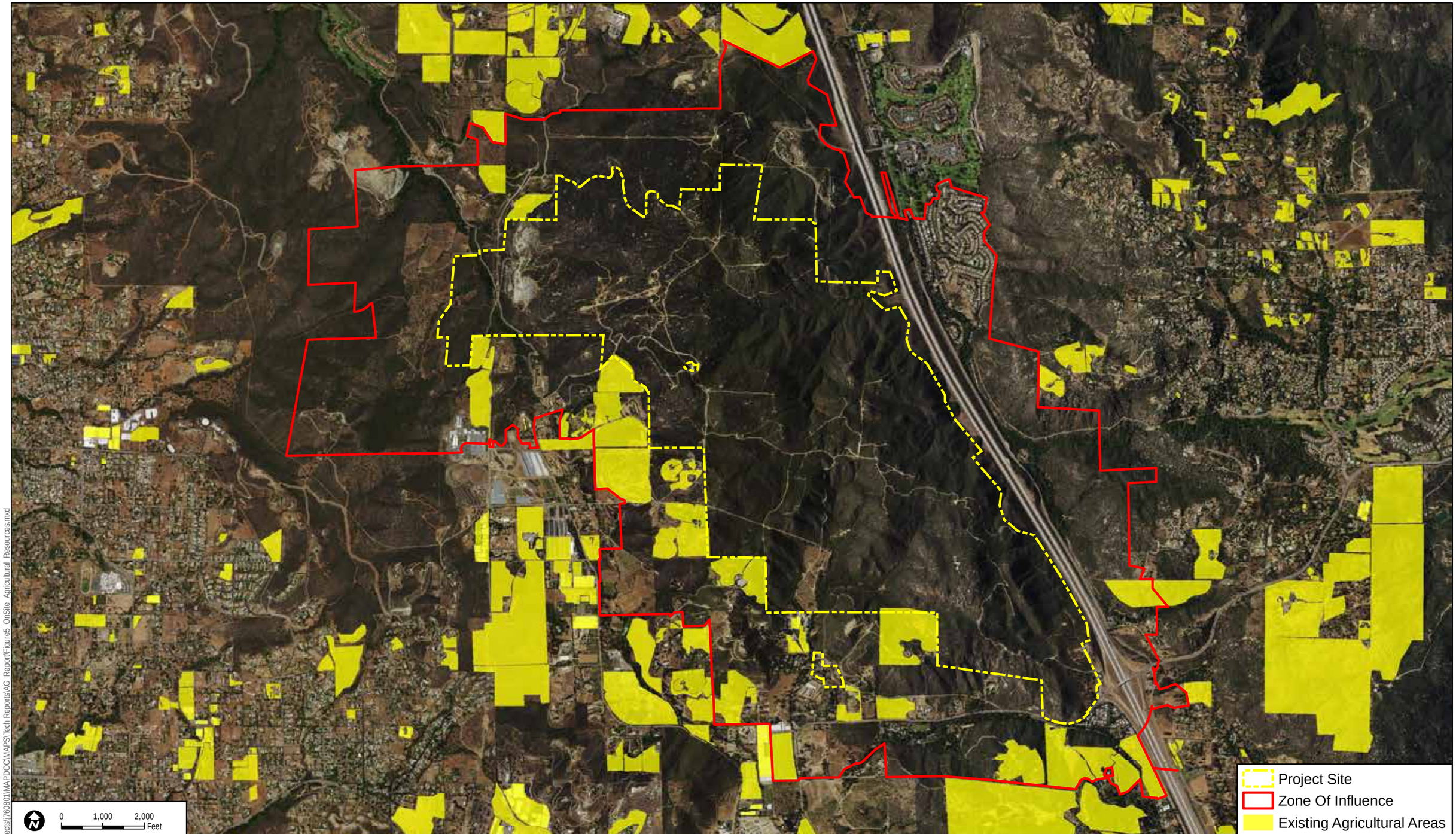
Storie Index (SI)

The SI, another traditional measure of soil quality, expresses numerically on a 100-point scale the relative degree of suitability or value of a soil for general intensive agriculture. Higher SI ratings indicate higher quality soils. The SI rating is based on several factors including profile characteristics (affecting root penetration), surface soil texture (affecting ease of tillage and capacity of soil to hold water), slope (affecting soil erosion), and other unique limiting factors of the soil such as poor drainage, high water table, salts, and acidity. Productive agriculture in San Diego County typically occurs on soils with low SI ratings (typically in the 30s).

As shown in Table 1, the SI of the soils found on the project Site have been combined into six grades for simplicity. These grades correspond to the following ranges of SI values: grade 1 (excellent) has a SI of 100 to 80, grade 2 (good) has an SI of 79 to 60, grade 3 (fair) has an SI of 59 to 40, grade 4 (poor) has an SI of 39 to 20, grade 5 (very poor) has an SI of 19 to 10, and grade 6 (nonagricultural) has an SI of less than 10. The project Site contains approximately 3% of soils in grade 3 or better (fair, good, and excellent), which correspond to a SI of 40 or more. The remaining approximately 97% of the soils on the project Site are in grade 4 or worse (poor, very poor, and nonagricultural), which correspond to a SI of 39 or less.

Crop Suitability

Although the LCC of soils are a general method for determining the suitability of soils for most kinds of field crops, the USDA Soil Survey report for the San Diego area classifies crop suitability for various soil types. As previously described, approximately 95% of the soils on the project Site had a LCC that correspond to having very severe limitations that restrict the choice of plants and that require very careful management (class IV) to soils the preclude commercial plant production (class VIII).



SOURCE: CALIFORNIA DEPT OF CONSERVATION

FIGURE 5

On-Site and Zone of Influence Agricultural Operation

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Agricultural Resources Technical Report for the Newland Sierra Project

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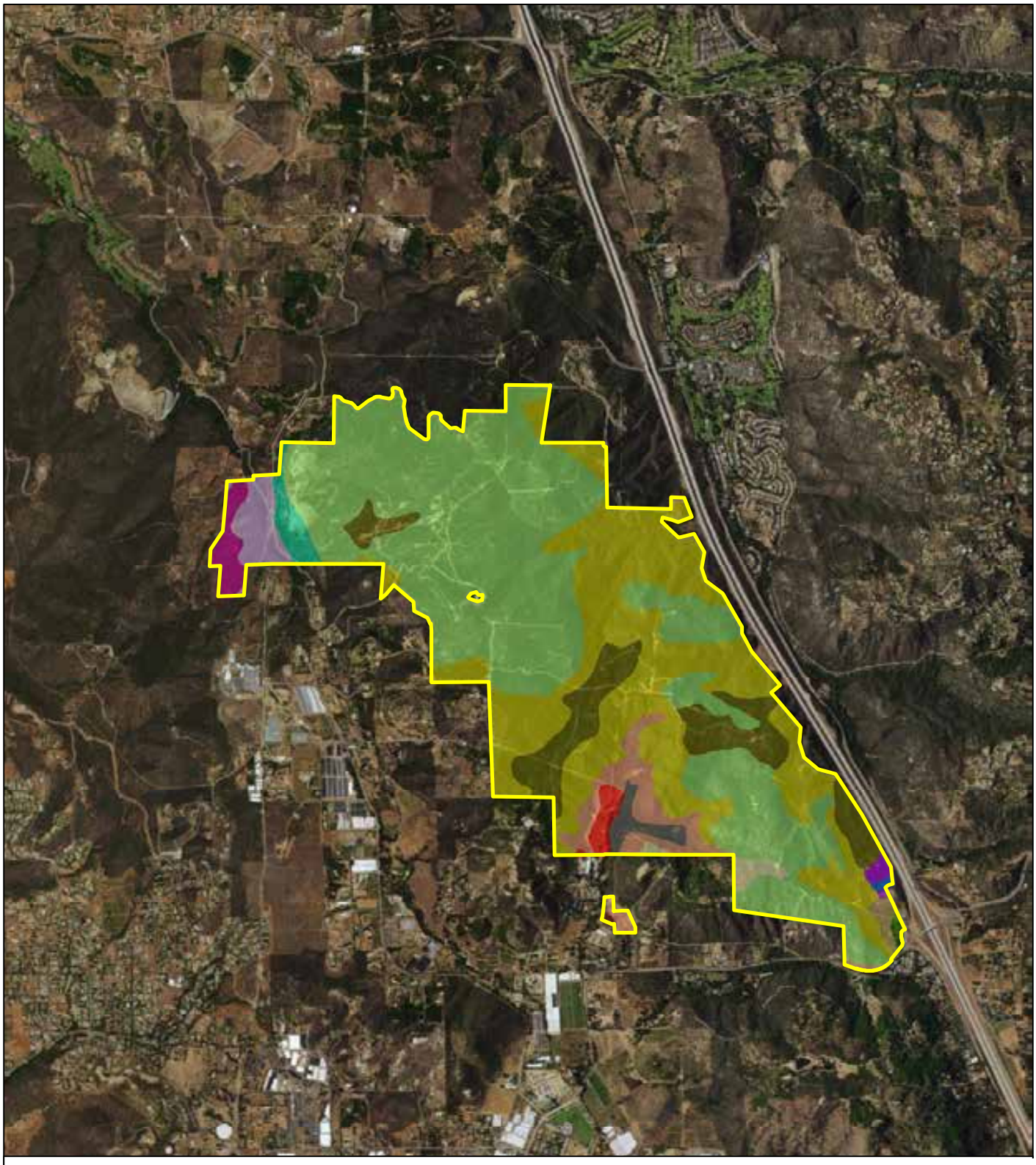

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SOURCE: SANGIS, Bing

FIGURE 6
On-Site Soils

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The most prevalent soil type on the project Site (approximately 49% of the project Site) is AcG, acid igneous rock land, which is rated as nonagricultural land and does not support avocados or other citrus crops that are common in the surrounding area. The next largest soil type on the project Site is CmrG, Cieneba very rocky course sandy loam with 30% to 75% slopes, which covers approximately 29% of the project Site. Although this soil is not suitable for crop cultivation without irrigation, the Cieneba component of this soil type is estimated to produce approximately 375 boxes of avocados or 165 boxes of oranges with irrigation and high level of management. The soil types CmE2, eroded Cieneba rocky coarse sandy loam with 9% to 30% slopes, and CnE2, eroded Cieneba-Fallbrook rocky sandy loams with 9% to 30% slopes, account for approximately 13% of the soils found on the project Site. See Figure 7, Slope Map. These soils are not suitable for crop cultivation without irrigation, but when irrigated and under a high level of management the Cieneba component of these soils are estimated to produce approximately 400 boxes of avocados, 280 boxes of oranges, or 250 boxes of lemons per acre.

Farmland Mapping and Monitoring Program (FMMP) Designations

The State of California DOC FMMP Farmland categories are based on local soil characteristics and irrigation status, with the best quality land identified as Prime Farmland and Farmland of Statewide Importance. The DOC has classified land in California into seven "Important Farmlands Categories" (California Department of Conservation 2010). Annotated definitions of the relevant classifications are found below.

Prime Farmland. Land with the best combination of physical and chemical characteristics, which are able to sustain long-term production of agricultural crops.

Farmland of Statewide Importance. Land with a good combination of physical and chemical characteristics for agricultural production, having only minor shortcomings, such as less ability to store soil moisture, compared to prime farmland.

Unique Farmland. Land used for production of the state's major crops on soils not qualifying for prime or statewide importance. This land is usually irrigated, but may include non-irrigated fruits and vegetables as found in some climatic zones in California.

Farmland of Local Importance. 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 (e.g., tomatoes, strawberries, cucumbers, potatoes, celery, squash, romaine lettuce, and cauliflower) and soils suited for orchard crops (e.g., avocados and citrus).

Grazing Land. Land on which the existing vegetation is suited to the grazing of livestock.

Urban and Built-up Land. Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel.

Other Land. Land which does not meet the criteria of any other category.

The on-site FMMP designations include the following as shown in Figure 8, On-Site Important Farmland Categories, and are shown in Table 2, On-Site Important Farmland Categories.

Table 2
On-Site Important Farmland Categories

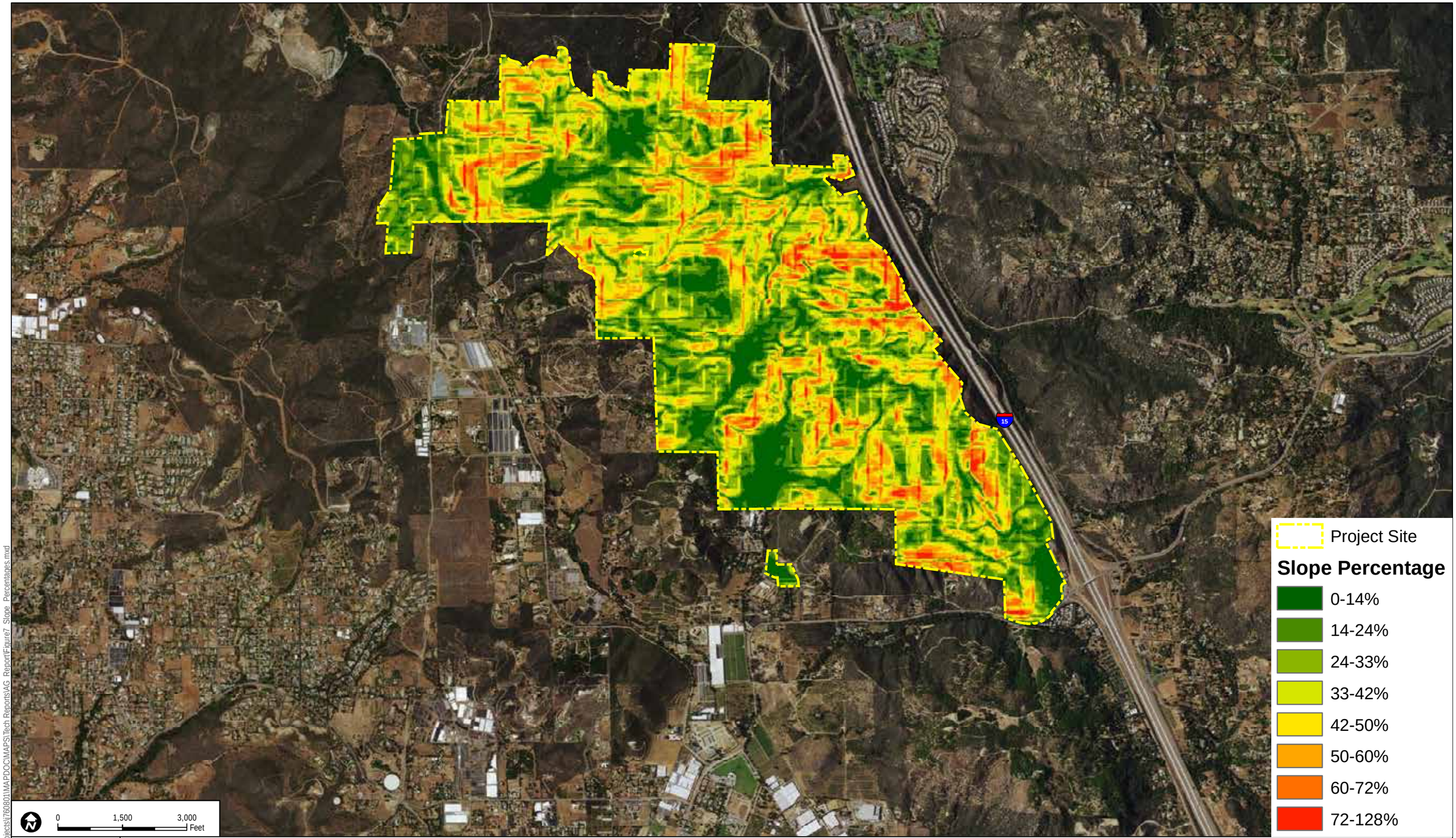
Important Farmland Category	Acres On-Site[1]
Prime Farmland	—
Farmland of Statewide Importance	—
Unique Farmland	3.4 (0.2%)
Farmland of Local Importance	31.7 (1.6%)
Grazing Land	—
Urban and Built-up Land	1.6 (0.1%)
Other Land	1946.7 (98.2%)

Source: USDA 1973.
1 Includes both acreage and percentage of total Site; percentages may not sum to 100% due to rounding.

As shown in Table 2, approximately 98% of the project Site contains land with a FMMP designation of Other Land or Urban and Built-up Land. Approximately 32 acres of land in the south portion of the project Site is designated as Farmland of Local Importance. A very small portion of the project Site, approximately 3.4 acres or 0.2% of the project Site, is considered Unique Farmland; however, the land with this designation is associated with existing off-site agricultural operations that encroach into the project Site boundary. No agricultural operations currently exist on the project Site and the primary agricultural operation areas for these lands are located outside of the project Site boundary.

History of Agricultural Use

The general Twin Oaks Valley area, where the project Site is located, contains soils and a climate well suited for agriculture. Although the area surrounding the project Site has a history of agricultural use, the project Site contains steep topography and rock outcroppings that are not favorable for agricultural activities.



ZONING SOURCE: SANGIS

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FIGURE 7
Slope Map

Agricultural Resources Technical Report for the Newland Sierra Project

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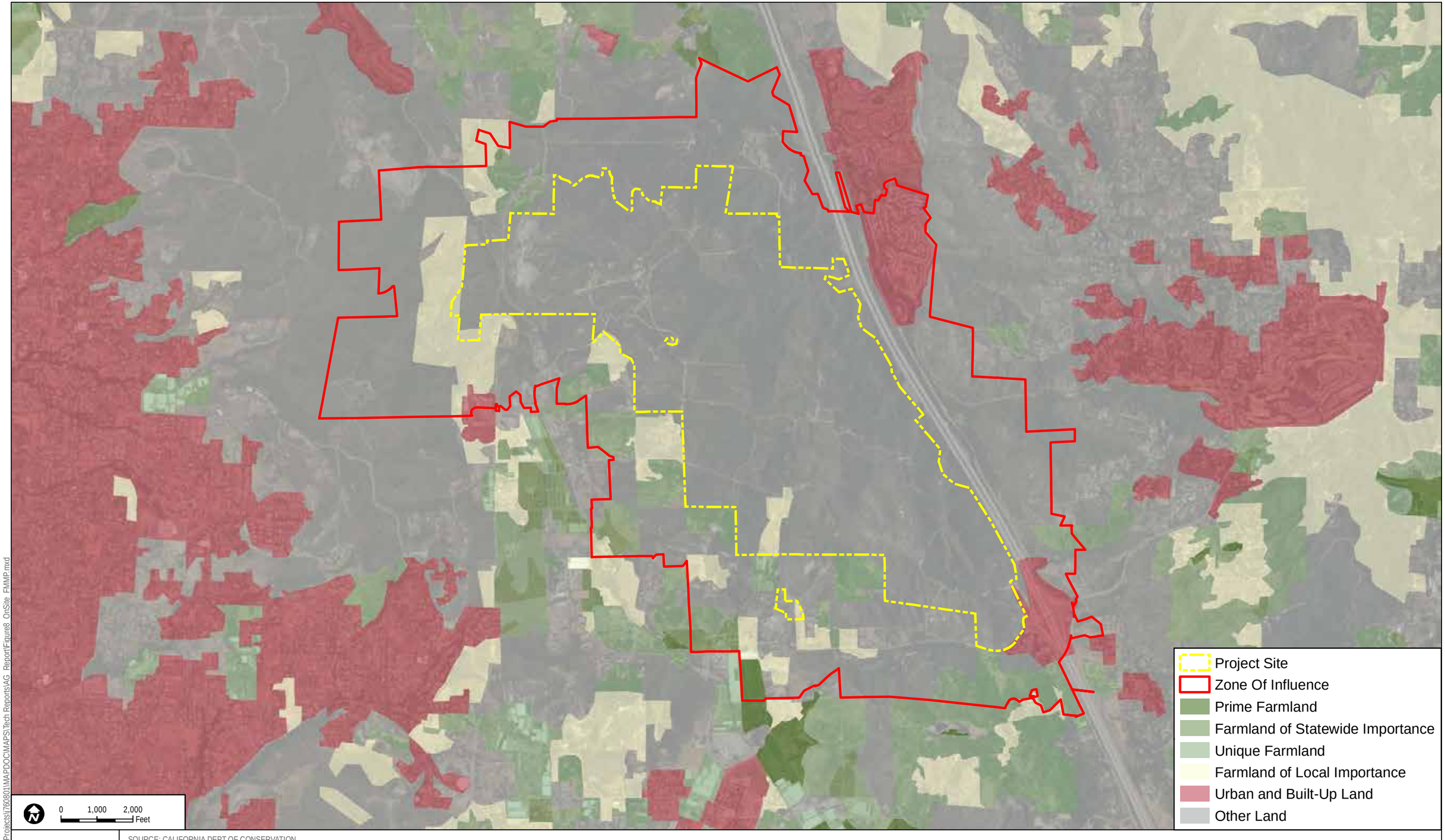

SOURCE: CALIFORNIA DEPT OF CONSERVATION

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FIGURE 8

On-Site Important Farmland Categories

Agricultural Resources Technical Report for the Newland Sierra Project

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Historical aerial photographs show use of the surrounding areas to the south and west of the project Site for agricultural purposes. In the late 1970s agricultural operations surrounding the project Site included orchards to the west near Twin Oaks Crest Drive and to the south near Deer Springs Road. Additional orchards to the south and west of the project Site were in operation during the 1980s and many of the existing agricultural uses immediately surrounding the project Site have remained in operation. Various commercial greenhouse operations also exist to the south of the project Site. On the southern edge of the project Site a small portion of the adjacent orchards that are primarily located off Site along Deer Springs Place encroach slightly onto the project Site. These orchards, which are based off Site with the exception of this small encroachment, began operation in the 1980s and have continued in relatively the same proximity to the present day.

Based on a review of the County's available GIS aerial mapping, the project Site does not contain a history of agricultural production. In addition, there are no current agricultural operations occurring on the project Site in this area. No other agricultural operations currently exist on the project Site and the primary agricultural operation areas for existing off-site agricultural operations that slightly encroach into the project Site boundary are located outside of the project Site boundary.

Climate

The Twin Oaks Valley Golf Course weather station is located approximately 2.5 miles south of the project Site at an elevation of 650 feet amsl. Average high temperatures range from about 68˚F in December to 89˚F in August. Average low temperatures range from about 42˚F in December to 63˚F in August. Average precipitation is approximately 15 inches annually (The Weather Channel 2014).

There are two generally used climate rating systems, which can be applied to a particular area, to determine what plants or agricultural crops are appropriate for that Site. These are the Sunset Climate Zone and the USDA Hardiness Rating (Sunset Publishing Corporation 2011), as described below.

USDA Hardiness Rating

Defined by the USDA Agricultural Research Service, hardiness ratings identify the lowest temperature at which a plant would thrive, and these zones are defined by the average annual extreme minimum temperature in an area. The project Site is in USDA Hardiness Zone 10a. This zone is defined as having average minimum temperatures between 30 and 35˚F (USDA 2014).

Sunset Climate Zone

The County of San Diego has assigned climate zones as a way of accounting for the variability of microclimate conditions and climate suitability throughout the County. The northwestern portion of the project Site is located within Climate Zone 23 while the remaining majority of the project Site is in Climate Zone 21 on the County's Area Climates and Generalized Western Plant Climate Zones ("Sunset Zones") map (County of San Diego 2006).

Zone 21 is considered a "High" LARA Model Rating Zone because of the mild year round temperatures and lack of freezing temperatures that allow year round production of high value crops. The importance of this zone is also related to the conversion pressure that exists due to urban encroachment. Zone 21 is also favorable due to its location close to urban areas and transportation infrastructure which facilitates product delivery to market (County of San Diego 2007).

Zone 23 represents thermal belts of the Coastal Area climate and is one of the most favorable for growing subtropical plants and most favorable for growing avocadoes. Zone 23 encompasses some of San Diego County's most important agricultural areas, including Bonsall, Fallbrook, and Twin Oaks Valley. The role of topography in the success of avocado production in this zone is of particular note. Foothills and steep, rocky slopes provide ideal conditions for excellent air and water drainage; air drainage necessary to prevent freezes and rapid water drainage being essential for the prevention of root rot in avocadoes. Zone 23 lacks the summer heat necessary to grow crops such as apples, pears and peaches. Zone 23 temperatures are mild; however, severe winters have resulted in lows in some areas ranging from 23°F to 38°F (County of San Diego 2007).

Water

The project Site is currently located within the Vallecitos Water District (VWD) service area for water and would not require an extension of the water service area. There exists an extensive network of water mains within the project Site ranging in size from 8 inches to 16 inches. There is one existing 1.3 million gallon water reservoir within the project Site that serves the project area and provides service to adjacent properties. An existing well is located in south-central portion of the project Site, near the middle of the future Valley planning area. This existing well would remain after construction of the proposed project. Additionally, an existing unused well that is approximately 22 feet deep is located to the southwest of the proposed roundabout, which is part of the improvements proposed for Sarver Lane.

Williamson Act Contracts and Agricultural Preserves

The subject property is not currently under a Williamson Act Contract, nor is it within an Agricultural Preserve (SanGIS 2011).

Prime Agricultural Land

The project Site is located within the existing VWD service area and water supply would be provided by VWD. The project does not require annexation into the district. Establishment of this water supply would occur through the expansion/extension of existing supply pipelines and reservoirs located within and adjacent to the project. The project Site is also located within the boundaries of the VWD for sewer service. The majority of the project would require annexation into a sewer improvement district prior to sewer service being available. This is an internal process for VWD and does not require LAFCO approval. Therefore, per the County's guidance this report is not required to discuss the prime agricultural land on the project Site (County of San Diego 2007).

1.4.3 Off-Site Agricultural Resources

The *Guidelines for Determining Significance and Report Format and Content Requirements* (County of San Diego 2007) require that agricultural operations, within one-quarter mile of the project Site, must be identified including lands under Williamson Act Contracts, FMMP designations, Agricultural Preserves and any active agricultural operations. However, as described in the County's Guidelines if a project proposes a school then these same agricultural operations must be identified within 1 mile of the project Site. Within this 1 mile radius, lands compatible with agriculture are identified as described below.

Active Agricultural Operations

Of the current land uses within the 1 mile of the project Site, approximately 16 acres are used for row crops that include tomatoes, beans, strawberries, cucumbers, potatoes, squash, cauliflower, and peppers. Within 1 mile of the project Site approximately 243 acres support nursery and greenhouse agriculture that typically contain structures used to cultivate high-value products, such as flowering/foliage plants and gourmet food products such as mushrooms. Nursery and greenhouse operations may also be used to grow commodities, such as landscaping, decorative plants, fruit trees, herbs, and flowers. Additionally, approximately 1,041 acres within the 1 mile of the project Site is currently used for orchard (e.g., citrus and avocado orchard) or vineyard purposes. The location of these existing agricultural operations are shown in Figure 5.

FMMP Designations

As shown on Figure 9, Important Farmland Categories Within 1 Mile of Project Site, lands designated Prime Farmland, Farmland of Local Importance, and Farmland of Statewide Importance occur immediately to the north, west, and south of the project Site. Within 1 mile of the project Site Farmland of Local Importance comprises approximately 687 acres, Farmland of Statewide Importance makes up approximately 167 acres, Unique Farmland makes up approximately 1,382 acres, and Prime Farmland accounts for about 86 acres. The remaining approximately 7,753 within 1 mile of the project Site are mostly designated as Other Land and Urban and Built-up Land.

Williamson Act Contracts and Agricultural Preserves

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments that are much lower than normal because they are based on farming and open space uses as opposed to full market value. The goal of the Williamson Act Program is to encourage the preservation of California's agricultural land and to prevent its premature conversion to urban uses (County of San Diego 2007).

An agricultural preserve is an area devoted to agricultural use, open space use, recreational use, or any combination of such uses, and compatible uses which are designated by the County. Preserves are established for the purpose of defining the boundaries of those areas, within which the County may be willing to enter into contracts, pursuant to the Williamson Act. Landowners within a Preserve may enter into a Contract with the County to restrict their land to the uses stated above; whereby, the assessment on their land will be based on its restricted use rather than on market value.

As shown in Figure 10, Williamson Act Contract Lands and County Agricultural Preserves Within 1 Mile of Project Site, there are approximately 60 acres of County Agricultural Preserves that are also Williamson Act Contract Lands within 1 mile of the project Site. Additionally, there are approximately 135 acres of land designated only as Williamson Act Contract Lands within 1 mile of the project Site.

1.4.4 Zoning and General Plan Designation

Four General Plan land use designations currently apply to the project Site, as shown in Figure 11, Existing General Plan Land Use Designations. The majority of the project Site is designated Rural Lands (RL 20), with smaller areas of the Site, primarily near Deer Springs Road and I-15,

designated as General Commercial, and Semi-Rural 10. The proposed project would involve a General Plan Amendment to designate the property with the land use designations shown in Table 3, Proposed General Plan Land Use Summary, and depicted in Figure 12, Proposed General Plan Land Use Designations.

As shown in Figure 13, Existing Zoning, the current zoning on the project Site General Commercial (C36), Office Professional (C30), Rural Residential (RR), Limited Agriculture (A70), Extractive (S82), and General Rural (S92). The proposed zoning would include General Commercial/Residential (C34), Urban Residential (RU), Limited Agriculture (A70), and Open Space (OS), as depicted in Figure 14, Proposed Zoning.

Table 3
Proposed General Plan Land Use Summary

Land Use	Proposed Land Use Designation	Acres	Dwelling Units
General Commercial, row townhomes, school	Village Core Mixed Use (VC-MU)	58.3	95
Townhome clusters, paseo clusters, small lots, family lots, age-targeted lots/age-qualified lots, large lots/clusters	Semi-Rural Residential (SR-1)	701	2040
Park, roadway improvements	Semi-Rural Residential (SR-10)	8.2	—
Open space	Open Space (Conservation) (OS-C)	1,218.1	—

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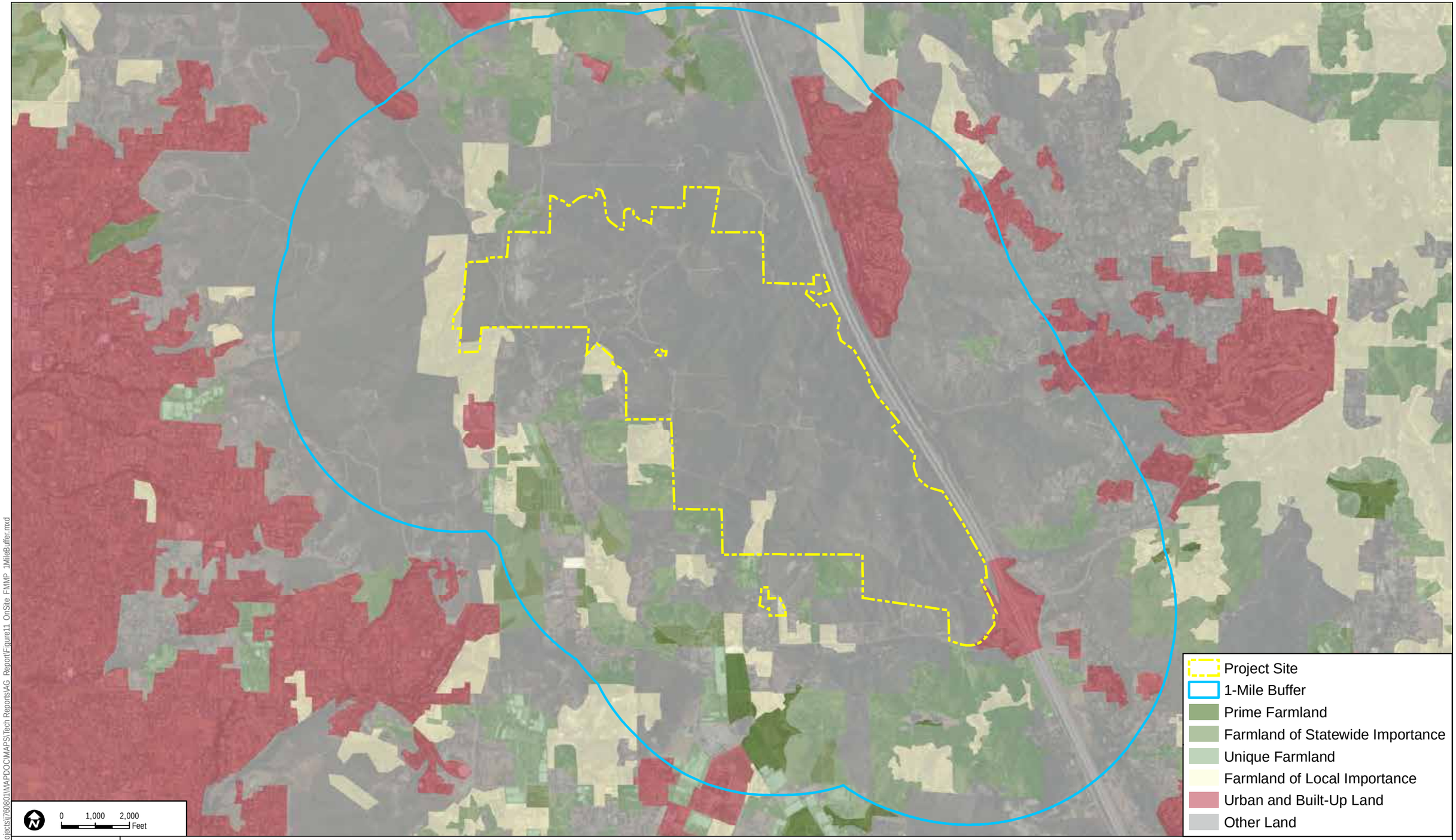

SOURCE: CALIFORNIA DEPT OF CONSERVATION

FIGURE 9

Important Farmland Categories within 1 Mile of Project Site

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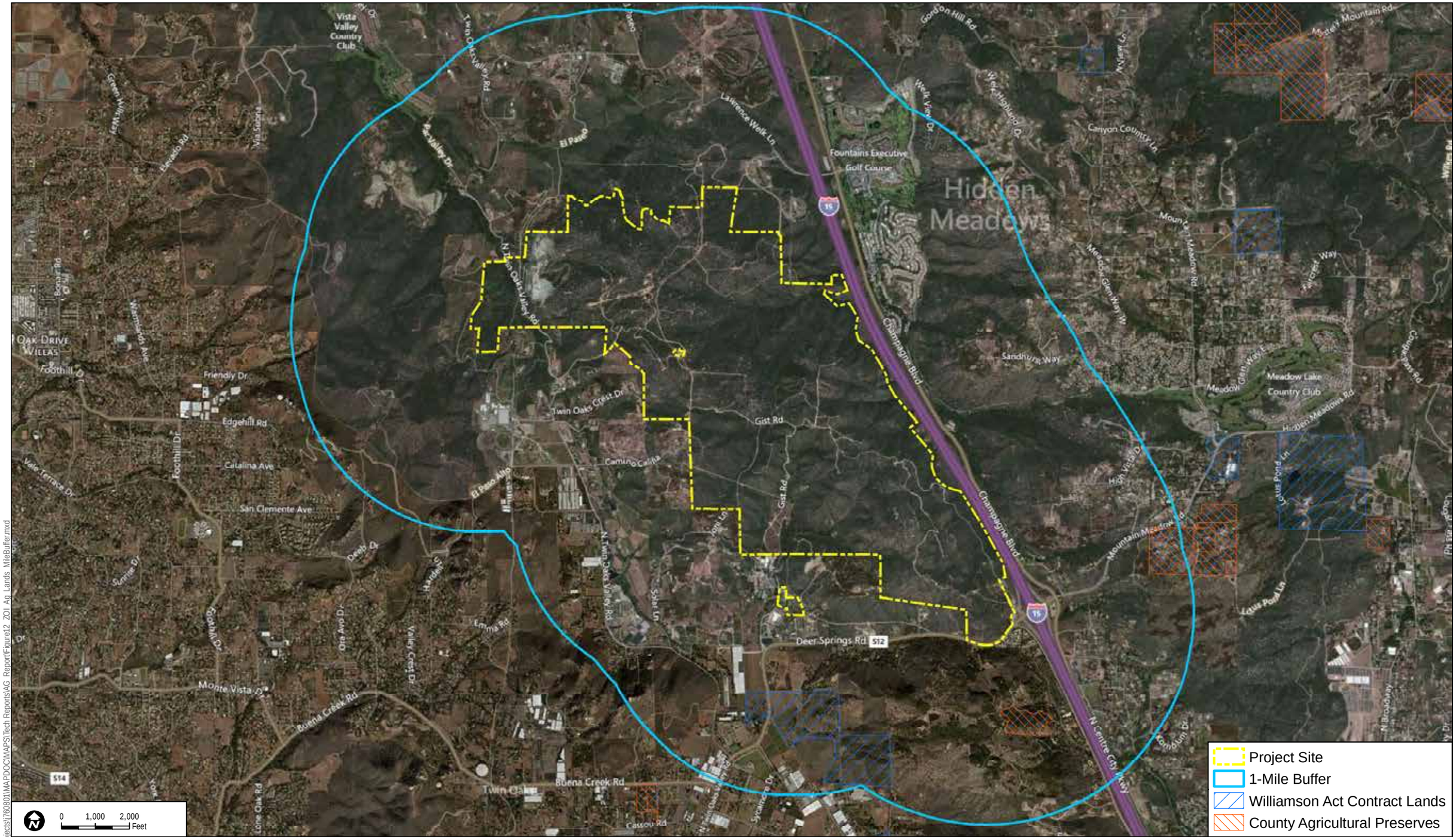

SOURCE: CALIFORNIA DEPT OF CONSERVATION

FIGURE 10

Williamson Act Contract Lands and County Agricultural Preserves within 1 Mile of Project Site

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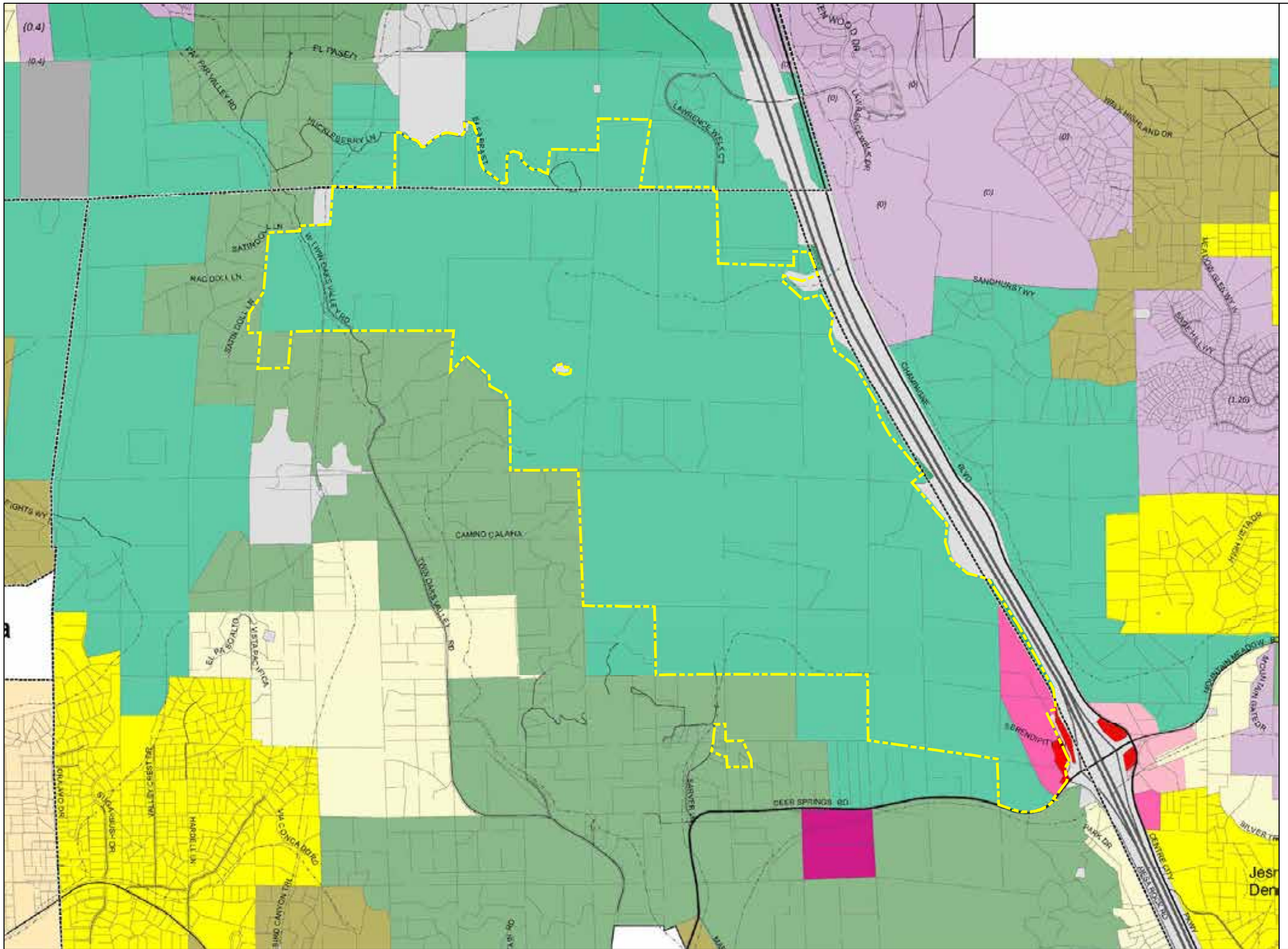

General Plan Land Use Designations[1,2]

Adopted August 2011

- Village Residential (VR-30)
- Village Residential (VR-24)
- Village Residential (VR-20)
- Village Residential (VR-15)
- Village Residential (VR-10.9)
- Village Residential (VR-7.3)
- Village Residential (VR-4.3)
- Village Residential (VR-2.9)
- Village Residential (VR-2)
- Semi-Rural Residential (SR-.5)
- Semi-Rural Residential (SR-1)
- Semi-Rural Residential (SR-2)
- Semi-Rural Residential (SR-4)
- Semi-Rural Residential (SR-10)
- Rural Lands (RL-20)
- Rural Lands (RL-40)
- Rural Lands (RL-80)
- Specific Plan Area (residential densities in italics)[4]
- Office Professional[3]
- Neighborhood Commercial[3]
- General Commercial[3]
- Rural Commercial[3]
- Limited Impact Industrial[3]
- Medium Impact Industrial[3]
- High Impact Industrial[3]
- Village Core Mixed Use
- Public/Semi-Public Facilities[3]
- Public/Semi-Public Lands (Solid Waste Facility)
- Public Agency Lands
- Tribal Lands
- Open Space (Recreation)
- Open Space (Conservation)
- County Water Authority Boundary
- Twin Oaks Subregional Group Area Boundary

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SOURCE: COUNTY OF SAN DIEGO

FIGURE 11

Existing General Plan Land Use Designations

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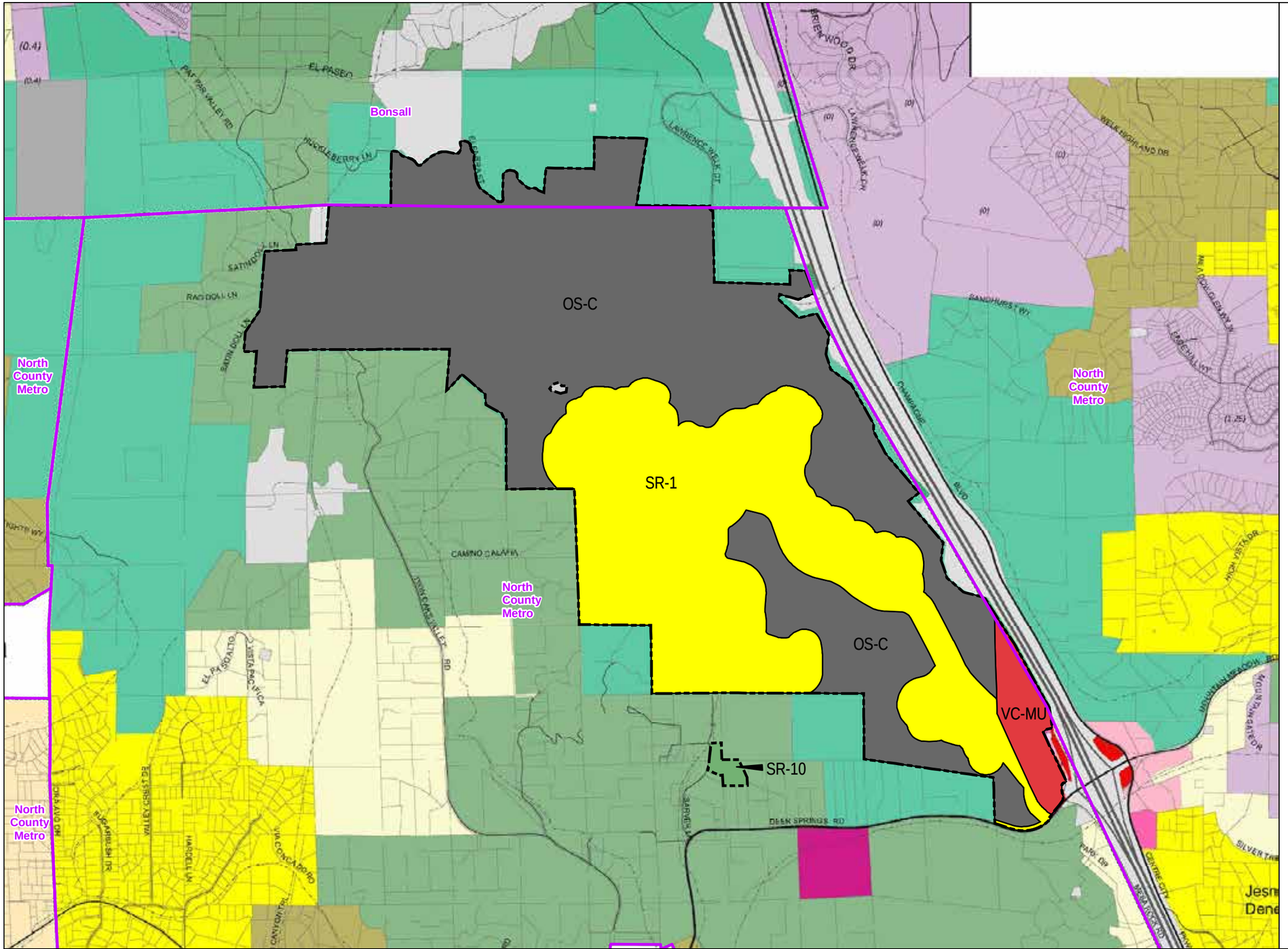

General Plan Land Use Designations

Adopted August 2011

- Village Residential (VR-30)
- Village Residential (VR-24)
- Village Residential (VR-20)
- Village Residential (VR-15)
- Village Residential (VR-10.9)
- Village Residential (VR-7.3)
- Village Residential (VR-4.3)
- Village Residential (VR-2.9)
- Village Residential (VR-2)
- Semi-Rural Residential (SR-.5)
- Semi-Rural Residential (SR-1)
- Semi-Rural Residential (SR-2)
- Semi-Rural Residential (SR-4)
- Semi-Rural Residential (SR-10)
- Rural Lands (RL-20)
- Rural Lands (RL-40)
- Rural Lands (RL-80)
- Specific Plan Area (residential densities in italics)[4]
- Office Professional[3]
- Neighborhood Commercial[3]
- General Commercial[3]
- Rural Commercial[3]
- Limited Impact Industrial[4]
- Medium Impact Industrial[3]
- High Impact Industrial[3]
- Village Core Mixed Use
- Public/Semi-Public Facilities[3]
- Public/Semi-Public Lands (Solid Waste Facility)
- Public Agency Lands
- Tribal Lands
- Open Space (Recreation)
- Open Space (Conservation)
- County Water Authority Boundary
- Twin Oaks Subregional Group Area Boundary
- Village Core Mixed Use (VC-MU)
- Project Site
- Community Plan Boundary

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SOURCE: COUNTY OF SAN DIEGO

FIGURE 12

Proposed General Plan Land Use Designations

Agricultural Resources Technical Report for the Newland Sierra Project

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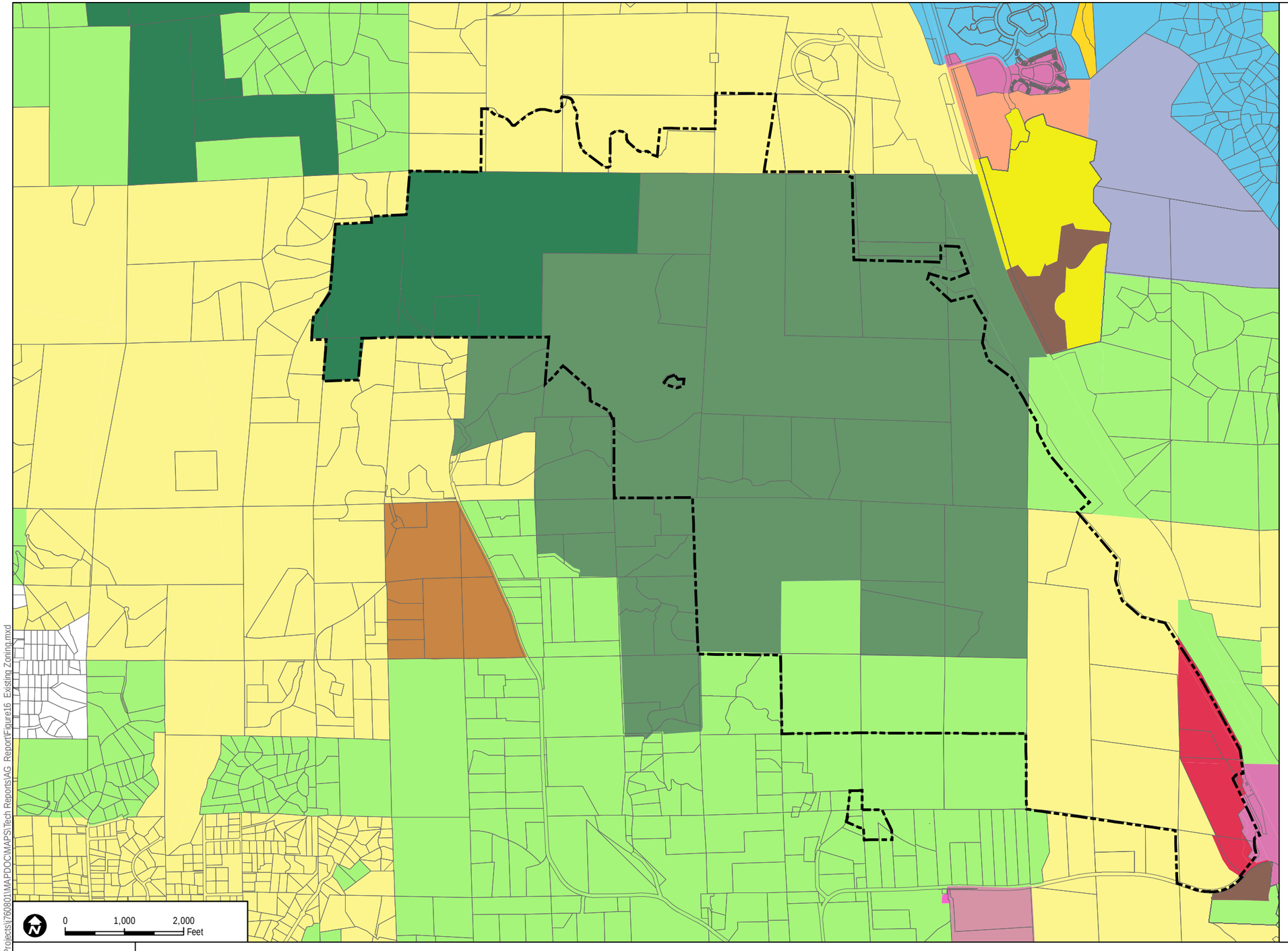

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ZONING SOURCE: SANGIS

FIGURE 13
Existing Zoning

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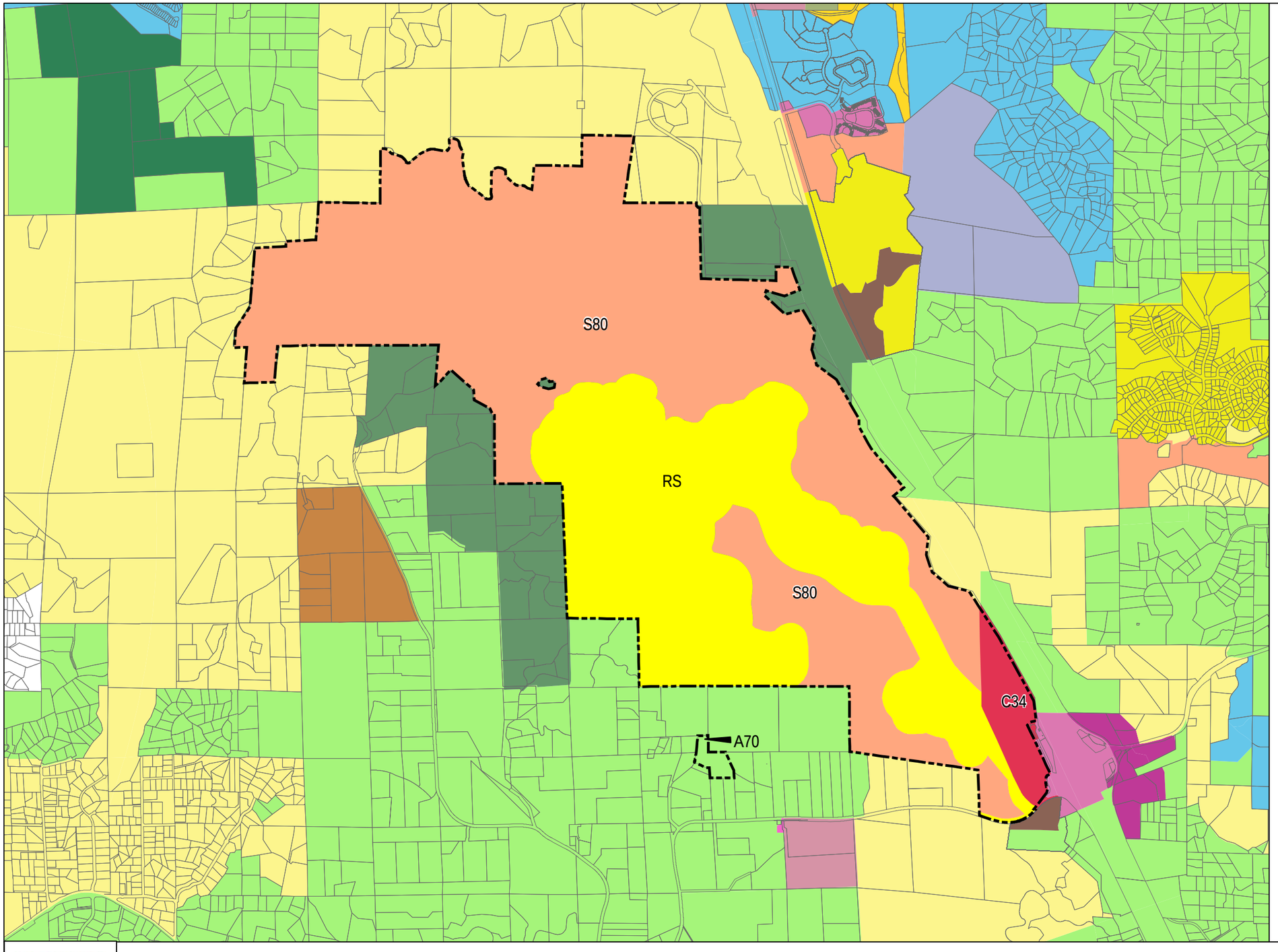

Project Site

Project Proposed Zoning

- Open Space (S80)
- Residential-Single
- General Commercial/ Residentail Use (C34)
- Agriculture (A70)

Zoning Codes

- A70 - Limited Agriculture
- A72 - General Agriculture
- C30 - Office-Professional
- C35 -General Commercial/ Limited Residential
- C36 - General Commercial
- C42 - Visitor Service Commercial
- RMH - Mobilehome Residential
- RR - Rural Residential
- RS - Single Family Residential
- RV - Variable Family Residential
- S80 - Open Space
- S82 - Extractive Use.
- S86 - Parking
- S88 - Specific Plan
- S90 - Holding Area
- S92 - General Rural

0 1,000 2,000 Feet

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ZONING SOURCE: SANGIS

FIGURE 14
Proposed Zoning

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2 ON-SITE AGRICULTURAL RESOURCES

2.1 LARA Model

The County of San Diego has approved a local methodology that is used to determine the importance of agricultural resources in the unincorporated area of San Diego County, known as the LARA Model. The LARA Model takes into account six factors to determine the importance of agricultural resources, including the following: Three Required Factors: water, climate and soil quality; and three Complementary Factors: surrounding land uses, land use consistency, and slope. The following subheadings include a description of the project Site's rating, for each LARA Model factor, including justification for the factor ratings assigned to the project Site. Each factor receives a rating of high, moderate, or low importance based on Site-specific information as detailed in the LARA Model Instructions (see Appendix B). The final LARA Model result is based on the resulting combination of factor ratings, in accordance with Table 2 in the County's *Guidelines for Determining Significance – Agricultural Resources*, Interpretation of LARA Model Results.

The County's *Guidelines for Determining Significance – Agricultural Resources*, uses the LARA Model to help evaluate, "adverse environmental effects that a proposed project may have on agricultural resources." This guidance document defines an "agricultural resource" as follows:

- A site with an active agricultural operation;
- A site designated as, and that meets the definition of, an Important Farmland Category (Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance) as defined in the Department of Conservation's FMMP;
- A site with a history of agricultural production based on aerial photography or other data sources identifying agricultural land uses.[1]

Based on a review of the County's available Geographic Information Systems (GIS) aerial mapping, the project Site does not contain a history of agricultural production. As such, there is no evidence of historic agricultural production per the County's *Guidelines for Determining Significance – Agricultural Resources* and would not designate the Site as an agricultural resource. Although the Site contains Farmland of Local Importance, per the County's Guidelines, it is not considered an agricultural resource as there is no evidence to demonstrate that portions of the Site have been used for agriculture. Therefore, it would not be required to evaluate the project Site using the LARA Model analysis.

[1] The County's *Guidelines for Determining Significance – Agricultural Resources* states that, "examples of other data sources that identify agricultural land use include data from the County Department of Agriculture Weights and Measures, the State Department of Water resources Land Use data, and vegetation data from the County Department of Planning & Development Services."

2.2 Guidelines for the Determination of Significance

The following significance guideline is the basis for determining the significance of impacts to important on-site agricultural resources, as defined by the LARA Model. Direct impacts to agricultural resources are potentially significant when a project would result in the following:

- The project site has important agricultural resources, as defined by the LARA Model; and the project would result in the conversion of agricultural resources that meet the soil quality criteria for Prime Farmland or Farmland of Statewide Importance, as defined by the FMMP; and as a result, the project would substantially impair the ongoing viability of the site for agricultural use.

2.3 Analysis of Direct Project Effects

2.3.1 On-Site Direct Effects

The project Site has not historically been used for agricultural operations because the project Site contains steep topography and rock outcroppings that are not favorable for agricultural activities.

As detailed in Section 1.2, Project Location and Description, the project includes 1,209 acres of open space that would be preserved in three major blocks along the northern, eastern, and central portions of the project Site. This open space area would buffer development on the project Site from surrounding agricultural areas and would reduce potential land use conflicts with the existing agricultural operations surrounding the project Site. The project would also include professionally managed vineyards planted on slopes throughout the Community that promote an agriculture character and provide a productive agricultural use on the project Site. To separate commercial activity from residents, these vineyards would be located no closer than 80 feet from roads and 100 feet from any residential property. Furthermore multiple parks planned throughout the project Site would include a community garden component.

Based on a review of the County's available Geographic Information Systems (GIS) aerial mapping, the project Site does not contain a history of agricultural production. As such, there is no evidence of historic agricultural production per the County's *Guidelines for Determining Significance – Agricultural Resources* and therefore the Site would not be designated as an agricultural resource. Although the Site contains Farmland of Local Importance, per the County's Guidelines, it is not considered an agricultural resource as there is no evidence to demonstrate that portions of the Site

have been used for agriculture. Therefore, the Site would not need to be evaluated using the LARA Model. As such, the project Site is not considered an important agricultural resource.[2]

As described in Section 1.4.2, the project Site does not contain any Williamson Act Contract lands, County agricultural preserves, lands designated Prime Farmland or Farmland of Statewide Importance, and does not have any active irrigated croplands or other crop production. As such, none of these agricultural resources would be directly impacted by the project. The project Site also contains approximately 3.4 acres of Unique Farmland that would not be directly impacted by the project. However, there is approximately 31.7 acres of Farmland of Local Importance, most of which occurs on the southern portion of the project Site. This southern area of approximately 21.6 acres of Farmland of Local Importance is within the project development footprint and would be directly impacted by development of the project. However, based on Section 4.1.1 of the County Agricultural Resource Guidelines the project would not result in direct impacts because the project Site was not determined to be an important agricultural resource. Therefore, the proposed project will have less than significant direct impacts to agricultural resources on the project Site.

2.3.2 Off-Site Direct Effects

As described in Section 1.2, Project Location and Description, the off-site improvements associated with the proposed project include the following:

- Widening of Deer Springs Road from Sarver Lane to the I-15 interchange (Option A and Option B)
- Widening Twin Oaks Valley Road south of Deer Springs Road (City of San Marcos)
- Widening of Sarver Lane and signalizing the Sarver Lane and Deer Springs Road intersection
- Improving the I-15/Deer Springs Road interchange

For the widening of Deer Springs Road, this analysis evaluates the impacts from Option B (construct the segment of Deer Springs Road from I-15 to 1,500 feet west of Mesa Rock Road as a 4-lane 4.1A Major Road) because it represents the largest area of potential off-site impacts. Although the project Site was determined to not be an important agricultural resource any impacted off-site agricultural operations were conservatively assumed to be important agricultural resources in this analysis and would require full mitigation for any impacts. See Figures 15a through 15d, Option B Off-Site Important Farmland Categories.

[2] Per the County's *Guidelines for Determining Significance – Agricultural Resources* an important agricultural resource is, "determined to be important pursuant to the County LARA model."

The off-site improvements associated with the project would result in impacts to the following FMMP designations: 5.68 acres of Prime Farmland, and 0.14 acres of Farmland of Statewide Importance. These direct off-site impacts to Prime Farmland and Farmland of Statewide Importance would only account for a total of 5.82 acres and most of these impacts would occur within existing roadway right-of-ways, making these areas potentially unavailable for agricultural use in the future. Therefore, the project would result in potentially significant impacts to approximately 5.82 acres of importance agricultural resources and would require mitigation, as described in Section 2.4. See Table 4, below.

Table 4
Off-Site Impact Summary Table

Parcel being Impacted	Prime Farmland Impacted	Farmland of Statewide Importance Impacted	Farmland of Local Importance being Impacted	Other Land being Impacted	Urban and Built-up Land being Impacted	Total Impact
1822701900	0.022			0.037		0.06
1822701400	0.336					0.34
1822701200	0.864		0.682			1.55
1822601000	0.139		0.151	0.050		0.34
1822600800	3.407		0.002			3.41
1820810800		0.114		0.003		0.12
1820810700		0.024			0.109	0.13
1820740700	0.908			1.110		2.02
Total	**5.68**	**0.14**	**0.84**	**1.20**	**0.11**	**7.96**

SOURCE: CALIFORNIA DEPT OF CONSERVATION; BING 2014

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FIGURE 15a

Option B Off-Site Important Farmland Categories

Agricultural Resources Report for the Newland Sierra Project

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SOURCE: CALIFORNIA DEPT OF CONSERVATION; BING 2014

FIGURE 15b

Option B Off-Site Important Farmland Categories

Agricultural Resources Report for the Newland Sierra Project

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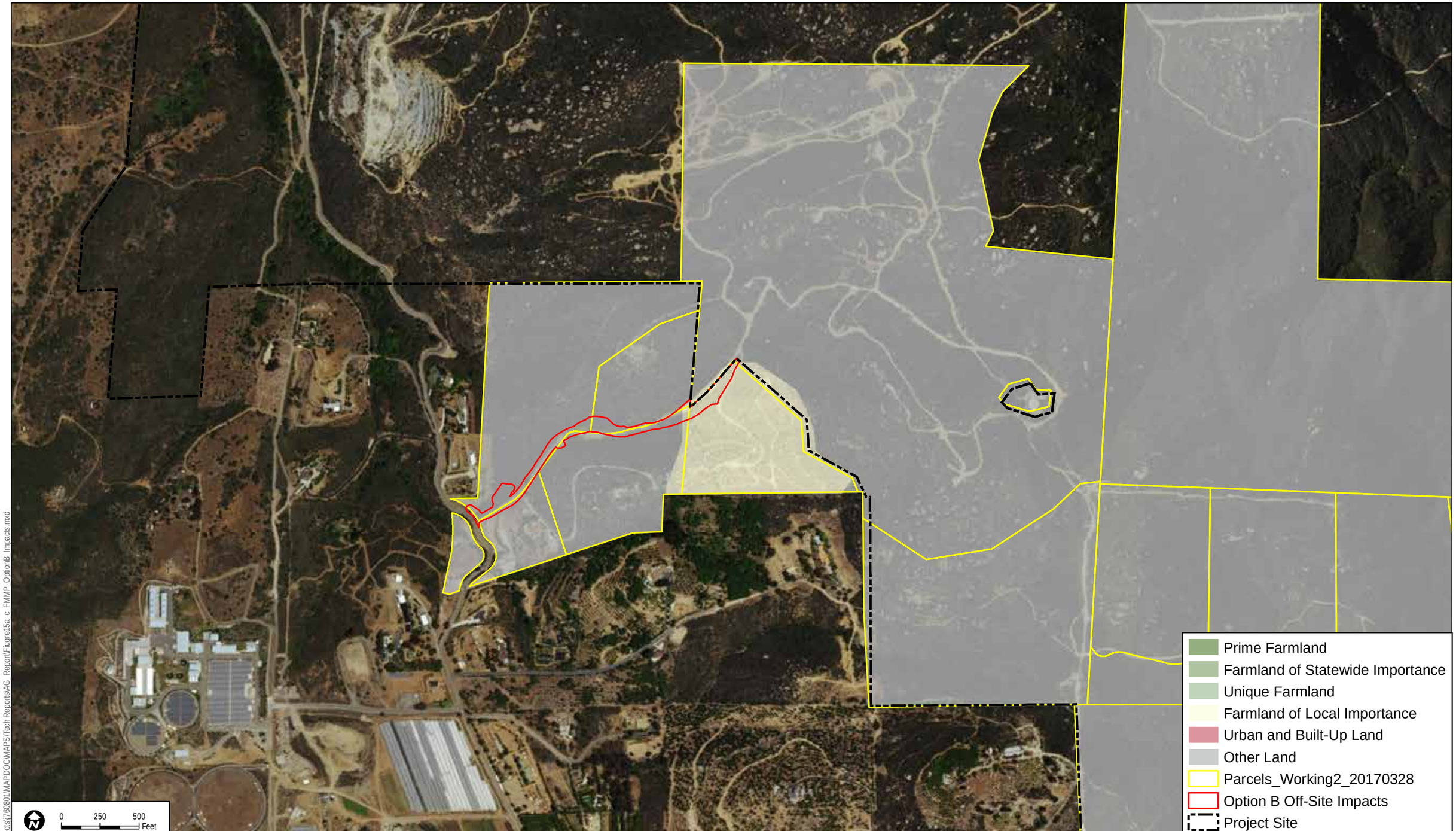

SOURCE: CALIFORNIA DEPT OF CONSERVATION; BING 2014

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FIGURE 15c

Option B Off-Site Important Farmland Categories

Agricultural Resources Report for the Newland Sierra Project

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SOURCE: CALIFORNIA DEPT OF CONSERVATION; BING 2014

FIGURE 15d

Option B Off-Site Important Farmland Categories

Agricultural Resources Report for the Newland Sierra Project

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2.4 Mitigation Measures

Pursuant to the County of San Diego's *Guideline for Determining Significance Agricultural Resources* for direct impacts, a 1:1 mitigation ration would be required for 5.82 acres of impacts to agricultural resources that meet the soil quality criteria for Prime Farmland and Farmlands of Statewide Importance and that are available for agriculture. Therefore, the project would mitigate for 5.82 acres of impacts to Prime Farmland or Farmland of Statewide Importance. Furthermore, the acreage of agricultural uses (i.e., vineyards) added by the project to the project Site were conservatively not counted towards this mitigation requirement. Therefore, the applicant shall implement the following mitigation measure:

M-AGR-1 The applicant shall purchase mitigation credits through the County of San Diego's Purchase of Agricultural Easements (PACE) program. The County's PACE program is an approved mitigation banking method, which uses in-lieu fees to purchase PACE credits to offset agricultural impacts. Each acre of land permanently protected with an agricultural conservation easement under the PACE program would equate to one mitigation credit. Therefore, prior to issuance of a grading permit the applicant shall mitigate for the 5.82 acres of conservatively assumed impacts at a 1:1 ratio through the purchase of 5.82 mitigation credits through the County's PACE program.

2.5 Conclusions

As described in Section 2.3.1, the project Site was not determined to be an important agricultural resource pursuant to the County's *Guidelines for Determining Significance – Agricultural Resources*. As a result, direct on-site impacts from the project to agricultural resources would be less than significant and no mitigation would be required.

As discussed in Section 2.3.2, off-site improvements associated with the project include the widening of Deer Springs Road from Sarver Lane to the I-15 interchange (the worst case scenario of Option B is evaluated here), widening Twin Oaks Valley Road south of Deer Springs Road, widening of Sarver Lane and signalizing the Sarver Lane and Deer Springs Road intersection, as well as improving the I-15/Deer Springs Road interchange. These off-site improvements would impact approximately 3.05 acres Prime Farmland and Farmland of Statewide Importance. As such, direct impacts to off-site agricultural resources would be potentially significant and would require mitigation.

Project impacts to significant agricultural resources may be mitigated through a combination of on-site agricultural preservation, off-site agricultural preservation, or participation in the County's PACE program. It is noted that the PACE program only accepts land into its mitigation

bank that has been shown to be an important agricultural resource (with Prime Farmland or Farmland of Statewide Importance soils) per the LARA model. Thus, the use of PACE mitigation bank credits would result in the preservation of important agricultural land and would mitigate project impacts to below a level of significance. The County of San Diego contains approximately 168,505 acres of Prime Farmland and Farmland of Statewide Importance soils (County of San Diego 2007). As such, the purchase of 5.82 acres of conservation easements through the PACE program is a feasible mitigation measure. Impacts to Prime Farmland and Farmland of Statewide Importance (approximately 5.82 acres) would require mitigation at a 1:1 ratio, pursuant to the County's *Guideline for Determining Significance Agricultural Resources* for direct impacts to agricultural resources. Therefore, M-AGR-1 would require the applicant to purchase 5.82 mitigation credits through the County's PACE program prior to issuance of a grading permit. With implementation of M-AGR-1 direct off-site impacts to agricultural resources would be mitigated to less than significant.

3 OFF-SITE AGRICULTURAL RESOURCES

3.1 Guidelines for the Determination of Significance

The following significance guidelines are the basis for determining the significance of indirect impacts, to off-site agricultural operations, in San Diego County:

a. The project proposes a non-agricultural land use within one-quarter mile of an active agricultural operation or land under a Williamson Act Contract (Contract) and as a result of the project, land use conflicts between the agricultural operation or Contract land and the proposed project would likely occur and could result in conversion of agricultural resources to a non-agricultural use.

b. The project proposes a school, church, day care or other use that involves a concentration of people at certain times within one mile of an agricultural operation or land under Contract and as a result of the project, land use conflicts between the agricultural operation or Contract land and the proposed project would likely occur and could result in conversion of agricultural resources to a non-agricultural use.

c. The project would involve other changes to the existing environment, which due to their location or nature, could result in the conversion of off-site agricultural resources to a non-agricultural use or could adversely impact the viability of agriculture on land under a Contract.

3.2 Analysis of Project Effects

The County's *Guidelines for Determining Significance – Agricultural Resources* states that the extent to which a project would include a land use that is similar to the existing uses in the surrounding area is an important factor for considering the significance of the placement of a non-agricultural use in proximity to an agricultural operation. A project proposed contiguous to an agricultural operation or Williamson Act Contract land would require greater scrutiny than a project separated from the agricultural operation or Williamson Act Contract land by other land uses. Where incompatible land uses are located near existing agricultural operations, adverse indirect impacts can include liability concerns, trespass, vandalism, theft, pesticide or farm practice complaints, pollutants, erosion, importation of pests, pathogens, and weeds, and increased traffic. Conflicts at the interface of urban and agricultural uses include both effects from existing agricultural uses on a newly established non-agricultural use and vice versa (County of San Diego 2007).

The County's *Guidelines for Determining Significance – Agricultural Resources* also states that while the focus of this report is on impacts to agricultural resources rather than the impacts to the

proposed new residents caused by agricultural operations; the adverse impacts perceived by the new residents contribute to the degradation of viability of surrounding agricultural uses. This is caused when nuisances or safety concerns perceived by urban neighbors trigger complaints about farming practices potentially causing farmers to feel pressure to discontinue their operations or reduce investment/productivity in their operation. Nuisance complaints may also cause farmers to modify or restrict their farming practices, resulting in potential economic hardships.

As described in Section 1.2, Project Location and Description, the project would result in the construction of 2,135 residential dwelling units, 81,000 square feet of commercial space, and a 6-acre school site on approximately 1,985 acres. Additionally, the project would make off-site improvements including widening of Deer Springs Road from Sarver Lane to the I-15 interchange (the worst case scenario of Option B is evaluated here), widening Twin Oaks Valley Road south of Deer Springs Road, widening of Sarver Lane and signalizing the Sarver Lane and Deer Springs Road intersection, as well as improving the I-15/Deer Springs Road interchange. These changes in land use on and off the project Site have the potential to result in indirect effects to agricultural lands as described below.

3.2.1 Indirect Impacts – Williamson Act Lands

The County's *Guidelines for Determining Significance - Agricultural Resources* states that, "For most types of agriculture, interface conflicts would usually be less than significant, if the land uses are separated by 300 feet (the distance required by several land use jurisdictions to address agriculture urban interface conflicts); however agricultural uses within one-quarter mile from the project Site will be reviewed to determine if potential indirect impacts could occur to those operations" (County of San Diego 2007).

It is also described that, "The type of agricultural uses surrounding the project Site will affect the degree of agriculture interface conflicts that would be expected to occur. For example, orchard crops such as avocadoes and citrus are often compatible with residential uses, while confined animal facilities can be highly incompatible with residential uses. The degree of compatibility of the agricultural use with non-agricultural uses will determine the distance that an evaluation of potential impacts will be required" (County of San Diego 2007). This is due to lower chemical treatments, less farmworker presence, less truck traffic, and fewer odors.

As shown in Figure 10, no Williamson Act Contract lands or County Agricultural Preserves exist within the proposed project's ZOI. The ZOI includes any parcel that is partially within 0.25 mile of the project Site, as determined by the Attachment F in the County of San Diego's *Guideline for Determining Significance Agricultural Resources* and is shown in Figure 5, On-Site

Agricultural Resources. Therefore, the project does not propose a non-agricultural land use within one-quarter mile of land under Contract and impacts would be less than significant.

3.2.2 Indirect Impacts – Land Use Conflicts

The County of San Diego's *Guidelines for Determining Significance – Agricultural Resources* states that, "Any project that proposes a school must evaluate potential impacts within 1 mile from the project Site because existing regulations can restrict certain normal agricultural activities within 1 mile of a school. Furthermore, when sensitive receptors and uses that would involve large concentrations of people are proposed near agriculture, the potential for agriculture interface conflicts increases significantly" (County of San Diego 2007).

The proposed project does include the construction of a school in the southernmost portion of the project Site near Deer Springs Road in the proposed Sierra Town Center planning area. The proposed project would be a use that involves a concentration of people at certain times within 1 mile of existing agricultural land uses. Additionally, the existing land under Williamson Act Contracts are located just outside the proposed project's ZOI, and therefore, the proposed school would be developed within 1 mile of the land under Contract. Therefore, as a result of the proposed project, land use conflicts between the Contract land and existing agricultural land and the proposed project could occur.

Adverse impacts caused by incompatible development near agricultural uses include, but are not limited to, farm practice complaints, pesticide use limitations, liability concerns, and economic instability caused by urbanization and changing land values; trespassing, theft, and vandalism; damage to equipment, crops, and livestock; crop and irrigation spraying limitations due to urban use encroachment; introduction of urban use pollutants entering farm water sources; competition for water; development affecting recharge of groundwater; soil erosion and stormwater runoff emanating from urban use; shading of crops from inappropriate buffering; importation of pests and weeds from urban areas or introduced pest populations from unmaintained landscaping; increased traffic; effects of nighttime lighting on growth patterns of greenhouse crops; and interruption of cold air drainage.

Although these active agricultural lands are within one-quarter mile of the project boundary, the development footprint of the proposed project does not abut any of these existing active agricultural lands due to proposed open space and fire safety fuel modification zones. The closest proposed project land use to an active agricultural operation would be the residential lots in the Sierra Knoll planning area located approximately 150 feet from the nearest active agricultural use, which are the orchards to the southwest of the project Site along Lynn Lane. The County's *Guidelines for Determining Significance - Agricultural Resources* states that, "The type of

agricultural uses surrounding the project Site will affect the degree of agriculture interface conflicts that would be expected to occur. For example, orchard crops such as avocadoes and citrus are often compatible with residential uses." As such, the less intensive interface conflicts or orchard operations and the 150 foot buffer between these orchards and the nearest residential lot on the project Site would reduce potential indirect land use conflicts.

Additionally, the densest housing, along with the school, proposed would be located in the Sierra Town Center planning area near Deer Springs Road and I-15 in the southeast portion of the project Site, which is located away from existing agricultural operations. As detailed in Section 1.2, Project Location and Description, the project includes 1,209 acres of open space that would be preserved in three major blocks along the northern, eastern, and central portions of the project Site. This open space area would buffer development on the project Site from surrounding agricultural areas and would reduce potential land use conflicts with the existing agricultural operations surrounding the project Site. The project would also include professionally managed vineyards and community gardens in park areas throughout the Community that promote an agriculture character, provide a productive agricultural use on the project Site, and further separate active agricultural uses from incompatible land uses. As such, proposed development would be buffered from the existing off-site active agricultural land uses within the ZOI and indirect impacts from the conversion of agricultural land would be less than significant.

3.2.3 Indirect Impacts – Changes to the Existing Environment

As previously described, the proposed project includes the development of residences, commercial uses, a school, and various off-site roadway improvements. The potential direct impacts of the proposed project on off-site agricultural soils is described in Section 2.3.2, Off-Site Direct Effects, and are fully mitigated through payments into the County's PACE program. Additionally, the closest proposed non-agricultural land use lots would be located approximately 150 feet from the nearest active agricultural use. This and many of the other existing agricultural operations in proximity to the project Site are orchards, which have a lower degree of potential land use conflicts with residential uses (County of San Diego 2007). Furthermore, the proposed project would include 1,209 acres of open space, professionally managed vineyards, and community gardens throughout the project Site that would buffer development on the project Site from surrounding agricultural areas and would reduce potential land use conflicts with the existing agricultural operations surrounding the project Site.

Considering these land uses and the distance of the proposed project's development to existing agricultural uses, the proposed project is not anticipated to change the existing environment, which due to its location or nature, could result in the conversion of off-site agricultural

resources, including Contract land, to non-agricultural use or could adversely impact the viability of agriculture on land under a contract. The proposed project would not preclude agricultural operations on these lands in the future and is not anticipated to result in conversion of these off-site agricultural resources, including Contract land, to a non-agricultural use. For the reasons described above, the proposed project would have less than significant indirect impacts to agricultural resources.

3.3 Mitigation Measures and Design Considerations

Based on the above guidelines, the project's impacts to off-site agricultural resources would be less than significant and no mitigation measures or project design features have been identified.

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4 CONFORMANCE WITH AGRICULTURAL POLICIES

4.1 Applicable San Diego County General Plan Policies

As evaluated in Table 5, below, the proposed project would not conflict with applicable General Plan policies related to agriculture. A full table analyzing general plan policy conformance is located in Appendix DD of the proposed project's Environmental Impact Report (EIR). The proposed project would contribute in perpetuity to the County's rural character and open space network through the design of the project. The proposed project has been designed to cluster the densest portions of development near in the southern portion of the project Site, and the least dense portions of development closest to the proposed open space to the north. Based on the analysis provided in Table 5, the proposed project is consistent with General Plan policies related to agriculture.

4.2 Conclusions

Based on the consistency analysis provided in Table 5, no significant impacts related to conformance with agricultural policies have been identified.

Table 5
General Plan Agricultural Goals and Policies

Goal or Policy	Project Consistency
Land Use Element	
LU-5.3 Rural Land Preservation. Ensure the preservation of existing open space and rural areas (e.g., forested areas, agricultural lands, wildlife habitat and corridors, wetlands, watersheds, and groundwater recharge areas) when permitting development under the Rural and Semi-Rural Land Use Designations.	The vast majority of the project Site has a General Plan Land Use Designation of Rural Lands (RL-20). The proposed project would preserve approximately 1,209 acres of land as open space. Currently, there are approximately 35 acres of land identified as Farmland of Local Importance and Unique Farmland within the project Site, with approximately 189 acres zoned as agricultural. Even though the project would only retain approximately 6 acres of this agricultural land, the on-site terrain of steep slopes and rock outcroppings are generally not conducive to agricultural use. Additionally, much of the existing, though small amounts, of agricultural land uses on Site consist of encroachments from adjacent properties. These encroaching agricultural operations would remain with implementation of the proposed project.
LU-6.4 Sustainable Subdivision Design. Require that residential subdivisions be planned to conserve open space and natural resources, protect agricultural operations including grazing, increase fire safety and defensibility, reduce impervious footprints, use sustainable development practices, and when appropriate, provide public amenities.	The proposed project would preserve approximately 1,209 acres of land as open space. As discussed above, the existing on-site agricultural uses consist of small encroachments from adjacent properties and the steep rocky terrain does not promote agricultural land uses. These encroaching agricultural operations would remain with implementation of the proposed project.
LU-7.1 Agricultural Land Development. Protect agricultural lands with lower density land use designations that support continued agricultural operations.	The on-site existing agricultural land uses consist of encroachments from adjacent properties. These encroaching agricultural operations would remain with implementation of the proposed project. Additionally, the densest proposed land uses would be in the southeast corner of the project Site near Deer Springs Road and I-15, with land use density decreasing to the north and west, nearest the proposed open space and existing adjacent agricultural land uses.
Conservation and Open Space Element	
GOAL COS-6 Sustainable Agricultural Industry. A viable and long-term agricultural industry and sustainable agricultural land uses in the County of San Diego that serve as a beneficial resource and contributor to the County's rural character and open space network.	The proposed project would not reduce the viability, long-term agricultural industry, or sustainable agricultural land uses in the County of San Diego that serve as a beneficial contributor to the County's rural character and open space network. Although the project would change the zoning for a portion of the Site from A70 to Residential, this land has never been in active agricultural production, nor is it designated by the FMMP as Prime Farmland, Farmland of Statewide or Local Importance. Therefore, the long-term viability of the agricultural industry in the County would not be affected by this zone change. Additionally, the proposed project would preserve approximately 1,209 acres of land as open space.

Table 5
General Plan Agricultural Goals and Policies

Goal or Policy	Project Consistency
COS-6.2 Protection of Agricultural Operations. Protect existing agricultural operations from encroachment of incompatible land uses by doing the following: • Limiting the ability of new development to take actions to limit existing agricultural uses by informing and educating new projects as to the potential impacts from agricultural operations • Encouraging new or expanded agricultural land uses to provide a buffer of non-intensive agriculture or other appropriate uses (e.g., landscape screening) between intensive uses and adjacent non-agricultural land uses • Allowing for agricultural uses in agricultural areas and designing development and lots in a manner that facilitates continued agricultural use within the development • Requiring development to minimize potential conflicts with adjacent agricultural operations through the incorporation of adequate buffers, setbacks, and project design measures to protect surrounding agriculture • Supporting local and state right-to-farm regulations • Retain or facilitate large and contiguous agricultural operations by consolidations of development during the subdivision process. Discourage development that is potentially incompatible with intensive agricultural uses includes schools and civic buildings where the public gather, daycare facilities under private institutional use, private institutional uses (e.g., private hospitals or rest homes), residential densities higher than two dwelling units per acre, and office and retail commercial.	The development of the proposed project would not result in the fragmentation of substantial interruption of the surrounding agricultural land uses. Proposed development, including the proposed school, would be densest in the southeast corner of the project Site, away from the majority of the existing nearby agricultural land uses and would not proposed incompatible uses immediately adjacent to existing nearby agriculture. Adequate open space buffers are proposed around new development. The project would retain approximately 6 acres of land currently zoned as agricultural but does not propose the expansion of such land uses.
COS-6.3 Compatibility with Recreation and Open Space. Encourage siting recreational and open space uses and multi-use trails that are compatible with agriculture adjacent to the agricultural lands when planning for development adjacent to agricultural land uses. Recreational and open space uses can serve as an effective buffer between agriculture and development that is potential incompatible with agriculture uses.	The proposed project provides a buffer of open space (portions of which also act as fire safety fuel modification zones) between proposed development and existing adjacent agricultural land uses.

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5 CUMULATIVE IMPACT ANALYSIS

5.1 Guidelines for the Determination of Significance

The guidelines for determining the significance of cumulative impacts are based on the same guidelines used to determine the significance of project level impacts. This is done by analyzing the significance of the individual project impacts, in combination with the impacts caused by other projects, in the cumulative study area.

5.2 Analysis of Project Effects

Per California Environmental Quality Act (CEQA) Guidelines Section 15130(b)(1), a list of projects has been compiled, which are based upon past, present, and probable future projects, that could cumulatively contribute to the project's impacts. Cumulative projects include agricultural resources on Site, on-going agricultural operations (including fallow land), and properties with a history of agricultural uses. Projects that meet any of those three criteria have been included in the cumulative analysis.

The cumulative projects study area generally includes the North County Metropolitan Subregional Plan area discussed in Section 1.4.1, Regional Context. This area was chosen due to similar climate, topography, and the overall rural characteristics, in the vicinity. The North County Metropolitan Subregional Plan area has approximately 8,460 acres of grazing land and approximately 11,230 acres of cropland (County of San Diego 2011). However, more densely urbanized areas exist within and surrounding the Subregion including the City of Vista, City of San Marcos, and City of Escondido.

The full range of cumulative projects are shown in Figure 16, Cumulative Projects Map; however, Table 6, Cumulative Projects, lists the cumulative projects nearby the project Site.

Table 6
Cumulative Projects

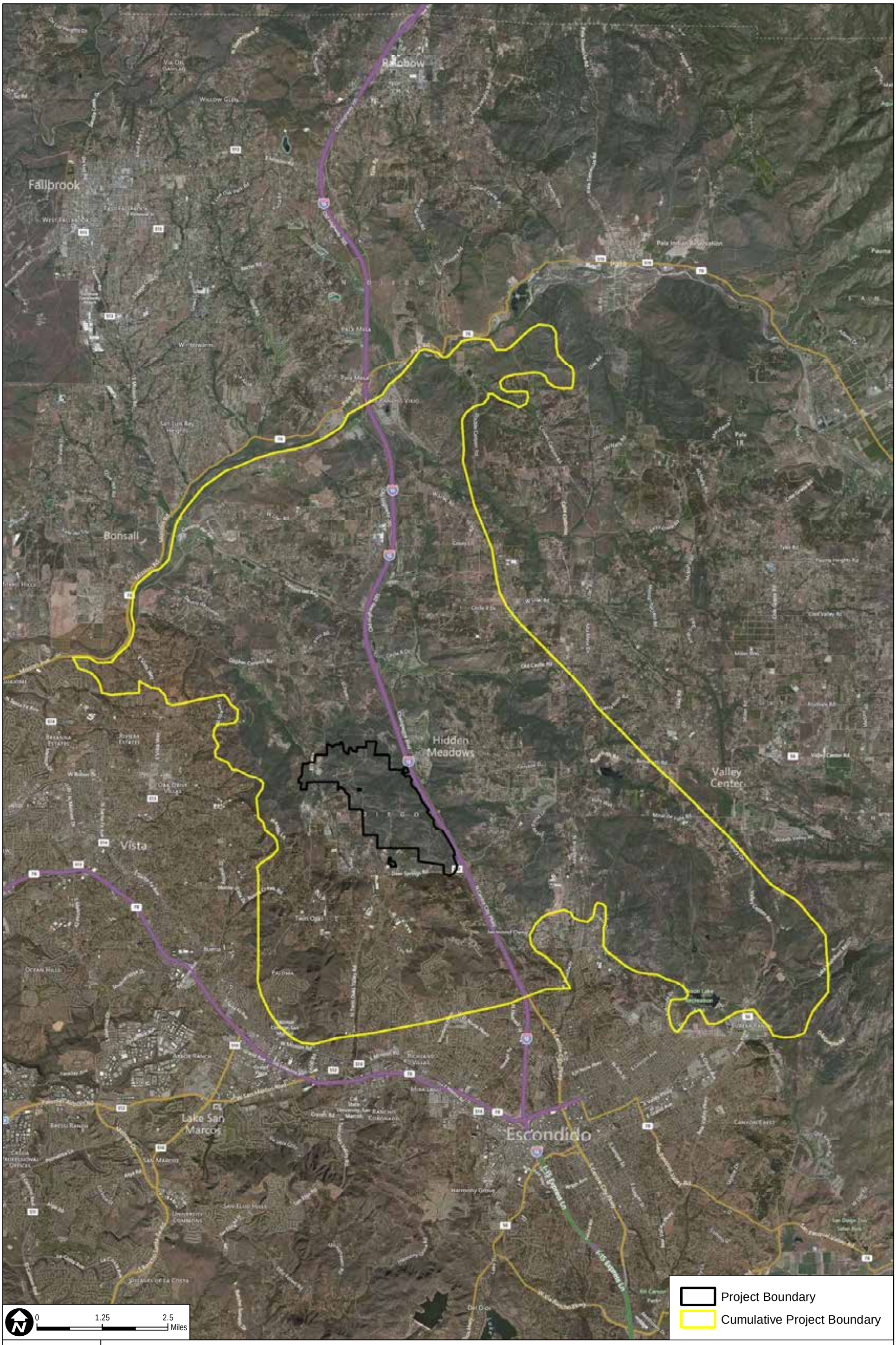
Project Name	Project Number	Agricultural Resources On Site	Important Agricultural Resource?	Direct Impact Estimate	Potential Indirect Impact Estimate	Brief Project Description
North County Metro - NC22	103 PDS2012-3800-12-005	None	-Sunset Climate Zone 21 is rated "high" -Not classified as prime farmland soil -Not located on Williamson Act Lands	No direct impacts	Located in an area of steep terrain and built-out land. Low potential to impact surrounding agricultural areas	44 Single Family Rural Residential - SR1 class.
North County Metro - NC3A	105 PDS2012-3800-12-005	Some orchards	-Climate Zone 21 is rated "high" -Site terrain slope grade is predominantly over 25% -Contains Farmland of Statewide Importance and Prime Farmland soils if irrigated -Not located on Williamson Act lands	Estimated impact of approximately 2 acres of Important Farmland	Potential to effect surrounding North County Metro agricultural areas	10 Single Family Residential - SR10
Champagne lakes, MUP MOD	118 PDS2006-3301-70-212-02	None	-Located on soils rated prime farmland, if irrigated. -Climate Zone 21 is rated "high" -Not located on Williamson Act lands	No direct impacts		Modification for the relocation of 51 RV spaces and one mobile home space to include full hookups to 20 RV spaces, a new restroom, and an area screened by landscaping for vehicle storage.
Moody creek farms llc, MUP MOD; p79-134w	120 PDS2009-3301-79-134-07	Orchards on site	-Potential Prime Farmland soil rating if irrigated and drained	Approximately 23% of land on site is considered Prime Farmland if irrigated and drained	Active farmland is located north and northeast of the project. Potential for indirect impacts to surrounding agricultural	The project will consist of expansion of the footprint of the previously approved Major Use Permit to include all of the stables; barns; riding rings and arenas; ¾ mile horse training track; ranch manager's

Table 6
Cumulative Projects

Project Name	Project Number	Agricultural Resources On Site	Important Agricultural Resource?	Direct Impact Estimate	Potential Indirect Impact Estimate	Brief Project Description
					resources	residence; farm employee housing; and accessory structures associated with the Equestrian Facility.
Hidden meadows - oak woodlands rezone	122	Yes	Contains Farmland of Statewide Importance soils			The Project will contain 17.3 acres of General Commercial, 5.6 acres of Office/Professional, 7.7 acres of 10.9 DU/AC Multifamily Residential and 5.2 acres of 15.0 DU/AC Multifamily Residential.
Brisa del mar	128 PDS2012-3800-12-002, PDS2012-3600-12-004, PDS2006-3100-5492	Yes	Contains Farmland of Local Importance soils			The project is a Tentative Map for a residential subdivision of 206 acres into 27 x 2-acre minimum lots.
Charles Froehlich TM	130 PDS2006-3100-5494	None	-	None		The project is a residential subdivision of two parent parcels, resulting in a total of six lots. The site is located on Double K Road within the Valley Center Community Planning Group in unincorporated San Diego County.
Golf green estates/s/site plan	134 PDS2006-3100-5498, PDS2007-3500-07-011	No	-			116 Lot subdivisions of 6,000 square foot parcels.
West Lilac Farms I & II	141 PDS2002-3100-5276	Yes	Unique Farmland			Approved Tentative Map for 28 single family lots on 92.8 acres.

Table 6
Cumulative Projects

Project Name	Project Number	Agricultural Resources On Site	Important Agricultural Resource?	Direct Impact Estimate	Potential Indirect Impact Estimate	Brief Project Description
Boyer	142 PDS2003-3200-20794	Yes	Unique Farmland			Approved Tentative Parcel Map for 3 lots on 3 acres.
Hefner/brown 4 lot and remainder TPM: TP	148 PDS2009-3200-21159	No	-			Subdivide a +/-57.9 acre parcel into four lots plus a remainder (lots range from 7.4 to 13.1 net acres).
Kirkorowicz, TPM	150 PDS2005-3200-20986	Yes	Unique Farmland			The project proposes a two lot subdivision for the creation of two single-family residences and associated driveways and septic.
Nichols Whitman, TPM	156 PDS2005-3200-20950	Yes	Contains soils designated for Farmland of Local Importance and Prime Farmland			TPM 4 Lots
Souris, TPM, 4 lots	162 PDS2004-3200-20820	Yes	Contains Farmland of Local Importance Soils			Divide 38.8 net acres into 4 parcels ranging in size from 4.01 to 21.47 net acres. One existing single-family residence and guesthouse resides on Parcel 3 and will remain
Tran TPM	163 PDS2004-3200-20835	Yes	Contains Farmland of Local Importance soils			4 Single Family Residential lots
Turner, TPM	164 PDS2008-3200-21113	Yes	Contains Farmland of Local Importance soils			4 Single Family Residential lots



SOURCE: Bing Maps 2015.

FIGURE 16

Cumulative Projects Map

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Cumulative projects surrounding the project Site, such as the Golf Green Estates project, would increase development that could preclude agricultural operations or reduce the compatibility of the surrounding area with agriculture. These projects could result in a potential cumulative impact from the conversion of agricultural land and of compatibility with agricultural uses. However, some of the cumulative projects would retain the rural character of the area and even enhance agricultural operations, including Moody Creek Farms.

As discussed above, the project Site is not considered to be an important agricultural resource and would mitigate for any potential direct off-site impacts to agricultural resources. According to the County's *Guidelines for Determining Significance – Agricultural Resources*, "A project that is determined not to be an important agricultural resource, that would not have significant indirect impacts to agricultural resources, and that would not conflict with agricultural zoning or a Williamson Act Contract would not have the potential to contribute to a cumulative impact." Furthermore, the densest housing that would be developed as part of the proposed project would be located near I-15 in the southeast portion of the project Site. The proposed project is not anticipated to change the existing environment, and would not result in the indirect conversion of off-site agricultural resources to a non-agricultural use or adversely impact the viability of agriculture on land under a Williamson Act Contract. Therefore, the project would not result in a cumulatively considerable contribution to a potential cumulative impact on agricultural resources.

5.3 Mitigation Measures and Design Considerations

Since cumulative projects would not contribute to a cumulatively considerable impact, no mitigation measures are identified.

5.4 Conclusions

No cumulative projects have been identified that would impact agriculturally important land; therefore, no significant cumulative effects to agriculture would occur.

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6 SUMMARY OF PROJECT IMPACTS AND MITIGATION

As described in Section 1.4.2, On-site Agricultural Resources, previous agricultural uses on the project Site ceased operation more than 45 years ago in the mid to late 1960s. Based on a review of the County's available Geographic Information Systems (GIS) aerial mapping, the project Site does not contain a history of agricultural production. As such, there is no evidence of historic agricultural production per the County's *Guidelines for Determining Significance – Agricultural Resources* and therefore the Site would not be designated as an agricultural resource. Although the Site contains Farmland of Local Importance, per the County's Guidelines, it is not considered an agricultural resource as there is no evidence to demonstrate that portion of the Site have been used for agriculture. Therefore the Site would not need to be evaluated using the LARA Model. As such, the project Site is not considered an important agricultural resource, would have less than significant direct on-site impacts, and is not required provide agricultural mitigation land for direct on-site impacts to agriculture.

The proposed project does include various off-site improvements including the widening or other improvements to Deer Springs Road, Twin Oaks Valley Road, Sarver Lane, and the I-15/Deer Springs Road interchange. As described in Section 2.3.2, Off-Site Direct Effects, the proposed project has potential direct off-site impacts to approximately 5.82 acres of off-site important agricultural soils from these off-site improvements. The proposed project would include mitigation measure M-AGR-1 to fully mitigate these potential direct off-site impacts through payments into the County's PACE program.

The proposed project would involve nonagricultural uses within one-quarter mile of active agricultural operations. However, the proposed project would not preclude agricultural operations on these lands and is not anticipated to result in conversion of agricultural resources to a non-agricultural use because the nearest residential lots are located over 150 feet away from the nearest active agricultural use. This active agricultural operation and many of the other active agricultural operations in proximity to the project Site consist of orchards, which have a lower degree of potential land use conflicts with residential uses (County of San Diego 2007). Additionally, the proposed project would include 1,209 acres of open space, professionally managed vineyards, and community gardens throughout the project Site that would buffer development on the project Site from surrounding agricultural areas and would reduce potential land use conflicts with the existing agricultural operations surrounding the project Site.

The proposed project has been designed to cluster development together allowing for the preservation of open space and a buffer between surrounding agricultural uses. Additionally, based on the analysis provided in Table 5, the proposed project is consistent with General Plan

policies related to agriculture. Furthermore, as determined in Section 5, Cumulative Impact Analysis, the proposed project would not contribute to a cumulatively considerable impact

Overall, the proposed project's impacts to on-site agricultural resources would be less than significant. The proposed project is not anticipated to substantially impair the ongoing viability of the agricultural use for surrounding land. The proposed project does not preclude the use of the portions of the project Site for future agricultural operations; however, no irrigated crop lands currently exist. Therefore, impacts would be less than significant with incorporation of mitigation measure M-AGR-1 identified in this report.

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8 LIST OF PREPARERS AND PERSONS AND ORGANIZATIONS CONTACTED

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8.2 Lead Agency

8.2.1 County of San Diego

Department of Planning & Development Services
Mark Slovick, Land Use/Environmental Planner III

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APPENDIX A

Lots and Acreages

APPENDIX A
Lots and Acreages

Assessor Parcel Number	ACREAGE
Project Site	
1742100800	45.403
1742101201	7.936
1742900200	10.226
1741901300	38.913
1741904100	145.020
1722201700	44.110
1866110900	94.274
1875404900	17.388
1781002600	41.036
1742100100	78.055
1741904000	1.046
1820202900	0.989
1720910700	34.289
1875405000	5.150
1781000500	42.498
1741904400	37.708
1742100500	77.780
1742110500	18.646
1782210900	41.062
1722201800	23.367
1742801400	3.237
1742801100	54.774
1866110700	44.295
1866110800	43.745
1866111700	6.652
1781011600	168.553
1862501300	27.143
1742100700	210.282
1782210800	0.585
1741902000	11.916
1781011700	42.959
1866111500	9.066
1866111400	21.256
1742110600	20.898
1781012800	8.811
1722201400	29.304
1722201500	0.313
1875405100	0.941
1781010100	11.283
1741904300	22.462
1742101800	4.642

APPENDIX A (Continued)

Assessor Parcel Number	ACREAGE
1742110400	62.094
1722201600	9.903
1866111100	78.561
1742101700	11.813
1742110700	22.578
1742101202	7.936
1781012500	72.490
1781012600	8.846
1722201300	49.029
1866112300	1.203
1866111900	0.002
1742101203	7.936
1781012700	31.929
1741901200	188.139
1820202800	0.599
1820406900	3.940
1866110100	19.088
1866111600	2.973
Median Parcel Size	**21.26**
Zone of Influence	
1742100800	45.403
1742101201	7.936
1782220900	0.459
1782220200	2.742
1782220400	1.908
1743002600	5.438
1742803500	8.827
1742900200	10.226
1742901800	8.991
1742901700	8.066
1743000500	2.621
1720633500	4.009
1720633300	2.478
1782221800	1.462
1741901300	38.913
1741904200	12.870
1741904100	145.020
1820404900	4.699
1722201700	44.110
1720930300	4.554
1742801000	5.676
1781801500	41.655
1866121300	24.235

APPENDIX A (Continued)

Assessor Parcel Number	ACREAGE
1866120300	42.458
1781803300	10.303
1866110900	94.274
1875404500	5.266
1875404900	17.388
1781002600	41.036
1860920500	7.011
1875403800	1.922
1860933800	0.119
1860933100	0.756
1820406600	21.558
1862501500	21.820
1862501000	9.261
1722200400	20.632
1742100100	78.055
1720912500	81.786
1782220600	2.995
1722202000	5.441
1742802400	4.245
1741904000	1.046
1820202900	0.989
1820202700	0.920
1820200600	0.255
1820204000	0.705
1820405300	4.635
1822601200	0.741
1742802100	8.578
1720930400	4.006
1720930100	8.883
1720910700	34.289
1742901500	9.905
1781902500	8.114
1781805000	4.342
1875404700	10.738
1875405000	5.150
1781000500	42.498
1782210500	9.205
1866124500	8.015
1862500900	5.397
1860932300	1.072
1820406400	20.138
1722201200	0.509
1741904400	37.708

APPENDIX A (Continued)

Assessor Parcel Number	ACREAGE
1742100500	77.780
1742110500	18.646
1782210900	41.062
1782220700	2.323
1743002000	3.920
1743000700	2.620
1743002300	13.453
1742802500	4.272
1742803200	13.769
1722201800	23.367
1743002500	3.891
1743000400	3.839
1720632600	8.569
1720633400	5.133
1820400200	4.816
1820407200	5.832
1820407300	5.750
1820204100	1.270
1860932000	2.216
1875404100	11.457
1742801400	3.237
1742802300	6.530
1720930200	4.740
1720930500	5.252
1742901200	11.062
1742801100	54.774
1781803500	10.707
1866110700	44.295
1866110800	43.745
1866111700	6.652
1866111300	1.654
1822601100	1.400
1781011600	168.553
1875402100	33.942
1820406300	15.864
1820406000	4.440
1866123600	16.974
1862501300	27.143
1720631400	47.685
1722200500	18.688
1742100700	210.282
1720912200	9.367
1720912300	7.796

APPENDIX A (Continued)

Assessor Parcel Number	ACREAGE
1720912400	10.865
1720911600	2.817
1782210800	0.585
1782221200	5.334
1782221300	5.178
1742802800	14.503
1742803100	7.607
1743000300	7.704
1741902000	11.916
1820200100	14.397
1820203500	9.590
1781011700	42.959
1820203700	6.837
1820401800	0.147
1742802200	9.027
1742800100	72.318
1742901300	15.675
1781902300	3.403
1781804700	13.560
1866122900	8.724
1781803000	4.102
1866111500	9.066
1866111400	21.256
1875403300	3.687
1875403500	27.837
1875404000	10.361
1781000700	41.139
1822601000	19.742
1742101101	38.510
1742101102	38.510
1742110600	20.898
1722201100	80.716
1720911400	7.824
1782220500	3.897
1782221100	0.858
1782221600	1.650
1742802700	6.294
1742802600	8.305
1781900200	5.928
1875401500	0.318
1781012800	8.811
1820204400	16.040
1820403600	5.069

Assessor Parcel Number	ACREAGE
1820204200	4.144
1820203600	2.988
1875404200	1.772
1860931900	0.365
1722201400	29.304
1722201500	0.313
1742901400	17.065
1720910401	35.581
1781902100	3.310
1781901900	7.817
1781804300	9.024
1781804200	9.098
1781801900	17.695
1820405500	5.212
1875405100	0.941
1822600900	2.379
1782210700	13.471
1781010100	11.283
1875402800	13.473
1866124600	8.005
1875401800	0.748
1875402600	3.656
1862501100	4.544
1862501200	3.652
1820405900	4.237
1820406100	13.622
1741904300	22.462
1742101800	4.642
1720631500	28.067
1742110400	62.094
1782220100	28.395
1782221000	0.698
1742802900	4.126
1743001300	10.362
1743002100	25.641
1743003100	27.830
1743002800	10.058
1722201900	9.393
1722202100	19.502
1720632700	14.549
1743000600	2.403
1820200400	1.951
1866120100	1.777

Assessor Parcel Number	ACREAGE
1742802000	9.148
1722201600	9.903
1781902400	15.711
1781804600	8.445
1866112100	0.024
1866111100	78.561
7717810001	40.998
1875404600	11.802
1782210600	7.426
1875402200	3.975
1862500300	48.134
1860933000	0.313
1742101700	11.813
1742110700	22.578
1875404300	8.716
1742101202	7.936
1782220300	1.751
1782221400	20.000
1743001500	20.604
1743002700	10.605
1743000100	10.459
1720633200	2.726
1720633100	11.852
1781012500	72.490
1781012600	8.846
1820405200	9.989
1820406700	5.157
1820407000	6.132
1820407100	5.857
1722201300	49.029
1742900500	10.671
1742900600	140.289
1781800500	7.388
1781802200	18.824
1820405600	2.353
1866112300	1.203
1866111900	0.002
1781000600	40.998
1860921000	1.506
1860933700	0.155
1875401600	0.337
1853321382	128.752
1862501400	25.886

APPENDIX A (Continued)

Assessor Parcel Number	ACREAGE
1742101203	7.936
1875404400	9.092
1720912100	34.609
1782220800	0.245
1742803000	4.055
1742803400	7.666
1743002200	8.254
1743002400	6.473
1742901900	20.104
1782221700	2.326
1781012700	31.929
1741901200	188.139
1820203100	6.671
1820202800	0.599
1820406800	0.001
1820406900	3.940
1820204300	4.133
1820204500	10.479
1742900400	38.271
1742901600	7.760
1720910402	35.581
1875405219	19.823
1781803100	14.198
1781803200	6.304
1781804900	8.523
1820405800	5.078
1866120200	41.087
1866112200	1.109
1866110100	19.088
1866111600	2.973
1782210300	12.691
1875402000	53.767
1875403100	10.407
1860920900	1.199
Median Parcel Size	**8.55**

APPENDIX B

LARA Model Instructions

3.1 LARA Model Instructions[6]

Application of the LARA model is intended for use in evaluating the importance of agricultural resources when it is determined that a discretionary project could adversely impact agricultural resources located onsite. The LARA model takes into account the following factors in determining importance of the agricultural resource:

Required Factors:	**Complementary Factors:**
Water	Surrounding Land Uses
Climate	Land Use Consistency
Soil Quality	Topography

Directions for determining the rating for each LARA model factor are provided in sections 3.1.1 through 3.1.6 of this document. Upon rating each factor, it is necessary to refer to Table 2, Interpretation of LARA Model Results, to determine the agricultural importance of the site.

Table 2. Interpretation of LARA Model Results

LARA Model Results			**LARA Model Interpretation**
Possible Scenarios	**Required Factors**	**Complementary Factors**	
Scenario 1	All three factors rated high	At least one factor rated high or moderate	The site is an important agricultural resource
Scenario 2	Two factors rated high, one factor rated moderate	At least two factors rated high or moderate	
Scenario 3	One factor rated high, two factors rated moderate	At least two factors rated high	
Scenario 4	All factors rated moderate	All factors rated high	
Scenario 5	At least one factor rated low importance	N/A	The site is *not* an important agricultural resource
Scenario 6	All other model results		

Data Availability

To complete the LARA model, various data sources are needed. The most efficient approach to completing the model is through analysis within a GIS. To facilitate this approach, the GIS data layers required to complete the LARA model are available upon request from DPLU. Available data sources include: groundwater aquifer type, Generalized Western Plantclimate Zones or "Sunset Zones", and Prime Farmland and

[6] Various data sources referenced in this document are available from DPLU in hard copy format (maps) or in digital format for use within a Geographic Information System (GIS). Obtaining various data sources will be required to determine the importance of the resource.

Farmland of Statewide Importance soil candidates. Other data sources are available from the SANGIS webpage at http://www.sangis.org/.

3.1.1 Water

The water rating is based on a combination of a site's CWA service status, the underlying groundwater aquifer type and the presence of a groundwater well (Table 3). Due to the variability of well yields and the potential for groundwater quality problems to adversely impact the viability of the well for agricultural purposes, the water factor allows for a reduction in the water rating based on site specific well yield and quality data, if that data is available (Table 4).

Table 3. Water Rating [7]

County Water Authority (CWA) Service Status	Groundwater Aquifer Type and Well Presence	Rating
Inside CWA service area with existing water infrastructure connections and a meter	Any groundwater aquifer type	High
Inside CWA service area with infrastructure connections to the site, but no meter has been installed	The site is located in an Alluvial or Sedimentary Aquifer *and* has an existing well	High*
	The site is located in an Alluvial or Sedimentary Aquifer, but has no existing well	Moderate*
	The site is located on Fractured Crystalline Rock and has an existing well	Moderate*
	The site is located on Fractured Crystalline Rock, but has no existing well	Low*
Outside CWA or inside CWA but infrastructure connections are not available at the site and no meter is installed	The site is located in an Alluvial or Sedimentary Aquifer *and* has an existing well	Moderate*
	The site is located in an Alluvial or Sedimentary Aquifer, but has no existing well	Low*
	The site is located on Fractured Crystalline Rock (with or without a well)	Low*
	The site is located in a Desert Basin (with or without a well)	Low*

*These water ratings may be reduced based on available groundwater quantity and quality information, in accordance with Table 4. If no additional groundwater quantity or quality data is available, the ratings above shall apply.

[7] If more than one underlying groundwater aquifer type exists at a site, usually the aquifer type that could produce the most water should be used to obtain the water rating. If it would be more reasonable to apply the rating based on the aquifer that would produce less water, a clear justification and reason for doing so must be provided.

Water Quality and Quantity Limitations

Site specific limitations to groundwater availability and quality exist and can lower the overall water rating of a site when data is available to support the limitation. Sites with imported water availability may not receive a lower water rating based on groundwater quality or yield data. Table 4 outlines potential water availability and quality limitations and the associated effect on the LARA model water rating.

Table 4. Groundwater Availability and Quality Effects on Water Rating

Groundwater Availability and Quality	Effect on Water Rating
The site has inadequate cumulative well yield (<1.9 GPM per acre of irrigated crops); TDS levels above 600 mg/L; or another documented agricultural water quality or quantity limitation exists	Reduces water rating by one level (i.e. from high to moderate or from moderate to low)

A determination of inadequate cumulative well yield as stated in Table 4 means that a site's well cannot produce at least enough water for each acre of irrigated crops at the site. At least 1.9 GPM is required per acre of irrigated crops, equating to production of 3 Acre Feet/Year (AFY) based on the following conversion factor: 1 AFY = 325,851 Gallons per Year / 365 days / 1440 minutes = 0.62 GPM. Cumulative well yield means that the combined yield of all wells on site may be summed to meet the required groundwater yield. As an example, if a site has 5 acres of irrigated crops, then production would need to be at least 9.5 GPM to produce enough water to irrigate the 5 acres, equating to approximately 15 AFY. If residence(s) exist on the project site, the groundwater analysis must demonstrate that an additional supply of 0.5 AFY can be achieved to account for residential water use associated with each existing onsite residence. To allow a reduction in the water quality score, TDS levels above 600 mg/L must be documented. If other documented water quality limitations exist that are not captured in the water quality measure of TDS, the water quality data must be provided and an associated water rating reduction justified. Although these requirements assume that water needs are consistent for a crop throughout the year while water requirements are typically higher in the dryer months, average annual required yield is used as the best available general measure of the adequacy of groundwater yields.

The quality and availability of imported water is not included as a factor to allow a reduction in the water rating due to an assumption that the MWD will continue to deliver water with the 500 mg/L TDS objective. However, it should be recognized that the degradation of the quality of Colorado River water is a known issue that could preclude the production of certain crops in the future. If in the future, the MWD is unable to meet their adopted water quality objectives, a similar reduction for imported water quality may need to be developed for consideration in the water score. Similarly, there is uncertainty regarding the continued future reliability of agricultural water deliveries based on various external issues that may affect local imported water supply such as protection of the Salton Sea and the stability of the Sacramento/San Joaquin Delta. As the impacts from external sources to local agricultural water deliveries become realized, the treatment of the water score in this document may need to be reevaluated.

Water Rating Explanation

Sites with availability of imported water always receive the highest water rating regardless of groundwater availability because the availability of imported water is essential for the long term viability of agriculture due to the limited natural rainfall and limited availability of groundwater resources in the County. Sites within the CWA service area that have no existing water meter, but that have water infrastructure connections to a site (in or near an adjacent street), are assigned a higher water rating than sites without existing water infrastructure connections. This is because the cost of extending off-site water infrastructure and obtaining a water meter is much higher than only obtaining a water meter and constructing onsite infrastructure connections to existing adjacent imported water infrastructure. Furthermore, the presence of existing imported water infrastructure adjacent to a site is a good indication that imported water is likely to become available to the site in the future (more likely than for a site far from infrastructure for imported water).

The underlying groundwater aquifer type and the presence of a well are two additional factors that affect the water rating. In general, sites underlain by an alluvial or sedimentary aquifer receive the highest ratings because these substrates have a much greater capacity to hold water than fractured crystalline rock. A site underlain by an alluvial or sedimentary aquifer with an existing well receives a higher rating than a site underlain by these geologic formations but having no existing well because of the cost associated with well installation. Well installation costs are added to the initial capital outlay required to begin an agricultural operation, thereby reducing the water rating if no well is present. The availability of groundwater in fractured crystalline rock is highly uncertain. However, a site underlain by fractured crystalline rock that has an existing well and is located adjacent to imported water infrastructure receives a moderate rating to take into account the cost of well installation, and the increased likelihood that imported water may become available at the site in the near future. Additionally, while groundwater yield in fractured crystalline rock is generally limited compared to other aquifer types, it can provide a good source of groundwater, especially in valley areas where there may be saturated residuum overlying the fractured crystalline rock. Sites with a well located on fractured crystalline rock, but without imported water infrastructure connections to the site, always receive a low rating because such sites would likely be reliant on a limited groundwater resource for the foreseeable future.

Nearly all agriculture in the desert basins is located in Borrego Valley, where documented groundwater overdraft conditions limit the long-term sustainability of agricultural use. A site located in a desert basin receives a low water rating due to the absence of imported water, and low groundwater recharge rates, which can easily result in groundwater overdraft conditions as documented in Borrego Valley, where extraction rates far exceed natural recharge. The Borrego Municipal Water District is taking measures to reduce water use in the basin through encouraging the fallowing of agricultural land. In addition, the County of San Diego requires proposed projects to mitigate for significant impacts to groundwater supply in accordance with CEQA. Mitigation may be achieved through the fallowing of agricultural land. These factors make preservation of agriculture in Borrego Valley infeasible in the long term when

considering the need to reduce overall groundwater use to protect the public health and the sustainability of the community.

Groundwater Quantity and Quality Explanation

The following discussion explains the reasoning behind the water rating reductions detailed in Table 4, Groundwater Availability and Quality Effects on Water Rating. The lack of a well with adequate yield (1.9 GPM for each acre of irrigated crops) reduces the water rating by one factor. This standard is based on the well yield needed to achieve production of 3 AFY per acre, an average crop irrigation requirement for crops produced locally (Table 5).

Table 5. Crop Water Use Averages

Crop	Typical Water Usage Per Acre (AFY)
Indoor Flowering and Foliage Plants	3-4
Ornamental Shrubs and Trees	3
Avocados	3
Bedding Plants	3
Cut Flowers	2-3
Tomatoes	2
Citrus	2.5-3
Poinsettias	3-4
Strawberries	3
Average	**3**

Source: UC Cooperative Extension, County of San Diego

A well with poor water quality (as measured by TDS levels above 600 mg/L or another documented water quality limitation) may reduce the water rating by one factor to account for agricultural limitations associated with using poor quality water for crop production. Groundwater with TDS concentrations above 600 mg/L is the guideline for allowing a reduction in the water factor based on available research on the effects of TDS on crop production, with specific focus on the effects on crops important to the San Diego region. In general, as TDS levels rise, water has diminishing value for agricultural use as it can restrict the range of crops that can be irrigated with the water and increases the cost of irrigation system maintenance.

According to the San Diego County Water Authority Agricultural Irrigation Water Management Plan, TDS levels above 500 mg/L are problematic for many of the subtropical crops produced in San Diego County, and TDS levels over 1,000 mg/l are virtually unusable for many of the subtropical crops grown here (2001). While TDS concentrations above 500 mg/L can be problematic for many subtropical crops, concentrations above 600 mg/L was selected as the guideline to take into account the already elevated TDS concentrations in imported water sources. Another study (Peterson, 1999) identified the TDS tolerance of selected crops. Field crops such as oat hay, wheat hay and barley were found to tolerate water with TDS levels up to 2,500

mg/L, but these are among the lowest value crops produced in the County. Strawberries were found to be intolerant to TDS levels greater than 500 mg/L; apples, grapes, potato, onion, and peppers slightly tolerant to TDS levels up to 800 mg/L; and cucumbers, tomatoes, and squash moderately tolerant to TDS levels up to 1,500 mg/L. The Florida Container Nursery BMP Guide prepared by the University of Florida Agricultural Extension (2006) identified TDS levels and the associated degree of problem that will be experienced for microirrigated container nursery production at different TDS levels. TDS of 525 mg/L or less was identified as producing no problems, TDS from 525 to 2100 mg/L having increasing problems, and TDS greater than 2100 mg/L having severe problems. High levels of TDS can be overcome through planting more salt resistant crops; however salt resistant crops are typically lower in value and would not produce the economic returns necessary to sustain a viable farming industry in San Diego County (high cost of production and land generally require production of high value crops). In general as TDS levels rise, crop yields decline, maintenance of irrigation systems becomes more difficult, and the range of crops (particularly high value crops) that can be supported is reduced.

In summary, TDS levels in groundwater above 600 mg/L substantially impair the water as a source of irrigation for agriculture, justifying a reduction in the water rating by one factor to account for the potential for reduced yields, increased difficulty in maintaining irrigation systems, and reduction in the range of crops that can be produced.

It is important to note that TDS is only one measure of water quality and does not differentiate between the various types of dissolved solids or contaminants that may be present in water. High levels of certain constituents can cause severe problems for agricultural production. For example, high chloride content can damage certain crops, while nitrates can cause problems for livestock. If specific documented limitations exist that reduce the viability of the water supply for agriculture, the water rating should be reduced. The quality of imported water is not considered because it is assumed that the MWD will deliver water with a maximum TDS of 500 mg/L, their adopted TDS objective for imported water deliveries.

3.1.2 Climate

Ratings associated with each Generalized Western Plantclimate Zone or “Sunset Zone” are included in Table 6, Climate Rating. The table identifies and describes each zone and justification for the associated rating.[8] Detailed descriptions of the Sunset Zones in San Diego County are included in Attachment B.

[8] All Sunset Zones in the County are not included in the table. Zone 22 is a small area that occurs entirely within Camp Pendleton, therefore no rating is assigned to this zone. Zone 24 is the maritime influenced zone. Only limited portions of unincorporated communities exist in this zone (County Islands in National City and the west Sweetwater area). Although this zone is valuable for certain high value crops, it is not assigned any importance rating due to the very small area of unincorporated land that occurs in this zone and the fact that the land is fully urbanized.

Table 6. Climate Rating

Climate (Sunset Zone) Description	Rating	Justification
Zone 23 represents thermal belts of the Coastal Areaclimate and is one of the most favorable for growing subtropical plants and most favorable for growing avocados. Zone 23 occurs in coastal incorporated cities and also occurs in the unincorporated communities of Fallbrook, Rainbow, Bonsall, San Dieguito, Lakeside, western portions of Crest and Valle De Oro, Spring Valley, Otay, and western portion of Jamul-Dulzura.	**High**	Zone 23 is rated high because this climate zone is the most favorable for growing some of the County's most productive crops. Year round mild temperatures allow year round production and the proximity to urban areas and infrastructure facilitates efficient delivery to market.
Zone 21 is an air drained thermal belt that is good for citrus and is the mildest zone that gets adequate winter chilling for some plants. Low temperatures range from 23 to 36 degrees F, with temperatures rarely dropping far below 30 degrees.	**High**	Zone 21 is rated high because of the mild year round temperatures and lack of freezing temperatures that allow year round production of high value crops. The importance of this zone is also related to the conversion pressure that exists due to urban encroachment. Preserving agriculture in Zone 21 is essential to maintain the high returns per acre that are common in this County. Climate is the essential factor that allows high value production. The loss of significant agricultural lands in Zone 21 would eventually relegate agriculture to areas further east where most of the County's high value crops cannot be viably produced. Zone 21 is also favorable due to its location close to urban areas and transportation infrastructure which facilitates product delivery to market.
Zone 20 is a cold air basin that may be dominated by coastal influence for a day, week or month and then may be dominated for similar periods of time by continental air. Over a 20 year period, winter lows in Zone 20 ranged from 28 to 23 degrees F.	**High**	Zone 20 occurs the Ramona area. Citrus groves are common in Zone 20 in addition to a concentration of animal agriculture operations and vineyards. Most of Zone 20 falls within the 89,000-acre Ramona Valley viticultural area which was designated as its own appellation in 2006 and contains 17 vineyards currently cultivating an estimated 45 acres of wine grapes. The distinguishing factors of the Ramona Valley viticultural area include its elevation, which contrasts with the surrounding areas, and climatic factors related to its elevation and inland location. Due to the favorable climate, proximity to urban areas, and its potential to become a more widely recognized viticultural area, Zone 20 is rated as a climate of high importance.
Zone 19 is prime for citrus, and most avocadoes and macadamia nuts can also be grown here.	**High**	Zone 19 is rated high due to the suitability for growing the County's high value crops and its location close to urban areas.

Zone 18 is a mountainous zone subject to frosts. Citrus can be grown in Zone 18, but frosts require the heating of orchards to reduce fruit loss. Zone 18 is the home of Julian's apple orchards.	**Moderate**	Zone 18 is assigned a medium rating due to its frost susceptibility, reducing its potential for supporting year round production and frost sensitive crops. However, the ability to produce crops that require winter chilling makes it a climate zone of moderate importance.
Zone 13 covers low elevation desert areas (considered subtropical) and is the most extensive of the County's desert Plantclimate zones. Zone 13 includes the extensive agricultural uses in the Borrego Valley.	**Moderate**	Zone 13 is assigned a moderate rating due to the temperature extremes characteristic of this zone. These temperature extremes exclude some of the subtropicals grown in Zones 22 to 24, however numerous subtropicals with high heat requirements thrive in this climate such as dates, grapefruit, and beaumontia and thevetia (ornamentals).
Zone 11 is located below the high elevation Zone 3 and above the subtropical desert Zone 13.	**Low**	Zone 11 is assigned a low climate rating due the agricultural hazards of the climate including late spring frosts and desert winds.
Zone 3 occurs in the high elevation Palomar Mountains in addition to high elevation areas east of the Tecate Divide. These are locations where snow can fall and wide swings in temperature occur.	**Low**	Most of these lands are pubic lands, reducing their potential for commercial agriculture. The wide swings in temperature, including freezing temperatures in winter make this zone of low importance agriculturally. This zone is also far from transportation infrastructure; an important consideration for crop delivery to market.

While it is anticipated that the climate ratings would normally not be modified, it is important to acknowledge that microclimate conditions do exist that cannot be captured in the Sunset Zone definitions. For example, topography can create certain microclimate conditions such as frost susceptibility that could downgrade the climate importance of a site to marginal if frost tolerant crops cannot be grown at the site. Any downgrading or upgrading of a climate rating must be accompanied by site specific climate data to support the modification, and any identified climate limitations must be based on the range of crops that could be viable at the site. For example, if frost sensitive crops are the only crop identified to be viable at the site and the site would be subject to frequent frosts, this should be documented and a lower rating may be applied. It is not anticipated that climate modifications would be commonly used given the diversity of crops that a site would usually be able to support.

Sunset Zones are used as a standard measure of climate suitability due to the variability of microclimate conditions that the Sunset zones take into account. Recognizing that the Sunset Zones were not developed as a tool to determine the suitability for commercial agricultural production, their use is not intended to determine suitability for specific crops, rather they are a measure of overall climate suitability for the typical agricultural commodities produced in San Diego County. For example, the Sunset Zone designations take into account the USDA hardiness rating which identifies the lowest temperature at which a plant will thrive. Sunset Zones start with the USDA hardiness zones and add the effects of summer heat in ranking plant suitability for an area. The American Horticulture Society (AHS) heat zone map ranks plants for suitability to heat, humidity and dryness. The AHS heat zone map was developed under the direction of

Dr. H. Marc Cathey, who was instrumental in the organization of the USDA Plant Hardiness Map. Each AHS heat zone has "heat days," those days with temperatures of 86° F or above. 86° F is the point at which some plants suffer damage to cellular proteins. The USDA plant hardiness zone maps and/or the AHS heat zone map may be used to supplement the Sunset Zone information if the Sunset Zone descriptions are not accurate.

3.1.3 Soil Quality

The project's soil quality rating is based on the presence of Prime Farmland Soils or Soils of Statewide Significance (Attachment C) that are available for agricultural use and that have been previously used for agriculture. Land covered by structures, roads, or other uses that would preclude the use of the land for agriculture, are not typically considered in the soil quality rating. To determine the soil quality rating, the soil types on the project site must be identified. The soils data for the project site must be entered into Table 7, Soil Quality Matrix as detailed in the steps below:

Step 1.
Identify the soil types that are on the project site. Enter each soil type in Rows 1 through 13 of Column A. If the site has more soil types than available rows, add additional rows as needed.

Step 2.
Calculate the acreage of each soil type that occurs on the project site and enter the acreage of each in Column B. Enter the total acreage in Row 14, Column B. This number should equal the total acreage of the project site.

Step 3.
Calculate the acreage of each soil type that is unavailable for agricultural use[9] and enter the total in the corresponding rows of Column C.

Step 4.
Subtract the values in Column C from the acreages of each soil type identified in Column B**.** Enter the result in Column D.

[9] Soils unavailable for agricultural use include: 1) lands with existing structures (paved roads, homes, etc.) that preclude the use of the soil for agriculture, 2) lands that have been disturbed by activities such as legal grading, compaction and/or placement of fill such that soil structure and quality have likely been compromised (e.g., unpaved roads and parking areas), 3) lands that are primarily a biological habitat type that have never been used for agriculture, and 4) lands constrained by biological conservation easements, biological preserve, or similar regulatory or legal exclusion that prohibits agricultural use. The distinction between agriculture and biological resources is not always clear because agricultural lands commonly support sensitive biological species. Agricultural lands that incidentally support sensitive species should still be considered an agricultural resource; however, biological habitats that have never been used for agriculture should not be considered an agricultural resource. It is possible that non-native grasslands will be classified as both a biological resource and an agricultural resource since many non-native grasslands have been established based on a history of agricultural use.

Step 5.
Sum the acreage values in Column D and enter the total in Column D, Row 14.

Step 6.
Divide the acres of each soil type in Column D by the total acreage available for agricultural use (Column D, Row 14) to determine the proportion of each soil type available for agricultural use on the project site. Enter the proportion of each soil type in the corresponding row of Column E.

Step 7.
Determine whether each soil type is a soil candidate for Prime Farmland or Farmland of Statewide Importance. If yes, enter 1 in the corresponding row of Column F. If no, enter zero in the corresponding row of Column F.

Step 8.
Multiply Column E x Column F. Enter the result in the corresponding row of Column G.

Step 9.
Sum the values in Column G and enter the result in Column G, Row 15 to obtain the total soil quality matrix score.

Step 10.
Based on the total soil quality matrix score from Table 7, identify the corresponding soil quality rating using Table 8 Soil Quality Matrix Interpretation

Table 7. Soil Quality Matrix

	Column A	Column B	Column C	Column D	Column E	Column F	Column G
	Soil Type	Size of project site (acreage)	Unavailable for agricultural use	Available for agricultural use	Proportion of project site	Is soil candidate for prime farmland or farmland of statewide significance? (Yes = 1, No = 0)	Multiply Column E x Column F
Row 1							
Row 2							
Row 3							
Row 4							
Row 5							
Row 6							
Row 7							
Row 8							
Row 9							
Row 10							
Row 11							
Row 12							
Row 13							
Row 14	Total		Total				
Row 15						***Soil Quality Matrix Score***	

Table 8. Soil Quality Matrix Interpretation

Soil Quality Matrix Score	Soil Quality Rating
The site has a Soil Quality Matrix score ranging from 0.66 to 1.0 and has a minimum of 10 acres of contiguous Prime Farmland or Statewide Importance Soils	High
The site has a Soil Quality Matrix score ranging from 0.33 to 0.66 or the site has a minimum of 10 acres of contiguous Prime Farmland or Statewide Importance Soils	Moderate
The site has a Soil Quality Matrix score less than 0.33 and does not have 10 acres or more of contiguous Prime Farmland or Statewide Importance Soils	Low

Soil Quality Rating Justification

The presence of Prime Farmland Soils or Soils of Statewide Significance is used as the measure of quality soil in the LARA soil quality rating based on their use in defining soil candidates for the FMMP Farmland categories of Prime Farmland and Farmland of Statewide Importance. Soil candidates for the FMMP Prime Farmland designation are soils with the best combination of physical and chemical characteristics for the production of crops. Soil candidates for the FMMP Farmland of Statewide Importance designation are similar to the soil criteria for Prime Farmland, but include minor shortcomings, such as greater slopes or less ability to store soil moisture. Soil candidates for Farmland of Statewide Importance do not have any restrictions regarding permeability or rooting depth. Soil candidates for Farmland of Statewide Significance are included in this rating to capture quality soils with minor shortcomings that may not have been included, if the typical definition of Prime Agricultural Land as stated in Government Code Section 51201(c) was used. Soil criteria used in Government Code Section 51201(c) identifies any land with a LCC rating of I or II or a Storie Index Rating from 80 to 100 as land that meets the definition of prime agricultural land. Because San Diego County has limited quantities of soils that meet these criteria, locally defined NRCS soil candidates for Prime Farmland and Farmland of Statewide Importance are included to define quality soils in this locale given that 70% of these soils have LCC higher than I or II and 88% have SI ratings below 80. Details regarding the soil criteria that determine the applicability of a soil for the respective Farmland designation is included in Attachment C, Soil Candidate Criteria and Candidate Listing for Prime Farmland and Farmland of Statewide Importance.

Table 8, Soil Quality Matrix Interpretation, identifies high, moderate, or low importance ratings based on the soil quality matrix score from Table 7. The maximum possible soil quality matrix score is one and the minimum is zero because the score is based on the amount of the agricultural resources onsite that are Prime and Statewide Importance soil candidates. A site with a soil quality matrix score of 0.66 or higher means that two-thirds of the agricultural resources onsite have soils that meet the soil quality criteria for Prime Farmland or Farmland of Statewide Importance. A minimum of 10 contiguous acres is required for a site to be assigned the highest soil quality rating to reflect the need for high quality soils to be contiguous in order for them to be considered useful

agriculturally. If the site has a soil quality score from 0.33 to 0.66 or has 10 acres or more of contiguous soils that meet the soil quality criteria for Prime Farmland or Farmland of Statewide Importance, the site is assigned the moderate importance rating. If less than one-third of the site or less than 10 contiguous acres of the agricultural resources onsite have soils that meet the Prime or Statewide Importance soil criteria, the site is assigned the low importance rating for soil quality. A ten acre threshold is included in the ratings to capture the potential for a large project site to have a substantial quantity of high quality soils and still receive a low importance rating due to the project's size in relation to the acreage of quality soils. Ten acres is an appropriate acreage to use in this context because ten acres would typically be able to support a wide range of agricultural uses in San Diego County. Furthermore, to be eligible for a Williamson Act Contract in an Agricultural Preserve, the County of San Diego Board of Supervisor's Policy I-38 (Agricultural Preserves) recommends various minimum ownership sizes, with ten acres being the minimum, to be eligible for a contract. Ten acres is listed as the minimum size for various agricultural activities including poultry, tree crops, truck crops, and flowers. The requirement that the land be contiguous recognizes that small, scattered pockets of high quality soils are less valuable for agricultural use than an area of contiguous high quality soils.

3.1.4 Surrounding Land Use

Surrounding land use is a factor in determining the importance of an agricultural resource because surrounding land uses that are compatible with agriculture make a site more attractive for agricultural use due to lower expectations of nuisance issues and other potential impacts from non-farm neighbors. This factor also accounts for the degree to which an area is primarily agricultural, assigning a higher rating to areas dominated by agricultural uses than an area dominated by higher density, urban development. Surrounding land use is a complementary factor in the LARA model because the presence of compatible surrounding land uses can support the viability of an agricultural operation; however a lack of compatible surrounding land uses would not usually prohibit productive agriculture from taking place (depending on the type of production). Similarly, agriculture can be viable among urban uses, but its long term viability would generally be less than an agricultural operation conducting operations in an area dominated by agricultural uses because of lesser economic pressures to convert to urban uses. To determine the surrounding land use rating, the following information must be determined:

Step 1.
Calculate the total acreage of lands compatible with agricultural use[10] within the defined Zone of Influence (ZOI).[11] The location of agricultural lands can be determined using information from the DOC's Important Farmland Map Series, agricultural land use data available from the DPLU, aerial photography, and/or direct site inspection. Land within a ZOI that is observed to be fallow or with a history of agricultural use will usually be considered agricultural land, unless there is evidence that it has been committed to a non-agricultural use (such as having an approved subdivision map). The Department of Planning and Land Use may consult the Department of Agriculture, Weights and Measures if there are disputed interpretations.

Step 2.
Calculate the percentage of the acreage within the project's ZOI that is compatible with agricultural use.

Step 3.
Based on the proportion of lands within the ZOI that are compatible with agricultural use, identify the appropriate surrounding land use rating in accordance with Table 9, Surrounding Land Use Rating.

Table 9. Surrounding Land Use Rating

Percentage of Land within ZOI that is Compatible with Agriculture	Surrounding Land Use Rating
50% or greater	High
Greater than 25% but less than 50%	Moderate
25% or less	Low

Considering surrounding land uses within the ZOI is intended to provide a measurement of the long term sustainability of agriculture at the project site. Agriculture is generally

[10] Lands compatible with agricultural uses include existing agricultural lands, protected resource lands, and lands that are primarily rural residential. Protected resource lands are those lands with long-term use restrictions that are compatible with or supportive of agricultural uses including but not limited to Williamson Act contracted lands; publicly owned lands maintained as park, forest, open space, or watershed resources; and lands with agricultural, wildlife habitat, open space, or other natural resource easements that restrict the conversion of such land to urban or industrial uses. For the purposes of this factor rating, rural residential lands include any residential development with parcel sizes of two acres or greater and that contain elements of a rural lifestyle such as equestrian uses, animal raising, small hobby type agricultural uses, or vacant lands. Residential parcels with swimming pools, children's play areas, second dwelling units, or other accessory uses that occupy a majority of the usable space of a residential parcel should not be identified as land compatible with agriculture.

[11] Attachment F details the steps required to determine the Zone of Influence (ZOI). The ZOI methodology is taken from the Department of Conservation's Land Evaluation Site Assessment (LESA) model and includes a minimum area of ¼ mile beyond project boundaries and includes the entire area of all parcels that intersect the ¼ mile boundary. The ZOI developed by the Department of Conservation is the result of several iterations during development of the LESA model for assessing an area that would generally be a representative sample of surrounding land use. For example, a 160 acre project site would have a ZOI that is a minimum of eight times greater (1280 acres) than the project itself.

compatible with other agricultural land uses because they are more likely be tolerant of the typical activities and nuisances associated with agricultural operations than urban land uses would be. Primarily rural residential lands are included as a land use compatible with agriculture because rural residential lands are already common among agricultural uses and most active farms also have residences on the site. Although not all types of agriculture are compatible with rural residential land uses (i.e. confined animal facilities); many typical San Diego County farming operations are compatible with rural residential land uses as is evidenced by the existing viability of agricultural operations that are located among rural residential land uses. For example, in many North County communities, small parcels (two acres, for example) with a single family residence and a small orchard or other farming or equestrian use are common. These residential uses, due to their direct involvement in agriculture or a rural lifestyle, would tend to be more compatible with agriculture than a high density development where homeowners would be less likely to be directly involved in rural lifestyle activities (e.g. agriculture, equestrian, animal raising, etc.). Occupants of higher density residential uses are more likely to be disturbed by noise, dust, pesticides or other nuisances that do not fit with the peaceful perceptions of living in the countryside.

3.1.5 Land Use Consistency

The median parcel size associated with the project site compared to the median parcel size of parcels located within the ZOI is a complementary factor used in the LARA model. In order to determine the land use consistency rating for the project, the following information must be determined:

Step 1.
Identify the median parcel size associated with the proposed project if the proposed project consists of at least three parcels. If the proposed project consists of two parcels, use an average. If the proposed project consists of only one parcel, then no median or average is needed.

Step 2.
Identify the median parcel size of the parcels located within the project's ZOI.

Step 3.
Considering the project's median parcel size and the ZOI median parcel size, identify the land use consistency rating in accordance with Table 10.

Table 10. Land Use Consistency Rating

Project's median parcel size compared to ZOI median parcel size	Land Use Consistency Rating
The project's median parcel size is smaller than the median parcel size within the project's ZOI	High
The project's median parcel size is up to ten acres larger than the median parcel size within the project's ZOI	Moderate
The project's median parcel size is larger than the median parcel size within the project's ZOI by ten acres or more	Low

Land use consistency is used as a measure of importance to recognize the effect that surrounding urbanization has on the viability of ongoing agricultural uses and to recognize that as urbanization surrounds agricultural lands, opportunity costs[12] for agricultural operators increase, thus reducing the viability of an agricultural operation. A site surrounded by larger parcels indicates that the site is located in an area that has not already been significantly urbanized and the area is more likely to continue to support viable agricultural uses. On the other hand, a site surrounded by smaller parcels indicates a lower likelihood of ongoing commercial agriculture viability considering the greater expectations of land use incompatibilities that the site is likely to experience and the reduction in economic viability when considering forgone opportunity costs. The median parcel size is used instead of an average to account for the potential for a very large or very small parcel to exist that would skew the result if using an average.

3.1.6 Slope

To determine the Slope Rating for the site, the average slope for the area of the site that is available for agricultural use must be determined. Refer to Column D of Table 7, Soil Quality Rating Matrix, for the areas of the site considered available for agricultural use. When the average slope of the areas of the site that is available for agricultural use is determined, identify the corresponding topography rating as outlined in Table 11, below.

Table 11. Slope Rating

Average Slope	Topography Rating
Less than 15% slope	High
15% up to 25% slope	Moderate
25% slope and higher	Low Importance

[12] Opportunity cost is an economic term. It means the cost of something in terms of an opportunity foregone (and the benefits that could be received from that opportunity), or the most valuable foregone alternative. For example, if a land owner decides to farm his land, the opportunity cost is the value of one or more alternative uses of that land, such as a residential subdivision. If he continues to farm the land, the opportunity cost is the revenue that he does not receive from building houses. Thus, as opportunity costs rise, the viability of continuing the current action (i.e. agricultural use) decreases. This conclusion is based on the fact that agricultural use of land is primarily an economic decision. When factors, such as increased opportunity costs, make use of the land for agriculture less profitable than other uses, the long term viability of agriculture decreases.